

London City Airport RNAV Replications

Consultation Feedback Report

Issue 1.0

February 2015

Table of Contents

1	Introduction.....	3
2	Consultation Objective and Analysis Process	3
3	Justification for the proposed RNAV routes	3
4	Overview of Responses	6
5	Questions and Concerns Raised, and London City’s Response.....	13
6	Conclusion and Next Steps	18
	Appendix A: References	19

1 Introduction

- 1.1 From 4th September – 27th November 2014, London City Airport conducted a 12 week consultation soliciting feedback on proposals to replace the conventional departure and arrival routes with equivalent RNAV routes (commonly known as RNAV replication). The proposal is to introduce RNAV routes, which will in the long term supersede the existing conventional routes.
- 1.2 This report provides feedback to stakeholders who participated in this consultation exercise, all of whom have been notified of its publication on the London City Airport website:
<http://www.londoncityairport.com/londonairspacemanagement>
- 1.3 This document should be read in conjunction with the stakeholder consultation document. All acronyms and technical terms are explained in full in the stakeholder consultation document. For reference the stakeholder consultation document is also available from the web address above.

2 Consultation Objective and Analysis Process

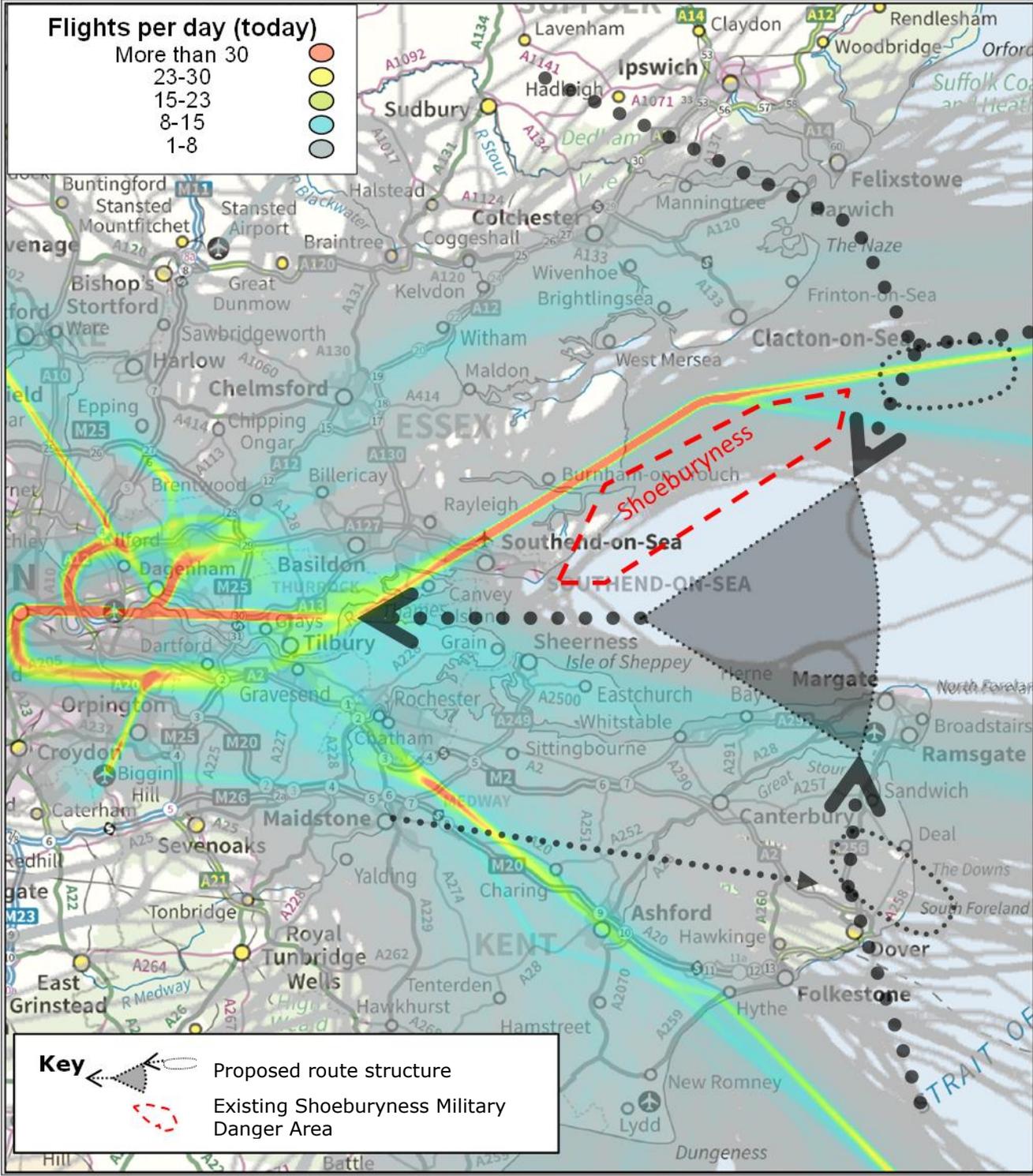
- 2.1 When we propose to make changes to airspace arrangements we take into account Government and CAA guidance (found in references 1 and 2 respectively). These highlight a number of generic areas that must be considered and balanced in the development of a proposal, ranging from safety and delay management, through to minimising CO₂ emissions and noise mitigation.
- 2.2 The CAA process for airspace change (ref 2) states that consultation is about “confirming and attaining opinions about the impacts of a proposed change”. These are covered in Section 4 where we summarise the main themes raised in the consultation and also describes how each has been considered. There were also a number of questions raised in response to consultation – these are covered in Section 5.
- 2.3 When interpreting Section 4 it is important to note that the CAA has indicated that the aim of airspace consultation processes is not to gauge the popularity of a proposal *per se*. Rather it is a process for identifying new and relevant information that should be taken into account in the proposal alongside the existing guidance (refs 1 & 2). All relevant issues are therefore considered equally whether they are raised by a single respondent or many.
- 2.4 In accordance with the CAA Policy “Guidance On PBN SID Replication For Conventional SID Replacement” (ref 3), the CAA have confirmed that the proposed route designs are replications of the existing conventional routes.

3 Justification for the proposed RNAV routes

- 3.1 The introduction of RNAV1 routes is justified in part by the requirement to conform to European legal requirements and CAA mandates as detailed below. Our intention is to meet these requirements with the minimum impact to

stakeholders; hence we are seeking to replicate all the existing conventional routes with equivalent RNAV routes rather than designing new ones. The aim of replication is to match the existing conventional routes as closely as possible, in line with regulatory guidance and within the rules of what is allowed for RNAV routes.

- 3.2 Approximately 70% of aircraft flying from London City are equipped to fly RNAV routes; the remainder still rely on conventional navigation. We therefore propose to keep the conventional routes for use alongside the proposed RNAV replications, until such time as RNAV1 is fully adopted, after which the conventional routes will be removed. The CAA has issued notification of a mandate that all commercial aircraft operating in the London area will have to be RNAV1 approved by November 2017, and airports in the London area must replace conventional routes by November 2019 (see ref 7). After the implementation of the RNAV routes at London City (planned for December 2015) the majority of those aircraft, which are already approved for RNAV1, will use the new routes. There will then be a transitional period to 2017 where the remaining airlines progressively transition to full RNAV1 operations. The conventional routes will then be withdrawn by November 2019.
- 3.3 A further justification for the London City route replication is that they will enable connectivity with the RNAV1 route structure as proposed in the NATS London Airspace Management Programme (LAMP) Phase 1 airspace change proposal which NATS are submitting to the CAA concurrently with this proposal. End to end RNAV1 connectivity between the enroute network and the arrivals & departure routes will enable the ATC network to operate more efficiently. There are environmental benefits which will be achieved by enabling departures to climb higher earlier, and repositioning higher level arrival routes over the Thames Estuary (see Figure 1). As a result the combined LAMP proposal will both reduce the CO₂ impact of each flight, and also reduce the noise impact by reducing the time aircraft spend at 3000-4,000ft over parts of East London, Kent and Essex. These benefits could not be realised without our proposal to replicate the low level routes for London City Airport.



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Figure 1. LAMP Network – arrivals repositioned over the Thames Estuary

For further information on the LAMP network proposals and its benefits please see ref 8.

4 Overview of Responses

Summary of Outreach/Publicity

- 4.1 Given the nature of this proposal, (the replication of existing routes using a different navigation standard) the CAA required that consultation was focused through the London City Airport Consultative Committee (LCACC). In addition the information was accessible through the London City Airport website, and London City engaged through local media.
- 4.2 The consultation documents were published on the London City Airport website on the 3rd September 2014, and have remained available continuously since then.
- 4.3 A presentation was given to the LCACC on the 3rd September 2014
- 4.4 The stakeholder consultation document was sent to relevant organisations, including:
- selected National Air Traffic Management Advisory Committee (NATMAC) representatives,
 - representatives of all airlines operating from London City Airport, and
 - all members of the London City Airport Consultative Committee (LCACC).

The full stakeholder list is given in Appendix A of the consultation Appendices document. Members of the public were also able to participate in the consultation and 483 did so.

- 4.5 London City Airport issued press releases to raise public awareness at the start, midpoint, and 2 weeks before the end of the consultation. In total this generated 25 media items through the London, Essex, and Kent regions.
- 4.6 As a consequence the LCA LAMP consultation web page and its contents attracted 1,373 unique visitors during the consultation. The consultation document was downloaded 55 times the appendices were downloaded 18 times.
- 4.7 Public meetings were attended by representatives from London City Airport on 3rd November (Wanstead Library) and 24th November (East Forest Residents Association, Leyton).

Response Overview

- 4.8 This section provides a statistical overview of the themes raised through the consultation response.
- 4.9 The numbers of responses are summarised in the pie chart at Figure 2.
- 4.10 The responses categories (support/object/no objection) are summarised in Figure 1. There were 14 responses in support of the proposal. 38 responses indicated no comment or no objection to the proposal. There were 452 responses which opposed the proposals.

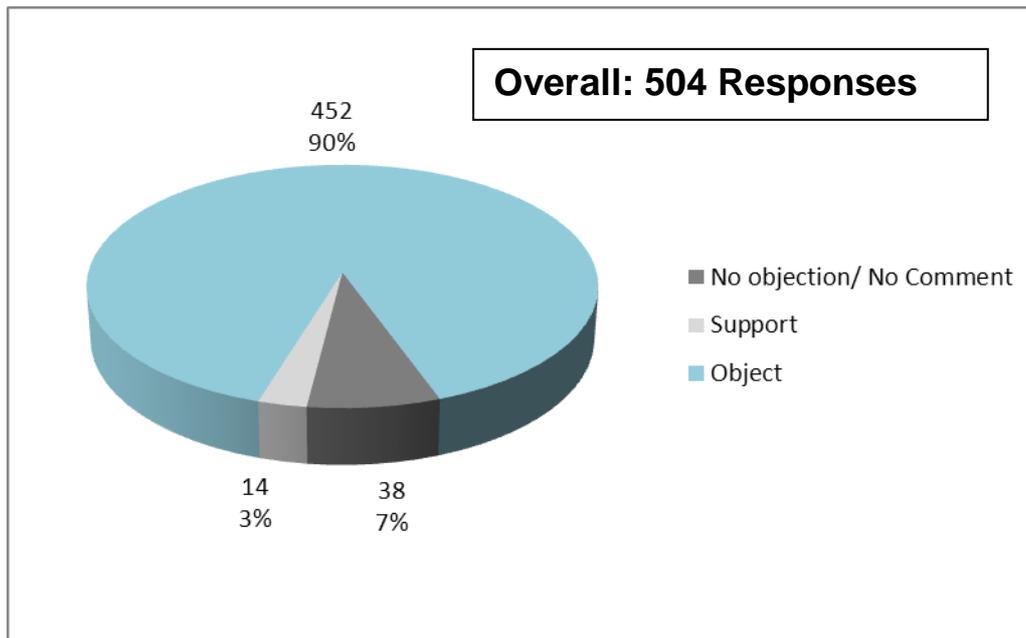


Figure 2. All stakeholder responses pie chart

Assessment of Themes

4.11 CAA guidance states that consultation is about confirming stakeholder opinions (ref 2). Furthermore the Government has published guidance which describes the environmental objectives for airspace change (ref 1). This includes a description of the generic objectives that the sponsors of a proposal must seek to fulfil.

4.12 In this section we consider the generic themes raised by respondents to our consultation.

Theme 1: Extent of consultation

4.13 Some respondents were concerned that the consultation was not publicised more widely and did not include such methods as leafleting individual households.

4.14 The replication of conventional air routes with RNAV routes is a technical process. The objective of the proposal is simply to match the RNAV routes as closely as possible to the existing flight paths using more reliable modern systems. The majority of aircraft flying from London City already navigate using RNAV, but follow informal "RNAV overlays" of the conventional routes. For the majority of stakeholders introduction of RNAV routes will result in no noticeable change in the over-flights to which they are currently exposed. Hence in accordance with the principal of proportionality, the CAA recommends in its policy on RNAV replication (ref. 3) that the primary stakeholders required for consultation for this process are the:

- Airport Consultative Committee, (LCACC, includes representation from local councils, businesses and residents groups)
- National Air Traffic Management Advisory Committee (NATMAC), (includes representatives of all aviation groups)
- Airlines operating from the airport in question.

In accordance with the CAA guidelines the general public was notified via the local media, with press releases being issued at the start of consultation (see Section 3 for details of the media coverage). This engagement with the local media resulted in extensive dissemination of the information and ensured that the consultation was widely publicised.

4.15 Some press releases issued by 3rd party organisations generated some inaccurate/ misleading media coverage. For example the number of over-flights was grossly exaggerated as discussed in section 5.10 below.

4.16 There was extensive dialog with groups such as HACAN during consultation, and London City Airport attended public meetings at the invitation of HACAN.

4.17 The Greater London Authority (GLA) were involved in the consultation from the outset. The GLA are represented on the LCACC and were sent the consultation material at the commencement. Dialogue was maintained with officers, assembly members, the Mayor and his team between September and November.

Theme 2: Concentration of flight paths

4.18 The issue of concentration versus dispersal is addressed by Government policy as outlined in the DfT “Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions” (ref 1). This states:

(para 7.3) *“the balance of social and environmental advantage lies in concentrating aircraft taking off from airports along the fewest possible number of specified routes and that these routes should avoid densely populated areas as far as possible. The framework also stresses that any changes to departure routes should avoid significantly increasing the number of people affected by aircraft noise.”*

(para 7.5) *“The Government supports the adoption of PBN as endorsed by FAS (see Chapter 4.13). PBN will mean that aircraft following a particular route will adhere to that route more consistently than they do the historic conventional routes. This will increase the concentration of traffic and impact over the areas directly beneath the published NPR, but will reduce the overall extent of the areas overflowed, thereby offering the potential to reduce the number of people exposed to noise from aircraft flying below 7,000ft (amsl).”*

Notes:

FAS = Future Airspace Strategy – the CAA strategy for modernising the UK airspace and air traffic management (Ref 4)

PBN = Performance Based Navigation – a generic term which includes RNAV

NPR = Noise preferential route. Routes that have been defined by the DfT for larger airports within which departures must stay (The DfT have not designated NPRs for London City).

4.19 The improvement of navigational accuracy which results from upgrading air routes defined by ground based radio beacons (“conventional” navigation), to more precise RNAV routes, is a legal requirement under European Law. This is being enforced in the UK by CAA mandates. In principle this upgrading of the air navigation system will result in flight paths being more concentrated along the route centrelines. However since the majority of aircraft already fly using informal “RNAV overlays” of the conventional routes, to a large extent this concentration has already happened over the course of many years. The introduction of published RNAV departure and arrival routes serves to formalise the use of RNAV, and will compel the minority of aircraft operators who do not already use RNAV, to adopt it.

4.20 To help understand the impact of this type of change, below is an example of how this would be perceived by observers on the ground. The dispersal of aircraft following conventional navigation (which make up less than 30% of flights) is typically less than 0.3nm from the conventional route centreline¹ when flying a straight segment. The average track deviation of an aircraft following a straight segment on an RNAV route is circa 0.1 nautical miles (nm) from the route centreline. Hence if a flight at 4000ft is displaced by 0.2nm (370m), the angle of displacement as seen from the ground is 17°. The difference in the peak noise experienced (L_{max}) as a result of this displacement is 0.7dBA².

¹ 95th percentile

² Noise data from CAA ANCON tool.

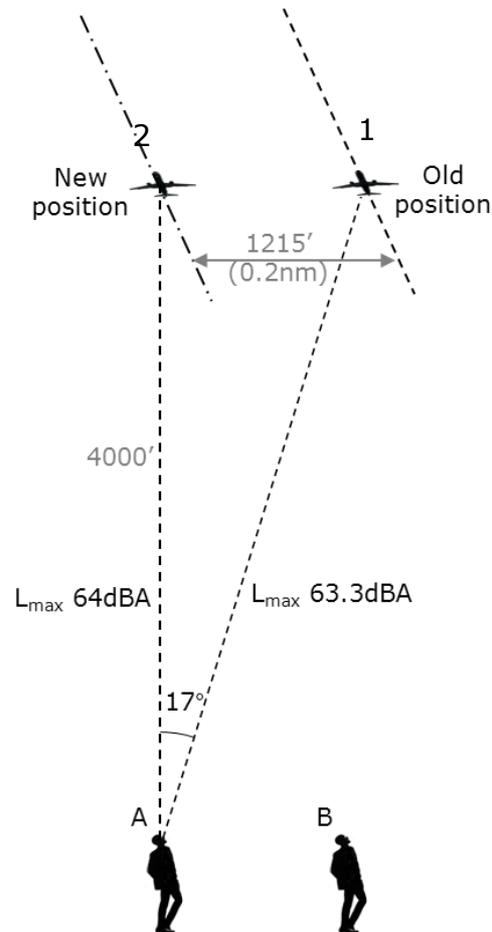


Figure 3. Difference between over-flights at 4000ft, 0.2nm apart.

4.21 This is illustrated in Figure 3: The person at position "A" would hear a peak noise level (L_{max}) of 63.3dBA from a 90 seat regional jet overflying at 4,000ft at position 1 (This is the location of an outlier using conventional navigation). If, due to introducing RNAV, the same aircraft flies over at the same altitude but at position 2 (0.2nm closer to the centre-line) then for person A the peak noise (L_{max}) experienced when this flight passes by, will be increased by 0.7dBA. (similarly for a person at point B the L_{max} noise will be reduced by the same amount).

4.22 The L_{max} noise figures given in Figure 3 are based on a 90 seat regional jet overflying at 4000ft.

4.23 The change to the distribution of traffic either side of the route centre-line will take place gradually over a time frame of several years. This process has already been on-going for many years due to airlines adopting informal RNAV1 overlays. The percentage of aircraft operating from London City Airport which already navigate using RNAV1 is 70%. The remaining 30% are required to upgrade to RNAV1 before November 2017. Even with the introduction of the proposed RNAV1 routes, the conventional routes will still be available for use. Hence any change in the distribution of flights will not occur as a sudden step-change; rather, the transition to 100% RNAV1 navigation will take place gradually over the course of the next 2½ years.

Theme 3: Noise Impact

4.24 Government guidance (ref. 1) indicates that local noise impacts are a key consideration for proposals affecting airspace below 4,000ft.

4.25 The objective of the RNAV replication of conventional routes is to match the new routes as closely as possible to the old conventional ones. Hence there will be very little change in the position of the routes, and subsequently very little change in the aircraft noise experienced by those beneath the routes (as explained above).

4.26 Noise contours are published annually in the London City Airport Annual Performance Report (Annex 4). Figure 4 below is taken from the 2013 Performance report (the latest available at the time of publication). This shows that the 57dBA $L_{Aeq, 16hr}$ contour extends approximately 2.0nm from either end of the runway. This close to the airport, the transition to RNAV will have no discernible effect on the lateral dispersion of the traffic. There will be no significant change to the noise contours³, hence no additional noise analysis has been performed⁴.

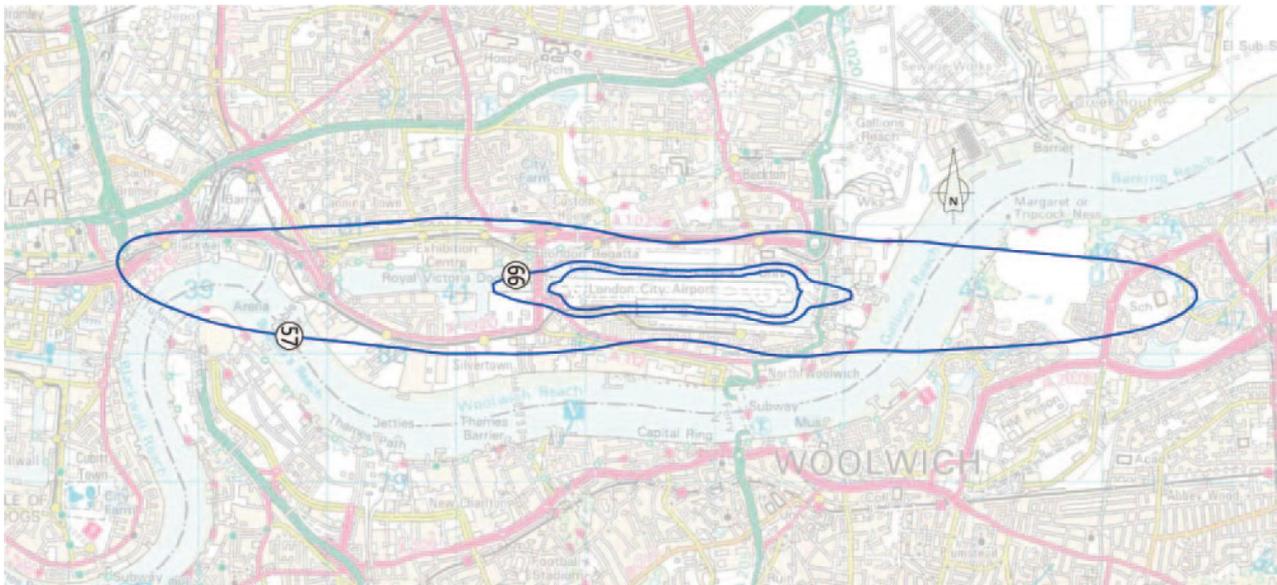


Figure 4. $L_{Aeq, 16hr}$ noise contours, summer 2013(57, 66, 69 dBA).

Theme 4: Impact on Noise Preferential Routes (NPRs)

4.27 No NPRs are defined at London City Airport. Hence references to NPRs in the Government and CAA guidance are not relevant to London City airport.

³ 57dBA $L_{Aeq, 16hr}$ contour extends approximately 2.0nm along the extended runway centre-line. This close to the airport along the runway extended centre-line arrivals will be navigating using the instrument landing system (ILS) and departures navigating using RNAV will not be dispersed differently to those using conventional navigation.

⁴ Note that as this change follows the "Guidance On PBN SID Replication For Conventional SID Replacement" (ref 3) and so noise contour analysis is not a CAA requirement.

Theme 5: Pollution/local air quality/CO₂ emissions

- 4.28 This proposal will not result in a change in local air quality at the surface. Government guidance on airspace change (Ref 1) states that, due to the effects of mixing and dispersion, emissions from aircraft above 1,000ft above ground level will have a negligible impact on local air quality. This proposal will not significantly affect the positioning of flight paths below 1,000ft.
- 4.29 For CO₂ emissions, no benefit is claimed, however RNAV is an enabler for the wider LAMP, which does give significant CO₂ benefits (see paragraph 3.3).

Theme 6: Improved environmental performance and systemisation

- 4.30 Several stakeholders supported the proposals on the grounds that the improved systemisation would make the aircraft track-keeping more consistent. This would also result in improved climb & descent profiles, which would burn less fuel and reduce CO₂ emissions. Pilots and aircraft operators supported the changes since they make approaches more predictable, which allows better descent planning (thus giving more consistent low-power, gliding descents).

Summary

- 4.31 The response to this consultation confirms our understanding of general stakeholder concerns. The public and their representative groups are primarily concerned with perceived noise/quality of life issues. These are issues covered in the Government Guidance which has been a consideration throughout the design process. From experience of other RNAV replications introduced in the UK, the perceived impact of RNAV replication (before it is introduced) by many, is generally greater than it will be in reality.
- 4.32 A number of responses questioned the process followed for the consultation. We have followed the CAA process for replication (Ref 3) throughout and exceeded its requirements in terms of public engagement. We believe that the number of responses and amount of media coverage demonstrate that the consultation was widely publicised.

On the basis of this evaluation of the consultation 'themes' we propose to submit the changes as presented in the consultation to the CAA for their consideration.

5 Questions and Concerns Raised, and London City's Response

5.1 This section presents the questions and concerns raised through the consultation which are not covered by the main themes above. Many of these were addressed in the consultation material, which remains available for your information.

<http://www.londoncityairport.com/londonairspacemanagement>

General Questions

5.2 Why did you do this consultation?

This proposal will introduce 10 RNAV1 SIDs and 2 RNAV1 arrival transitions. These have been designed to replicate the existing conventional routes as closely as possible, commensurate with RNAV1 design criteria. In accordance with the CAA's Airspace Change Process (Ref 1) and the CAA Policy on RNAV replication of conventional routes (Ref 3) formal consultation focussed through the consultative committee is required.

5.3 Why are you doing this now?

The proposed changes will modernise London City routes in line with CAA requirements (ref 7). The CAA are mandating change as part of a UK wide programme to modernise the airspace system and achieve economic, operational and environmental improvements. This programme is known as the Future Airspace Strategy (FAS), developed by the CAA with the support of the aviation industry. The FAS is the UK's vehicle to deliver the benefits of a Single European Sky.

As well as meeting the requirements of the CAA mandate this enables the first phase of the NATS led London Airspace Management Programme (LAMP) which will enable wider environmental benefits (see Para 3.3).

5.4 Does this proposal involve introducing new routes?

No. New routes are not being proposed. We are proposing that the existing routes are replicated (modernised).

5.5 You should introduce respite routes

Respite routes would mean introducing new route alignments which is outside the scope of this proposal (see para 5.4). While respite routes are mentioned in the Government's Aviation Policy Framework (Ref 5) and Guidance on Airspace Change (Ref 1) as an option for airspace changes, the provision of respite routes would spread traffic over a larger area rather than concentrating traffic on the least number of routes, which remains a core requirement of the same guidance.

5.6 Why has there been a recent increase in noise since your consultation? Have you made these changes already?

No - there have been no changes already implemented as part of this proposal. London City Airport is required to follow the airspace change process, as documented in the CAA's airspace change guidance (Ref 2), when proposing permanent changes to the airspace design. Permanent airspace changes

cannot be implemented until a formal proposal has been submitted to, and approved by, the CAA. An exception to this is trial routes, designed to test technical airspace design issues. There have been no changes or trials during or since the consultation period, and therefore any recent changes to the perceived behaviour of aircraft in your vicinity will be the result of variations in flight profiles that are part of normal operations.

In normal operations air traffic controllers consider a range of factors when determining where aircraft fly, such as other traffic in the area, aircraft types, wind direction and other weather conditions. This means that the way in which airspace is used varies from day to day, and even flight by flight (hence the wide swathes in which aircraft may be seen in the route and flight path maps in the consultation document). This variation may lead people to believe that airspace usage has changed when in fact it hasn't.

The weather conditions affect the direction in which the runway is used because for a safe operation aircraft take off and land into the wind. The prevailing wind in the UK is from a west/south-westerly direction, leading to use of Runway 27 at London City⁵. The historical average use of Runway 27 approximates to 73% of the year, but actual usage can vary on a daily basis.

Historically for 27% of the time the wind direction dictates that runway 09 is used (sometimes for days on end). During these times people under the routes used only for runway 09 (e.g. Dagenham & Barking) would have more flights as a consequence of the weather, and not any changes to airspace management. Similarly those living in Bow, Stratford, Hackney, Leyton are only overflown when runway 27 is in use and receive respite when runway 09 is in use.

An additional factor which may be at play is that of sensitisation. Experience from previous consultations indicates that the consultation process itself leads people to take more notice of the established routes that are already above them. It may therefore seem like a change has occurred when in fact the communities have become more sensitive, as a consequence of the discussion.

Questions regarding existing airspace policy should be directed to the CAA.

Questions Relating To Impacts

5.7 **Have you considered the impact on my house/school or other location?**

The proposed design is in line with Government and CAA Guidance on airspace change (refs 1, 2 and 3). The objective of RNAV replication is to simply reproduce the existing conventional routes using the more accurate modern navigation technology of RNAV (see ref 3). As such, unlike most airspace changes which involve the design of new routes, with RNAV replication there is no capacity for varying the position of a route to avoid a location which is currently overflown by the existing route.

⁵ The consultation document provides more background on the use of runways and their naming conventions. It is assumed that the reader is familiar with the consultation material.

5.8 Will it mean more flights overhead?

This consultation is about how to modernise the existing routes to improve the overall operational and environmental performance of the airspace. The consultation is not about increasing the number of flights (see Para 5.18). The change from conventional navigation to RNAV will not influence the number of aircraft flying to/from London City Airport.

5.9 Will more people be overflowed?

No. By replicating the existing routes, the same areas/people will be overflowed. Over time due to the increasing proportion of RNAV equipped aircraft there will be a small degree of concentration of the traffic along the route centre-line. This will result in fewer people being directly over-flown, but we expect the change to have only a marginal impact on people's experience of noise (see para 4.24 onwards).

5.10 We have heard that the changes will result in a constant stream of aircraft flying overhead at intervals of one every 80 seconds, how can this be justified?

This statistic has been published by some newspapers but has no basis in fact. The minimum departure separation allowed is 2 minutes or 5nm between each successive flight. A maximum movement rate of 40 movements per hour is possible but this relates to 20 arrivals and 20 departures i.e. on one route an average of one flight every 3 minutes. Also beyond a certain point the traffic disperses in different directions. Please refer to the consultation document Section 5.4.1 to 5.4.8 which gives figures for the average number of flights using each route per day, and the number of days per year that each route is used. Note this proposal has nothing to do with increasing traffic levels at London City Airport (see para 5.18).

5.11 Will you be compensating those that would get more traffic as a result of your proposals?

The existing noise insulation schemes for London City Airport will remain in place for those affected by a high level of noise. This proposal does not affect the boundaries of those areas. Neither the CAA nor Government guidance require any additional compensation for either existing or changed noise impacts (Refs 1 and 2).

Airspace Change/Consultation Process Questions

5.12 Who have you consulted? Why aren't you consulting directly with the local communities?

See section 4 Theme 1.

5.13 Why should we believe what you say in your consultation document?

It is in nobody's interest to present incorrect or misleading information in the consultation material. We take our responsibilities very seriously and whenever we present proposed changes we always seek to present the best available information as straightforwardly as we can.

The process for airspace change is regulated by the CAA. As part of this change process we are required to analyse performance after one year of use, and

demonstrate that the change is working as anticipated. If the CAA determines this not to be the case then they may require us to make further changes to rectify the situation which would be costly and time consuming.

5.14 How do I know you have considered my response?

All feedback from this consultation has been given due consideration and reported transparently in this feedback document. The consultation responses and analysis will all be made visible to the CAA as part of our airspace change proposal. The CAA will only approve an airspace change if they have evidence to show that we have followed the correct processes.

Should the consultation exercise highlight any significant and relevant issue that we have not taken into account, then we are duty bound to act on it. We have considered the issues/themes raised by this consultation in Section 4 of this feedback document.

Some stakeholders have suggested that all responses should be published; however, allowing open access to the consultation responses would raise data protection issues. Ultimately, the independence of the CAA as the airspace regulator provides the assurance that due process will be followed.

5.15 Who will check that this proposal does what you say it will?

Should the proposal be approved and implemented, London City Airport will be required to demonstrate to the CAA that the proposals achieve the target objectives. In accordance with the CAA's airspace change guidance (Ref 2), we will provide them with a report on the performance of the changes against the target objectives based on the first 12 months of operation.

Questions Relating To Design Issues

5.16 The guidance puts value on long term stability of the route system, how have you taken this into account when proposing change?

The requirement to consider long term stability is not designed to block all change, but to ensure that changes are not made lightly, and that sufficient justification is always provided.

We accept that long term stability for the route system is important and this proposal has been designed to achieve the required modernisation of our routes through replication as this results in the bare minimum of change to flight patterns.

5.17 Will it be safe?

Yes. Safety is our first priority. The safety of the proposal has been the subject of an extensive safety assessment.

The safety assurance will be independently assessed by the CAA as part of their decision process.

Future Changes

5.18 Is this to do with London City airport expanding by the back door?

No, the proposal is designed to modernise our routes regardless of growth.

The proposed change has no impact on the airport's capacity limit as set out in the planning conditions under which the airport operates. Any alteration to the planning controls would be subject to a separate regulatory process through the planning system.

5.19 Why don't you phase out older, noisier aircraft in favour of more efficient new ones?

Investment by airlines operating from London City Airport has secured a significant reduction in the noise climate. London City Airport are continually liaising with airlines with regard to effective noise management.

Compared to London's other major airports, London City Airport has a relatively small number of flights which are generally smaller, quieter, aircraft types. Questions on the required performance characteristics of aircraft flying in the UK should be directed to the CAA (www.caa.gov.uk).

6 Conclusion and Next Steps

- 6.1 The London City RNAV replication consultation in September-November 2014, aimed to “confirm and attain opinions about the impacts of the proposed change” (ref 2 para 14). The analysis has confirmed our understanding of the general stakeholder concerns of the London City community group. The consultation has highlighted no relevant views/issues that have not already been considered in the development of this proposal.
- 6.2 On the basis of this consultation we will continue to adhere to the generic guidance on replication provided by the CAA (ref 3).
- 6.3 London City Airport will submit a proposal for replication of their existing routes, as laid out in the consultation document (ref section 1.3), to the CAA for their consideration. Subject to CAA approval, this change would be implemented not before December 2015.
- 6.4 In the event that a representative organisation wishes to present new evidence or data to the Director of Airspace Policy, for consideration prior to making his regulatory decision regarding this proposal, the representative organisation must submit, in writing, the information to the following address:

The Director (LCY RNAV Replication ACP)
Safety and Airspace Regulation Group
CAA House
45-59 Kingsway
London WC2B 6TE

Appendix A: References

1. [Guidance to the Civil Aviation Authority on Environmental Objectives Relating to the Exercise of its Air Navigation Functions, DfT, Jan 2014](#)
2. [CAP725 CAA Guidance on the Application of the Airspace Change Process, CAA, March 2007](#)
3. [Civil Aviation Authority, Policy Statement, Guidance On PBN SID Replication For Conventional SID Replacement, August 2013.](#)
4. [Civil Aviation Authority, Future Airspace Strategy for the United Kingdom 2011 to 2030](#)
5. [HM Government – DfT Aviation Policy Framework, Mar 2013](#)
6. [Cabinet Office Code of Practice on Consultation](#)
7. [CAA Aeronautical information Circular Y 092/2014: Introduction Of RNAV1 Mandate At London Airports, 18 December 2014](#)
8. NATS London Airspace Management Programme (LAMP) Phase 1 Feedback report.