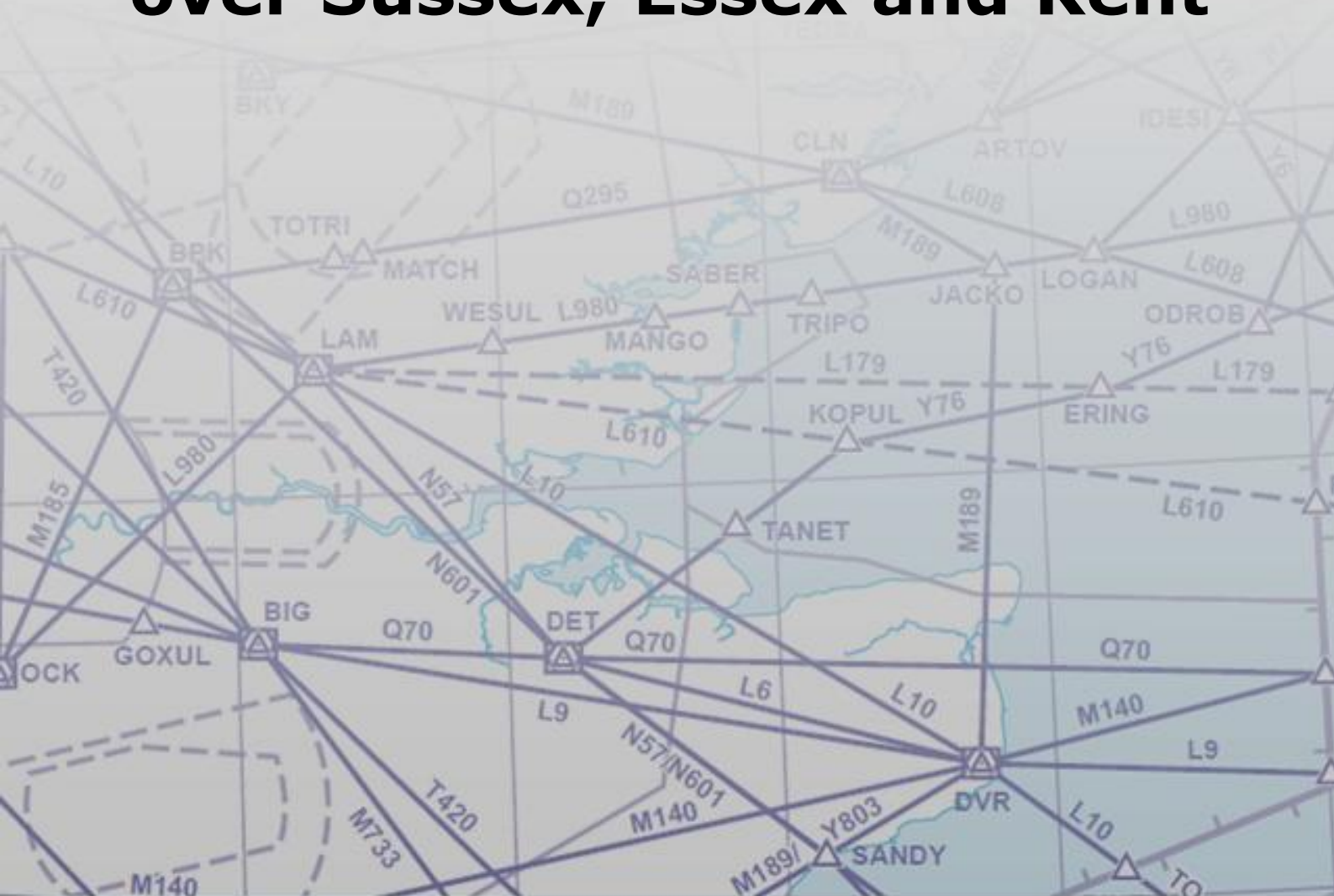


London Airspace Consultation

Design Report Following Consultation Feedback on Route Network (above 4,000ft) over Sussex, Essex and Kent





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1 Introduction

- 1.1 Between October 2013 and January 2014 NATS and Gatwick Airport Limited (GAL) conducted a 12-week consultation on proposed changes to flight paths for Gatwick Airport and London City Airport. This consultation was for the first phase of the London Airspace Management Plan (LAMP) which has scope to modernise the airspace structure over London and the south east of England.
- 1.2 A report detailing the consultation response was published in April 2014; this is referred to herein as the 'Initial Feedback Report' (Ref 1). The initial feedback report can be found at www.londonairspaceconsultation.co.uk
- 1.3 This follow up 'Design Report' details how we have considered that feedback in our development of the design since consultation, and outlines the design that we will submit to the CAA for their assessment.
- 1.4 The original consultation document can also be found on the website above. This feedback document does not repeat the description of the airspace or definition of terms; it is assumed that the reader is familiar with the original consultation material.

2 Gatwick Area Overview

- 2.1 GAL undertook further consultation in Summer 2014 on specific low altitude options for route changes. This focused on the low altitude routes below 4,000ft where accountability for route design rests with the airport. For this reason, it was not a joint exercise with NATS.
- 2.2 Following this consultation GAL decided to postpone low altitude changes in order to undertake more work to better understand their options and next steps.
- 2.3 NATS remains confident that the Gatwick 'point merge' design for arrivals at higher altitudes, described in the joint consultation, would be an improvement in line with CAA/DfT requirements. However, NATS has decided to postpone the Gatwick point merge and associated elements of the route network while the airport undertakes its further work.
- 2.4 Modernisation of the airspace for Gatwick remains a requirement of the CAA's Future Airspace Strategy (FAS) in order to achieve environmental benefits, to comply with European requirements and to ensure that the UK remains competitive in the global aviation market.
- 2.5 NATS will continue to work with GAL as they develop their low altitude proposals to ensure that we have a point merge design that complements the airport's low altitude solutions.
- 2.6 The detail of NATS' proposed network design for Gatwick point merge and associated departure routes is partly dependent on the low altitude solutions that GAL develops. As a consequence we are not in a position to finalise and publish our proposed network design until GAL have completed their additional



work and are ready to progress their low altitude designs.. Note that GAL has not declared any timescales for completing this work.

- 2.7 The feedback we received during the joint consultation (October 13-January 14) nonetheless remains valid and will be considered in the network design for Gatwick. Therefore once this additional design work has been completed, NATS and GAL will produce a further feedback report that explains how the consultation response has been taken into account. Stakeholders who responded to the joint consultation (October 13-January 14) will be notified when detailed feedback regarding any changes in the vicinity of Gatwick Airport is published.
- 2.8 NATS intends to proceed with a proposed change to one Gatwick arrival route that crosses Kent at higher levels. This route needs to be changed because it interacts with proposed London City Airport arrival routes over the Thames Estuary. This change does not affect route structures near Gatwick Airport, or any part of the route below 7,000ft. This change is described in Paragraph 5.53.

3 London City and Biggin Hill Overview

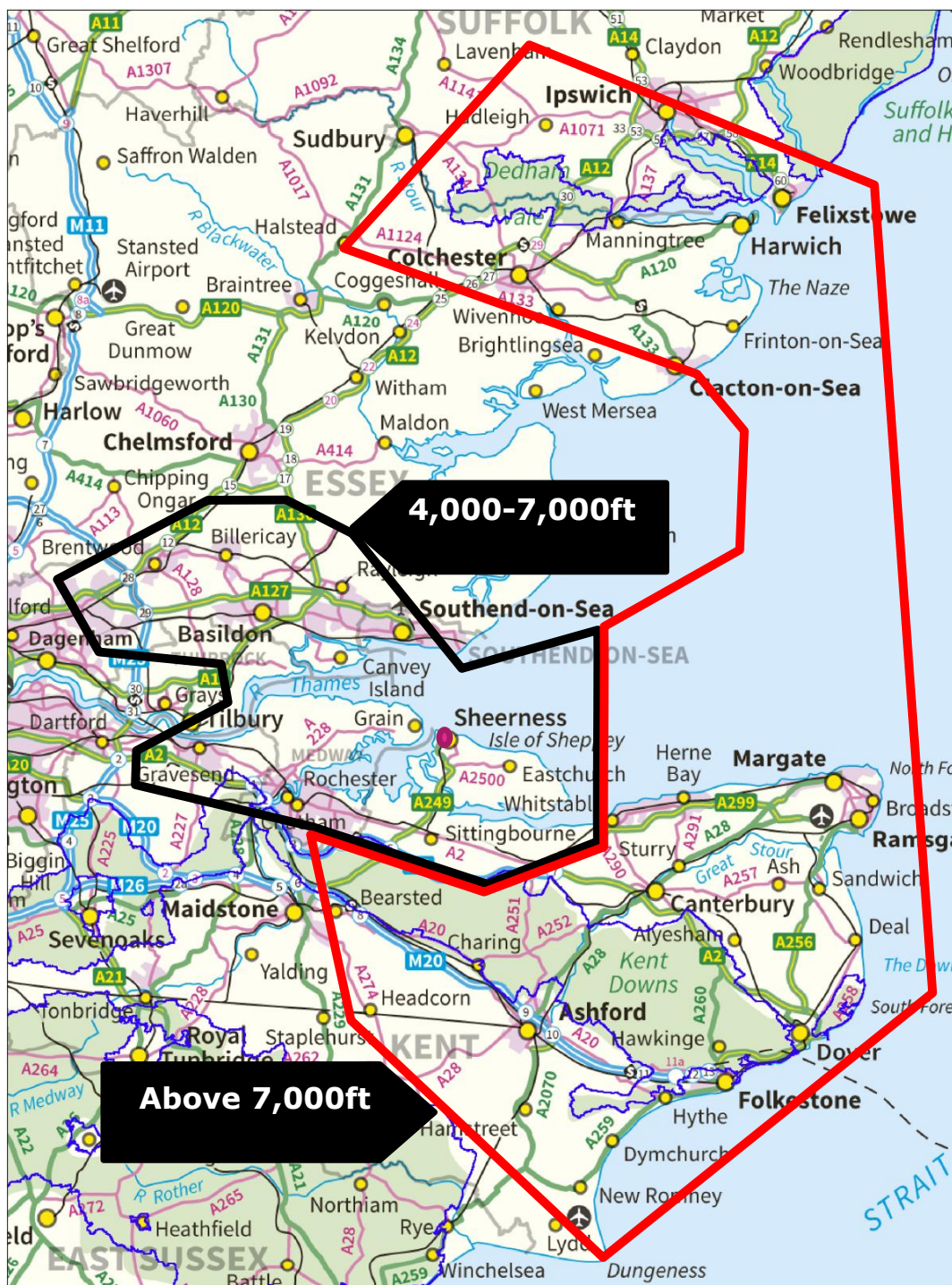
- 3.1 The NATS consultation on routes for London City and Biggin Hill airports focused on new route structures above 4,000ft in the areas shown in Figure 1 overleaf. The proposed alignment of the routes within these areas is discussed in Section 5.
- 3.2 Below 4,000ft the London City and Biggin Hill route structures are not required to change in terms of route alignments, but require modernisation as they are based on outdated navigation technology. This means raising them to modern 'RNAV' standards as described in the consultation material (Ref 2); this is required under a mandate notified by the Civil Aviation Authority (CAA) in December 2014 (Ref 9).
- 3.3 Modernising routes whilst not changing their alignment is achieved through a process called 'replication'. London City Airport has completed a separate consultation on their route replications which covers the area around the airport (west of the black area shown in in Figure 1). The results of the London City Airport consultation are published in a separate report (Ref 3).

4 Consultation Objective and Analysis Process

- 4.1 When we propose changes to airspace arrangements we take into account Government and CAA guidance (found in Refs 4 & 5 respectively). These highlight a number of factors that must be considered and balanced in the development of a proposal, ranging from safety and delay management, to CO₂ efficiency and noise mitigation.

The CAA process for airspace change (Ref 5) states that consultation is about 'confirming and attaining opinions about the impacts of a proposed change'. To that end the Initial Feedback Report describes the issues raised, and this Design Response Report describes how key issues have been considered. There were

also a number of questions raised in the consultation response – these are covered in Section 6.



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Figure 1: Geographic Extent of Proposed Route Network Changes for London City & Biggin Hill Airports

4.2 It is important to note that the CAA has indicated that the aim of the airspace consultation process is not to gauge the popularity of a proposal *per se*; it is not a voting process, but 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 4 & 5). All relevant issues are therefore considered equally, whether they are raised by a single respondent or a majority.

5 The Proposed Route System and Options Considered

- 5.1 This section describes the individual elements of the route structure in turn and describes our rationale for the positioning of each. However, the individual routes are part of a wider air traffic control system. In terms of operational efficiency, the benefit to the system as a whole is more than the sum of the benefits from the individual components. This section therefore begins by outlining the overall benefit that we expect from this proposal, before considering the details of the specific routes we are proposing to change.

Overall Fuel and CO₂ Benefits of the Proposal

- 5.2 Overall we expect the proposals covered in this document to reduce the fuel requirement by over 10,000 tonnes per year by 2020. This benefit would be shared between the London City and Gatwick flights flying the routes discussed in this document.
- 5.3 The proposal is also part of a wider programme of changes referred to as Phase 1 of the LAMP. This also includes some changes to routes at Stansted (see Ref 6), some changes over the South Coast (see Ref 7), and some high altitude route changes for Luton Airport where they cross the Thames Estuary. The combined reduction in the fuel requirement for LAMP Phase 1 is 18,000 tonnes per year by 2020. We estimate that this would relate to an actual CO₂ saving in the range 23,000 tonnes – 46,000 tonnes p/a by 2020¹.

Minimise Future Delay

- 5.4 The system would also improve operational efficiency, helping minimise future delays for the travelling public. NATS' excellent performance in managing flight delay is due to continuous improvement in the efficiency of the UK's airspace through changes such as this.
- 5.5 Testing has shown that the improved system efficiency delivered by this proposal would accommodate forecast air traffic growth on the relevant routes to 2020 without significant delay. Without such changes, delays would increase rapidly as traffic grows. We do not wait for the system to become inefficient before acting.

Enhanced Safety

- 5.6 Safety is NATS' first priority; new technology can offer opportunities to enhance safety further. In particular the modern navigation standards on which this proposal is based would increase the predictability, and in turn

¹ The fuel requirement is the trip fuel that airlines will plan for. In practice not all of this fuel is spent because aircraft rarely follow their planned route for the complete journey; air traffic control often provide more direct routes when the traffic situation allows. This is difficult to predict and model with certainty; however we have taken it into account both by reducing our claimed CO₂ benefit, and presenting it as a range to represent the uncertainty.

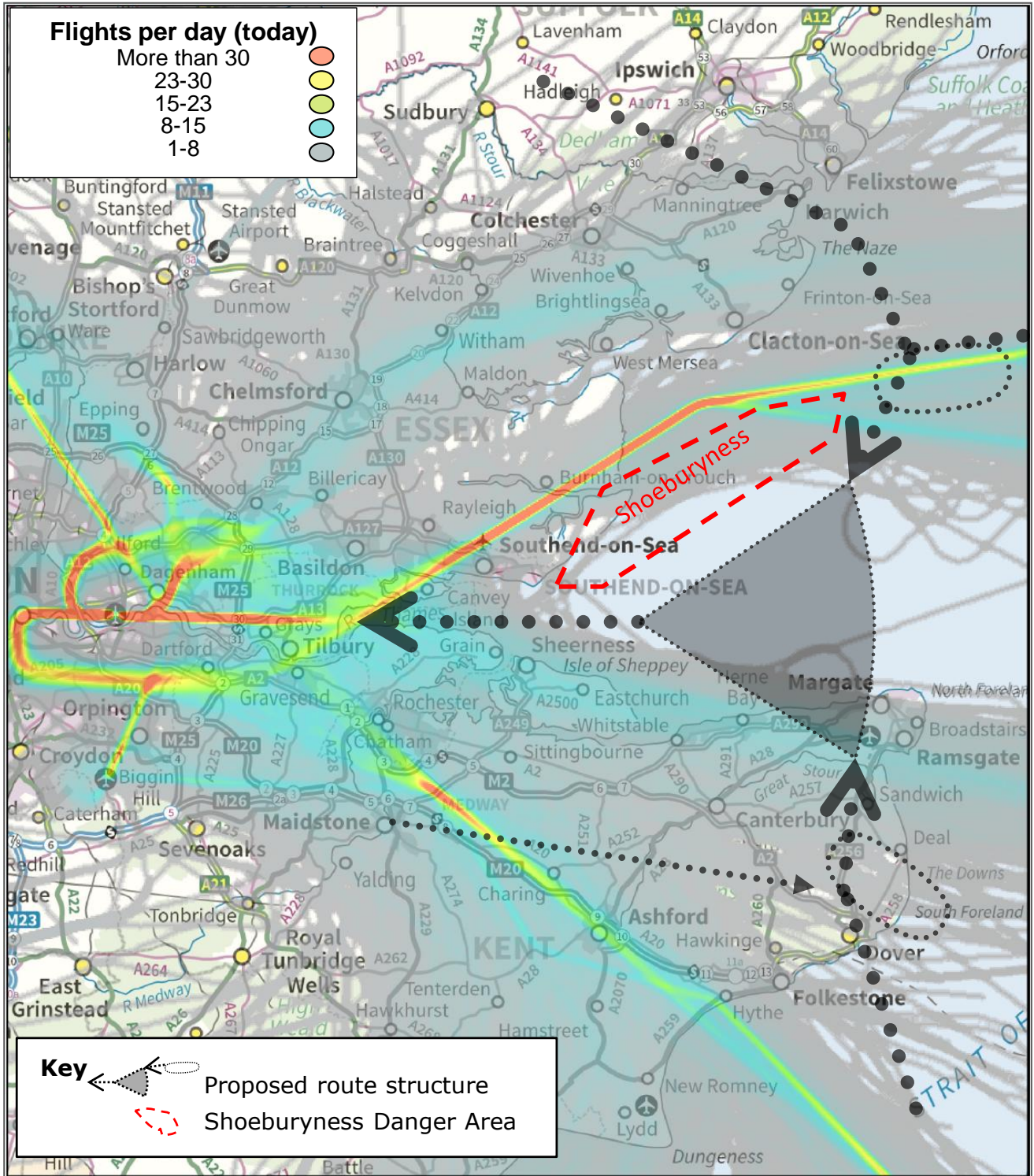
reduce the complexity, of the air traffic control system. It is generally accepted that reducing complexity enhances the overall safety of the system.

Rationales for Positioning Individual Route Segments

- 5.7 At the heart of this proposal lies the proposed 'point merge' system for London City and Biggin Hill arrivals. All the other changes discussed in this document are required because of their interaction with the point merge system.
- 5.8 This section describes each set of routes in turn:
- the London City/Biggin Hill point merge system,
 - the routes taking London City and Biggin Hill traffic out of the point merge system
 - the routes feeding London City and Biggin Hill traffic into the point merge system
 - the London City departure routes that cross the point merge system to send traffic south
 - Gatwick arrivals from the east that need to be realigned to avoid the point merge system over the Thames Estuary
 - Southend arrivals from the south and east that need to be realigned to avoid the point merge system over the Thames Estuary
- 5.9 The consultation presented wide swathes for positioning the routes above 4,000ft associated with this proposal, making clear that the final route could be anywhere within the relevant swathe. NATS has considered a range of factors in determining where to position the routes within these swathes; these include operational factors, the generic guidance on airspace change (Refs 4 and 5) and feedback received through consultation.
- 5.10 This section describes how we have taken these factors into account when finalising the proposed alignment for each of the routes in question.
- 5.11 There are times when it is appropriate for aircraft to deviate from the prescribed route, for reasons of safety or efficiency. Therefore while flights would be more concentrated around the routes presented in this document, they would still occasionally be seen over any part of the swathes presented in the consultation document (Ref 2).

Position of the London City/Biggin Hill Point Merge System

- 5.12 Part F of the consultation document (Ref 2) describes how we propose a fundamental change to the way in which we manage arrivals for London City Airport –referred to as 'point merge' which is described in the consultation document Arrivals that currently fly inefficiently at low altitudes over parts of east London, Essex and Kent would instead be positioned in an orderly stream coming in over the Thames Estuary. This would keep the arrivals higher for longer, and minimise the time spent overflying populated areas at low altitudes. It would also be more operationally efficient and enhance the safety of the air traffic system.
- 5.13 The proposed point merge system is shown in Figure 2 overlaid on today's flight patterns, which are shown as the colour coded shading.



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Figure 2: Proposed Network Route System for London City and Biggin Hill Arrivals Overlaid on Today's London City and Biggin Hill Flight Paths

- 5.14 Feedback from the consultation suggested that all routes should be over the sea where possible, and we have taken that into account fitting the point merge arc over the Thames Estuary. Its position is, however constrained by the Shoeburyness Military Danger area extending from the coastline east of Southend on Sea (shown as the red dotted lines in Figure 2). This area is required by the Ministry of Defence for testing ordnance – in their feedback the MoD has indicated it cannot be moved because the particular local conditions are suited to their test firing requirements.
- 5.15 This means that the proposed point merge structure (and the route that adjoins it from the south) does extend over the Kent coast; this is unavoidable if we are to provide a sufficiently long arc on the point merge structure (the arc being the eastern edge of the wedge). Aircraft fly along this arc when they need to be delayed; the shorter the arc the less delay it can accommodate.
- 5.16 Aircraft on this route and the arc would be at 9,000ft – well above the 7,000ft threshold in the Government guidance above which changes are deemed to have no significant local impact.
- 5.17 The point merge system has contingency holding points for times when aircraft need to be delayed for longer than it takes to fly the point merge arc. These are a contingency measure, for use in particularly busy periods or when there is bad weather or technical issues affecting the airport.
- 5.18 There is one hold to the north of the point merge arc and another to the south. The hold to the south is positioned over the Kent coast in the vicinity of Dover. Aircraft using this hold would circle at 10,000ft or above; this is compared to today's practice of absorbing delay by extending flight paths at 3,000-4,000ft over East London and neighbouring parts of Essex and Kent.
- 5.19 The southern hold cannot be positioned further west over the sea for two reasons:
1. Moving the hold further south or west would push it closer to a large French/Belgian military flying zone that lies along the edge of French airspace mid-way across the English Channel. While the hold itself could fit in UK airspace to the north of French airspace, its safety zone could not and it is therefore not a viable option.
 2. Moving the hold to the northwest would enable the safety zone to stay within UK airspace, but would also require all the traffic from the south and west to fly extra miles, generating extra CO₂. Government guidance for airspace change (Ref 4) states that for routes above 7,000ft, CO₂ efficiency should take priority over potential local impact, and this is therefore not a viable option.
- 5.20 The hold for aircraft coming from the east and north has already been designed to be wholly over the sea.

London City and Biggin Hill Arrival Route Down to 4,000ft

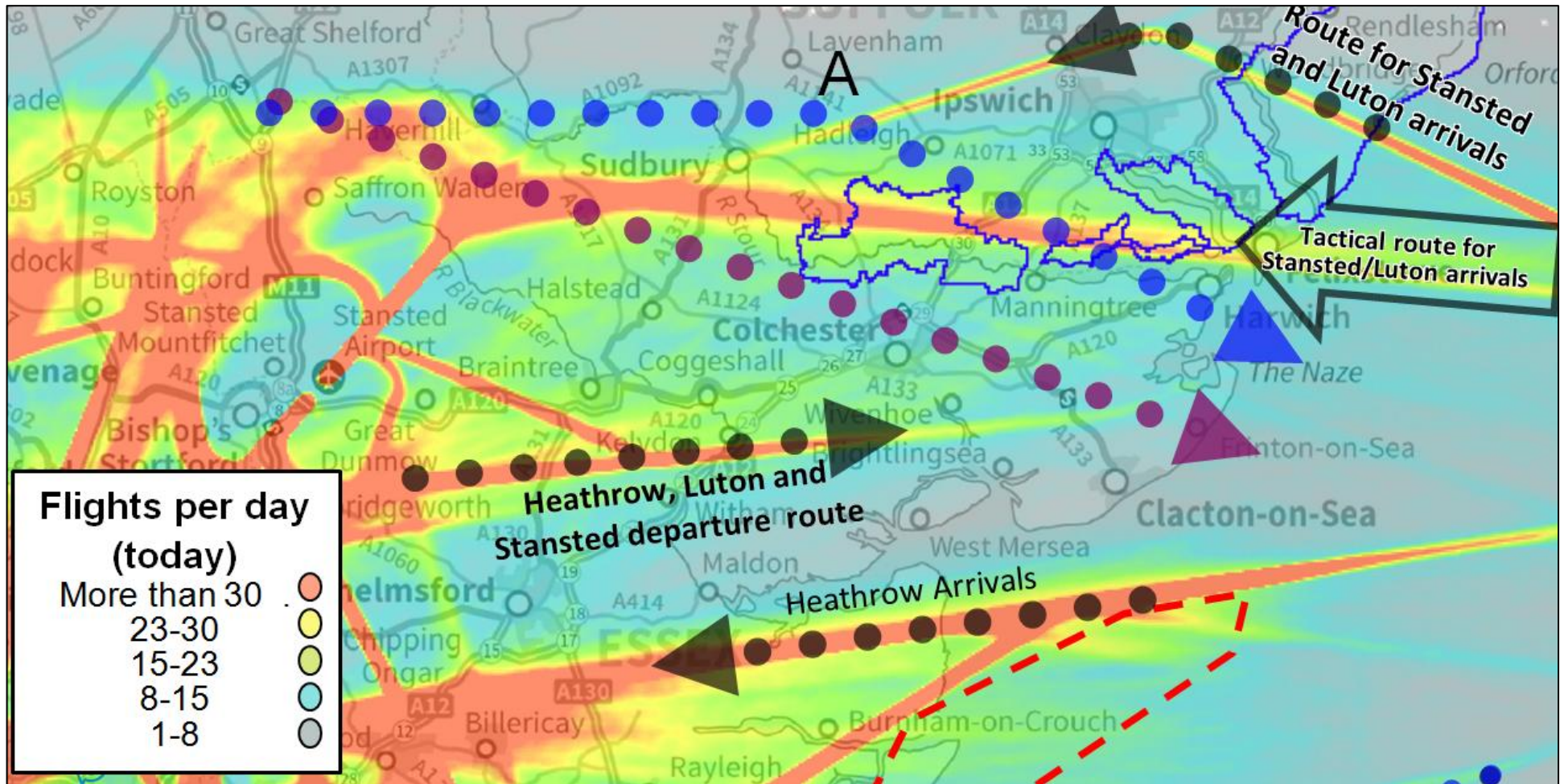
- 5.21 A route is required from the western end of the point merge 'wedge' to take aircraft down towards London City Airport. The point merge system has been positioned so that this route is aligned with the runway at London City as shown in Figure 2. This is both operationally efficient as aircraft are heading straight from the point merge towards the airport, and also ensures that the flights remain over water for as long as possible. The proposed route is shown by the dotted arrow pointing west from the point merge 'wedge'. The route for Biggin Hill arrivals would follow the same path down to 4,000ft. Note that modernisation of the traffic flows at lower altitudes in the vicinity of London City Airport is covered in their consultation (Ref 3).

London City and Biggin Hill High Altitude Arrival route over Sussex

- 5.22 London City arrivals from the north/northwest generally descend towards the airport over Hertfordshire and Essex. Flights on this route are descending towards 3,000-4,000ft where they are often required to fly extended tracks over parts of East London, Essex and Kent in order to wait for a landing slot. This is inefficient from both an operational and environmental perspective. For more details see the consultation document (Ref 2).
- 5.23 In order to join the point merge structure the route for arrivals from the north/northwest has to fly around the Shoeburyness Danger area. This means crossing North Essex/South Sussex in the vicinity of Dedham Vale and the Stour and Orwell Estuary AONBs. Minimising additional overflight of the AONB has been highlighted as a local priority. Specifically, local councils indicated that their choice would be to direct the route south of Dedham Vale, flying closer to Colchester in preference to overflying the AONB.
- 5.24 Since the consultation NATS has undertaken detailed design work considering both the operational and environmental factors that influence the route positioning.
- 5.25 Operationally, the position of new air traffic control routes has to be assessed for two generic modes of operation, referred to as procedural and tactical. The procedural operation is where aircraft are left to fly routes relatively autonomously, with air traffic control issuing few instructions. In this mode of operation aircraft are concentrated on the published routes.
- 5.26 In practice air traffic controllers often intervene to ensure that the system runs as efficiently as possible. This results in a tactical mode of operation where aircraft are given instructions that take them off the routes, resulting in flight paths that are spread around the published route.
- 5.27 NATS undertakes assessments to ensure that procedural routes are sufficiently separated, and that tactical operations can be safely managed by air traffic controllers.
- 5.28 Figure 3 shows the existing air traffic patterns in this area including major flows into and out of Stansted Airport. Relevant procedural routes are highlighted by the dotted lines. In general, the existing flight paths are shown to be most dense around the procedural routes (shown by the red colouring).

- 5.29 Figure 3 also shows the tactical flight patterns, this is primarily depicted by the blue/green colouring that covers most of the background. The exception is the yellow/red flow of Stansted and Luton arrivals that fly almost due west over Felixstowe and the Dedham Vale area. These flights are not on a procedural route; they fly this way on instruction from air traffic control as it is more efficient than the longer, procedural route, which is shown in Figure 3 flying to the north of Ipswich before turning southwest.
- 5.30 Since consultation NATS has assessed various design options in a computer based, virtual airspace system referred to as a 'real time simulation'. The real time simulation tests how air traffic control would use the proposed routes in practice, in the context of the other traffic flows in the area.
- 5.31 The design and simulation work considered two generic options for positioning the route for procedural operation that would best avoid the AONBs; one to the south of Dedham Vale (shown by the purple dotted arrow on Figure 3) and one to the North (shown in blue). The London City arrivals through this area on this route would typically be at 12,000ft and very occasionally a minimum of 9,000ft.
- 5.32 The purple dotted arrow is the most direct and fuel/CO₂ efficient route. It also meets the local council criterion of keeping south of Dedham Vale. However, the simulation showed that this alignment would bring the route for the London City arrivals close to the heavily used Heathrow, Luton and Stansted departure routes that exist to the south (shown in Figure 3) and potentially at similar levels.
- 5.33 This is an issue because the London City arrivals are descending through 12,000ft while the departures on the adjacent route are climbing through the same level.
- 5.34 In practice, most departures would have climbed through 12,000ft well before passing south of Dedham Vale; however, for obvious safety reasons the route separation assessment must ensure that this crossover can happen for even the slowest climbing departures, in all conditions.
- 5.35 The route structure must ensure that the procedural routes are kept sufficiently far apart until the departures have climbed enough for the London City arrival to pass safely underneath. Therefore as a result of the safety assessment the purple option shown in Figure 3 was rejected.
- 5.36 The blue dotted arrow shows an option that tracks north of Dedham Vale AONB keeping the London City/Biggin Hill arrival route sufficiently separated from the departure routes. This option avoids Dedham Vale itself but must cross the Stour and Orwell AONB, so we have designed it so that it is directly overhead the AONB for a minimal period of its flight. This is the option that we are including in our proposal for the procedural route.

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Figure 3: Options for London City and Biggin Arrivals (typically 12,000ft) over Sussex, overlaying today's traffic patterns (all airports)

- 5.37 The real time simulation suggested that the complex interaction of arrival and departure routes in this area would mean that, in practice, many London City flights would be controlled tactically and given heading instructions to ensure separation from the departure routes to the south and the Stansted and Luton arrivals from the east.
- 5.38 In turn this means that while there would be some concentration on the procedural route (the blue dotted arrow), the London City flights would tend to be tactically spread across a range of tracks. The most southerly would be similar to the pink dotted track shown in Figure 3. The northerly extent would be the blue dotted line, turning to the south east at or shortly after passing the position marked A on Figure 3.
- 5.39 As a result of the new route there would be an average of two additional flights per hour in the region (either on the blue route or tactically positioned in the airspace around it). These aircraft would typically be at 12,000ft and would be of the types in operation at London City. These are generally smaller (and therefore generally quieter) compared to the Stansted and Luton arrivals that cross the area from east to west.
- 5.40 The real time simulation also indicated that these additional flights are likely to be offset by fewer Stansted and Luton arrivals flying directly over Dedham Vale. This is because Stansted and Luton arrivals are less likely to be given the tactical instruction that sends them along the length of Dedham Vale *if* there is a London City arrival crossing at the same time in the other direction.

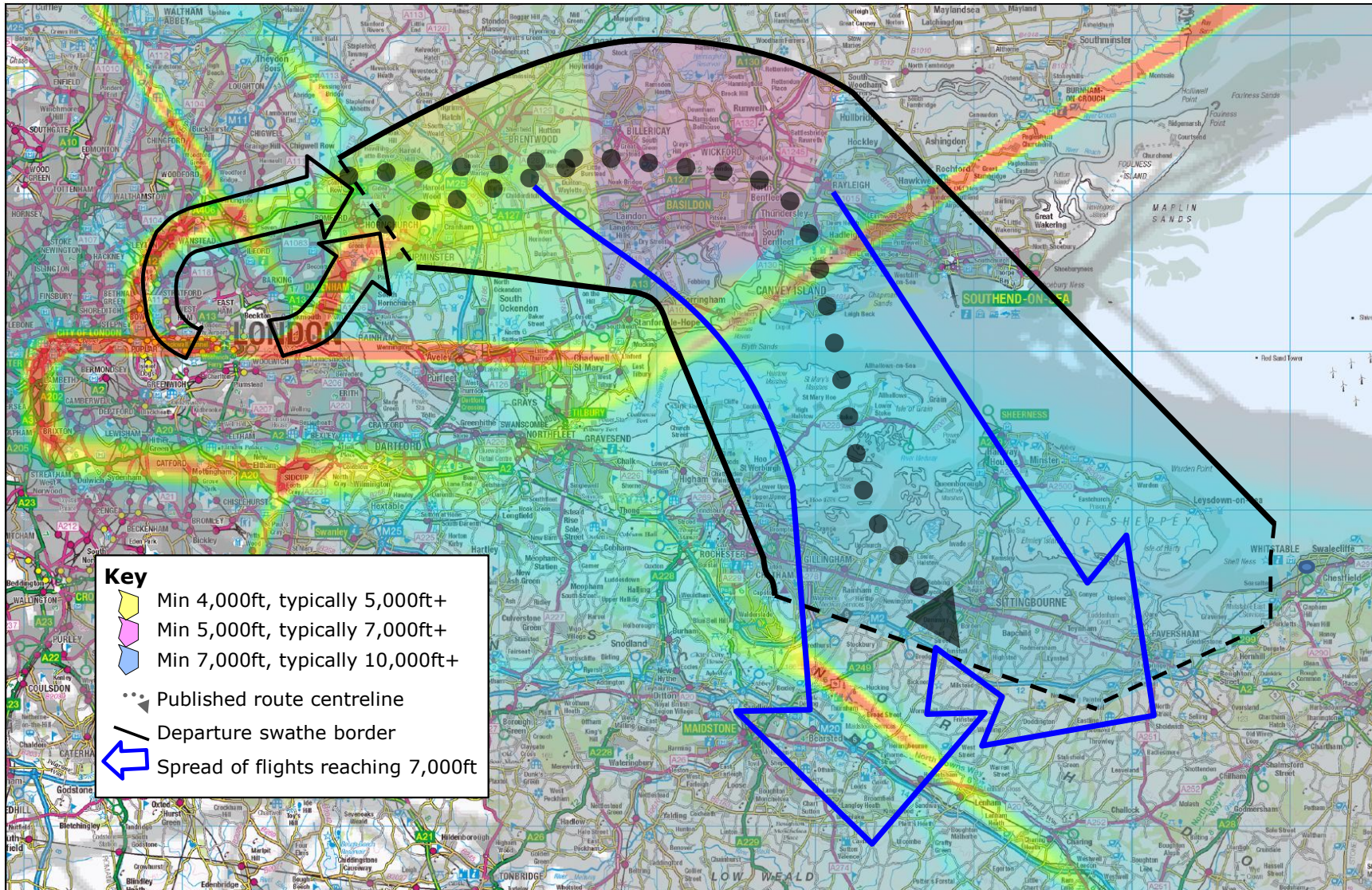
London City and Biggin Hill Arrival High Altitude Routes over Kent

- 5.41 London City arrivals from the south currently follow a track that passes Folkestone, Ashford and Maidstone, roughly tracking the south western boundary of the Kent Downs AONB. Flights on this route are descending towards 3,000-4,000ft where they are often required to fly extended tracks in order to wait for a landing slot. For more details see the consultation document (Ref 2).
- 5.42 Flights on the proposed route would be much higher over Kent, typically at 12,000ft and always above 10,000ft. Arrivals from the south would make landfall in the vicinity of Dover and head to the point merge system via the hold (para 5.18). Arrivals on the lesser used route from the west would follow a track from the Maidstone area to join the main flow from the south near Dover, also typically at 12,000ft.
- 5.43 As a result of the changes the Kent Downs AONB and the towns along its fringe should experience a reduction in lower altitude overflights.
- 5.44 Aircraft may occasionally be given direct routes by air traffic controllers, similar to those used today – this is more likely for Biggin Hill arrivals.

London City Departure Routes

- 5.45 The NATS consultation included changes above 4,000ft on the London City Airport departure routes to the south and south east that exit UK airspace via Kent. The proposal would not change Biggin Hill departures.
- 5.46 Because of the proximity of Heathrow, London City departures to the south and south east initially turn north on take-off. They then turn east to cross the M25 in the vicinity of Junctions 28 and 29. From here they turn towards the south east in a broad swathe.
- 5.47 Today, these departures are generally held at low altitudes, below 7,000ft, until they have crossed the Thames estuary. This is because they are beneath a stream of Stansted departures also heading south east.
- 5.48 As a separate part of LAMP Phase 1 we are removing this Stansted traffic flow so that instead of passing over the London City arrivals and over the Thames Estuary, they would fly east and turn south much later (see Ref 6). This would allow the London City departures to climb higher whilst over Essex. This earlier climb is not only good for reducing local impact, it is also vital to enable them to climb to at least 7,000ft so they can cross the point merge system for arrivals descending along the Thames Estuary.
- 5.49 In order to ensure that all flights have time to make 7,000ft before making the turn south, the new route would have to track further east than today. The new track is shown as the black dotted arrow in Figure 4.
- 5.50 The route overflies the southern edge of Brentwood; an alignment further south was not possible because the eastbound segment cannot be positioned pointing towards the arrivals descending along the estuary, as shown in Figure 2.
- 5.51 On passing Brentwood, the route has been positioned to best avoid direct overflight of populated areas, ie south of Billericay and Wickford, north of Basildon and west of Rayleigh. All flights would be above 7,000ft by the turn south over Canvey Island.
- 5.52 This new route is designed to ensure the system is safe for the slowest climbing aircraft. In reality, most aircraft would reach 7,000ft earlier, at which point they may be turned south east. This would result in a broad swathe, much as seen today, albeit higher and shifted slightly to the east. This is illustrated by the blue arrows in Figure 4.

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Figure 4: Proposed London City Departures to the South above 4,000ft, overlaying today's London City and Biggin Hill flight paths

Gatwick Arrivals Route over Kent

- 5.53 Gatwick arrivals from the east currently follow a route that brings them from the Thames Estuary towards Maidstone, from where they turn south to join the existing Gatwick hold at 7,000ft. This track is shown in blue in Figure 5.
- 5.54 This route would be too close to the proposed route structure for the London City and Biggin Hill arrivals described earlier, and so the proposal seeks to realign this Gatwick arrival route so that it turns away from the point merge structure at an earlier point. This also means the route is more direct and can stay higher for longer making it more fuel efficient. Figure 5 shows the proposed alignment of the new Gatwick arrival route compared to today's route, and also all of today's traffic flows for context. Aircraft on the proposed route would typically be around 13,000ft, descending to 7,000ft by the hold.

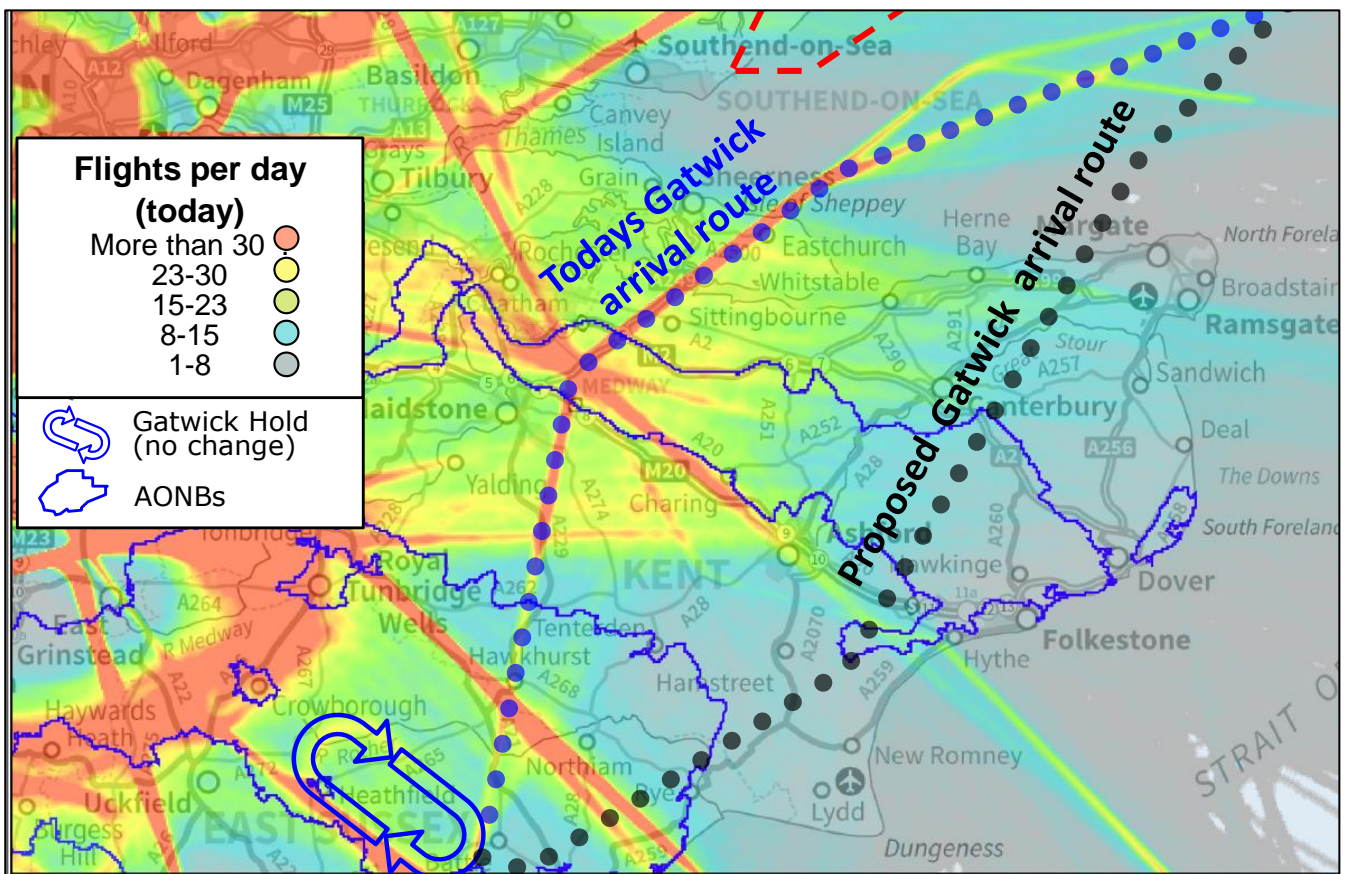


Figure 5: Proposed Gatwick arrivals (typically 13,000ft) over East and South Kent, overlaying today's flight paths (all airports)

Southend arrivals over the North Sea

- 5.55 Southend arrivals from the south currently approach the airport on the west side of the Shoeburyness danger area, descending over Kent. Under this proposal the Southend arrivals would instead descend over the sea to the east of the Shoeburyness danger area. Changes to flight paths overland in the vicinity of Southend Airport are the responsibility of the airport (see Ref 8).

6 Design Considerations

An aim of consultation is to identify whether there are relevant issues that we have not considered sufficiently in developing our proposal.

This section lists considerations raised by stakeholders, either generically or with reference to a specific area, and outlines how they have been considered in the development of the proposal.

6.1 Routes should be over the sea as much as possible

We have endeavoured to put routes below 7,000ft over the sea where possible (see previous section). We have also considered this for higher altitude routes, however, the Government priority for routes above 7,000ft is to ensure fuel/CO₂ efficiency (Ref 4) which usually means prioritising a direct flight path over one which goes further in order to fly over the sea.

6.2 Put flights over towns instead of the countryside which has less ambient noise

Avoiding populated areas is in line with Government guidance and national policy (Ref 4) and this has been a priority for routes below 7,000ft.

Above 7,000ft the priority for route design is to ensure fuel/CO₂ efficiency which usually means prioritising a direct flight path rather than one avoiding either towns or countryside. However, we have factored stakeholder responses regarding AONBs into our design process (see previous section).

6.3 You should introduce respite routes

We consider respite routes to be an option for managing significant changes to noise impact, notably for heavily flown routes at low altitudes. Our proposal does not affect flights below 4,000ft and is focused on routes for London City and Biggin Hill airports which, compared to London's larger airports have relatively small numbers of flights. Furthermore these are generally smaller, quiet, aircraft types². We do not consider respite routes to be practical or necessary in these circumstances.

6.4 Avoid flying over my town/village/school/hospital etc...

The consultation document described how this proposal would reduce the need for London City arrivals to fly extended tracks over populated areas of East London and neighbouring parts of Kent and Essex. Our proposal would keep arriving aircraft higher for longer, enable departures to climb earlier, and we have endeavoured to put lower altitude routes over the sea (see previous section).

The result is that the changes would mean less low altitude overflight of sensitive areas than is experienced today.

² The relatively short length of the London City airport runway limits the size/types of aircraft that are able to operate there.

7 Questions and Concerns Raised, and NATS' Response

This section presents the questions and concerns raised through the consultation, and our response. This section focuses on those issues relevant to the London City/Biggin Hill part of the proposal affecting East London, Sussex, Essex and north and west Kent. Specific Gatwick area considerations are not covered (see section 2).

General Questions

7.1 Why are you doing this consultation?

Full details of the proposal are provided in the consultation material which remains available at Ref 2.

7.2 Why are you doing this now?

This consultation is part of the first phase of the London Airspace Management Programme (LAMP) to deliver 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. This proposal would improve the efficiency and overall environmental performance of the airspace primarily associated with London City Airport, and also the wider system of routes over East London and parts of Sussex, Essex and Kent. We are seeking to realise both the local and wider benefits as early as possible.

Location-Specific Questions

7.3 Will this proposal mean more flights over East London, Sussex, Essex and/or Kent?

The proposal does not affect the number of flights, but would provide a more efficient method of handling them.

The proposal would mean that a greater proportion of all arrivals would be over the sea for the lower altitude part of their flight, and departures would climb to higher altitudes more quickly than is possible in today's airspace. Therefore while there would be no effect on flight numbers we believe potential local impact would be less than it is today.

7.4 Will this proposal mean more flights over Dedham Vale?

The previous section describes how an arrival route would mean approximately two additional London city arrivals per hour flying over or near Dedham Vale. These aircraft would typically be at 12,000ft and generally be smaller/quieter aircraft types than the Stansted and Luton arrivals that currently overfly the area.

It is likely that the presence of these additional flights would mean fewer Stansted and Luton flights would be allocated the flight path that descends them to 7,000ft along the length of Dedham Vale, and so the additional London City flights would be offset to a degree by fewer Stansted and Luton arrivals (see paragraph 5.22 to 5.40 for details).

Questions Relating to Impacts

7.5 **Have you considered the impact on my house/village/town/school or other location?**

The proposed design is in line with Government and CAA Guidance on airspace change (Refs 4 and 5). This guidance outlines the environmental impacts that must be considered in the design of airspace. The previous section describes how we have taken local factors into account in the design.

7.6 **Will more people be overflowed?**

No. The consultation explains how most of the South East is already overflowed. This proposal would not change that but would mean that some flights would be higher than they are today, and some flights would spend longer flying over the sea than they do today.

7.7 **Why don't you stop the number of flights from growing?**

NATS' responsibility is to manage flights safely and efficiently. We are not responsible for determining the number of flights.

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

Neither the CAA nor Government guidance (Refs 4 and 5) require any form of compensation for areas beneath routes for aircraft above 4,000ft. This is equally the case for either existing or changed noise impacts.

7.9 **Why should some communities suffer with more traffic for air route benefits that add to profits for airports and NATS?**

Our view is that the proposal provides an overall benefit both environmentally and operationally. It is important to note that the increase in over-flights for some areas is offset by a reduction for others. There are also wider benefits in terms of reduced CO₂ per flight (see Section 5).

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

No - there have been no changes already implemented as part of this proposal.

NATS, like any other airspace change sponsor, is required to follow the airspace change process documented in the CAA's airspace change guidance (Ref 5), 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.

Exceptions to this include trial procedures, designed to test technical airspace design aspects.

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 would 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.

Experience from previous consultations indicates that the consultation process itself often leads people to take more notice of, and become sensitised to, the flights that were already above them. .

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

7.11 **Will this change concentrate flights over specific areas rather than spreading them out?**

Modernising the route structure to utilise today's advanced navigation technology will mean that aircraft follow defined routes more often than they do today. This is in line with Government guidance (Ref 4).

However, it should be noted that aircraft would still often be given instructions by air traffic control that take them off the route for reasons of safety or efficiency. Therefore while there would be some increase in concentration, in many places it may not be noticeable.

7.12 **How has air quality been taken into account in the proposal?**

Government guidance on airspace change states that, due to the effects of mixing and dispersion, emissions from aircraft above 1,000ft are unlikely to have a significant impact on local air quality. This is the case in our proposal - there are no proposed changes affecting flight paths below 1,000ft. For more details see the Government guidance (Ref 4).

7.13 **Can you do a bespoke analysis for my postcode?**

We cannot provide a bespoke analysis for every such request; we endeavour to ensure that the consultation material has sufficient information for people to understand the likely effect on their location.

The consultation document provided information on the scale of potential impact, presented alongside or within the maps, describing:

- The potential number of aircraft that would fly on the route and which may be overhead, subject to the final route position within the consultation swathe
- The altitude of these aircraft
- A measurement of how loud aircraft at that height would sound, at ground level (a metric referred to as L_{max})

This information is still available at Ref 2. Considering this alongside the descriptions of the routes we are taking forward, will allow you to identify the potential impact for your areas of interest.

Airspace Change/Consultation Process Questions

7.14 Who have you consulted?

See the consultation document (Ref 2) for a stakeholder list and the initial feedback report (Ref 1) for details of our outreach and the subsequent publicity of the consultation exercise.

7.15 Why should we believe what you say?

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. Should our proposal be approved and subsequently implemented, 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.

7.16 How do I know you have considered my response?

All feedback from this consultation has been given due consideration and reported transparently in Ref 1 and 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.

We believe that there is a good case for change based on the combined benefits of network efficiency, reduced CO₂ emissions and a reduction in the overland area regularly overflowed by London City flights. We believe that these benefits outweigh the negative impact from increased over-flight at higher altitudes for some areas.

The role of consultation is to make this balance of benefits explicit, and allow those with a local knowledge and outlook to comment. 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 raised by this consultation in Section 5 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.

7.17 Who will check that the development does what you say it will?

Should the proposal be approved and implemented, NATS 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 5), we would 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

7.18 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; nonetheless we believe that the overall package of operational and environmental benefits offered by this proposal provides a compelling case for change.

7.19 Will it be safe? Will air traffic controllers be able to cope with rising traffic levels?

Yes. Safety is our first priority. The proposals are for increased usage of existing departure routes that already meet all the required safety standards. The proposal has been the subject of extensive safety assessment; this includes testing in our real time simulation facility where air traffic controllers can test the proposed airspace as if it were 'live'.

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

Air traffic control procedures mean that if the volume of air traffic rises to a certain level, restrictions are imposed to stop further aircraft entering the congested area until traffic levels have reduced again. This is (in very simple terms) how safe levels of traffic are maintained. These restrictions mean aircraft are held on the ground, which causes delays. NATS has a good record of reducing delays over recent years. The LAMP project is an example of how NATS is being proactive in order to avoid any future increase in delays.

7.20 Are the current flight paths/routes unsafe?

No. See 7.19 above

Future Changes

7.21 Is this to do with expanding London City?

No, the proposal is designed to improve the operational and environmental efficiency of the airspace 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 such alteration to the planning controls would be subject to a separate regulatory process through the planning system.

7.22 You are delaying changes at Gatwick so why don't you delay your changes for London City also?

The changes being developed for Gatwick involve significant route realignments at low altitudes and so constitute a much more complex proposal. As a result of that complexity, Gatwick Airport Limited has decided to undertake additional analysis in order to better understand their options and next steps for the low altitude airspace.



Our proposal for London City is different in scope; in particular it does not involve changing the route alignments at low altitude.

We believe there is a clear case for change based on net benefits for both the environmental and operational performance.

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

NATS is responsible for safe and efficient management of controlled airspace, not for the fleet of aircraft flying in it. Questions on the required performance characteristics of aircraft flying in the UK should be directed to the CAA (www.caa.co.uk).

Compared to London's other major airports, London City Airport has a relatively small number of flights which are generally smaller, quieter, aircraft types.

8 Summary and Next Steps

- 8.1 Our consultation from October 2013 to January 2014 aimed to confirm and attain views on the potential benefits and impacts of proposed changes supporting Gatwick and London City airports.
- 8.2 Gatwick Airport ran a second consultation specifically on their low altitude proposals and subsequently decided to postpone their changes until further design and consultation was undertaken. NATS has therefore also postponed the associated changes to the high altitude network. NATS will respond to the consultation feedback on the network changes when Gatwick Airport has completed its additional low altitude work.
- 8.3 With regards to the areas affected by the proposals for London City flights, the analysis has confirmed our understanding of general stakeholder concerns; Section 5 describes how we have taken these views into account alongside Government guidance and operational constraints.
- 8.4 We recognise that this proposal would increase the impact on some areas as a consequence of increased regularity of over-flights; however, this would be offset by much larger areas that would be overflown less, by the operational benefits, and by enabling CO₂ reduction of up to 46,000 tonnes per year.
- 8.5 The objectives for airspace change set out by the CAA and the Government require us to consider the benefits and impacts as a complete package. We believe that the package of net operational and environmental benefits in this proposal presents a compelling case for change.
- 8.6 NATS will submit a formal proposal to the CAA on 16th February 2015 for their consideration. Subject to CAA approval we aim for implementation in late 2015.
- 8.7 Please note that once the proposal is submitted, further feedback should be provided directly to the CAA. The airspace change guidance provided by the CAA states that in the event that you wish to present new evidence or data, for



consideration prior to them making their decision regarding the proposal, it must be submitted, in writing, to the following address':

Group Director Safety and Airspace Regulatory Group
CAA House
45-59 Kingsway
London
WC2B 6TE

Appendix A: References

1. LAC Initial feedback document, NATS and GAL, March 2014,
www.londonairspaceconsultation.co.uk/?page_id=37
2. LAC Consultation Document, NATS and GAL, October 2013
www.londonairspaceconsultation.co.uk/?page_id=37
3. London City Feedback report, LCAL, February 2015
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4. Department for Transport Guidance to the Civil Aviation Authority on
Environmental Objectives relating to the exercise of its Air Navigation
Functions
DfT, January 2014
5. CAP725 CAA Guidance on the Application of the Airspace Change Process
CAA, March 2007
6. NATS Departure Route Proposal at London Stansted Airport- Consultation
Document, NATS September 2014; www.nats.aero/lampstansted
7. NATS LAMP South Coast Proposal, transferred from TAG Farnborough to NATS
in February 2015;
www.nats.aero/environment/consultations/lamp-south-coast
8. Southend Controlled Airspace proposal, Southend Airport
www.southendairport.com/news/controlled-airspace/
9. AIC Y 092/2014 Introduction of RNAV 1 Mandate at London Airports
CAA, December 2014

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