

# Submission to the House of Commons Transport Committee

## Airspace Management and Modernisation

Stop Stansted Expansion ('SSE') was established in 2002 in response to Government proposals for major expansion at Stansted Airport. We have some 7,500 members and registered online supporters including 150 parish and town councils and local residents' groups and national and local environmental organisations. Our objective is to contain the development of Stansted Airport within tight limits that are truly sustainable and, in this way, to protect the quality of life of residents over wide areas of Cambridgeshire, Essex, Hertfordshire and Suffolk, to preserve our heritage and to protect the natural environment.

Stop Stansted Expansion  
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[www.stopstanstedexpansion.com](http://www.stopstanstedexpansion.com)



## **1. Introduction**

This document is SSE's response to the House of Commons Transport Committee's call for written submissions on Airspace Management and Modernisation and addresses the topics set out in the announcement dated 26 January 2017.

SSE welcomes initiatives to improve the operation of UK airspace which increase the efficiency for users and at the same time reduce the environmental harms and adverse health impacts for people living around airports and under flight paths.

Aircraft are inherently noisy machines and aircraft noise is not only loud; it also has a large low frequency content. Low frequency noise encounters less absorption than higher frequencies as it travels through the air and it persists for longer distances. Additionally, the amount of sound transmitted from the outside to the inside of buildings is greater at lower than at higher frequencies. Furthermore, modern high ratio bypass turbofan engines are characterised by a tonal (whine) feature which increases the likelihood of annoyance.

SSE believes that it is the number of flights coupled with concentration of routes which is the most determining factor of environmental noise harms.

With the present state of aircraft technology, there is in most flight operations, a trade-off between reducing noise and reducing greenhouse gas emissions and nitrogen oxides, all of which are harmful to human health. SSE believes that high priority should be attached to overcoming this dilemma, but in the meantime, while this unenviable trade-off between two health hazards exists, we believe that close to airports and along flight paths up to 7,000 feet, preference should be given to reducing noise, particularly on take-off.

## **2. The role of Government in facilitating improvements to the airspace**

SSE supports the proposal by the Department for Transport ('DfT') that the Secretary of State should have a call-in function for changes to the structure of UK airspace covered by the Civil Aviation Authority ('CAA') formal airspace change process.

The DfT has stated that its '*overall policy on aviation noise [is] to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise, as part of a policy of sharing benefits of noise reduction between industry and communities in support of sustainable development*'.<sup>1</sup>

SSE believes that this overall policy '*to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise*' is weaker environmental protection than intended by the Environmental Noise Directive where it clearly states in its objectives '*...to avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise*'.<sup>2</sup>

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<sup>1</sup> UK Airspace Policy Consultation, January 2017, Executive Summary, para 13.

<sup>2</sup> Directive 2002/49/EC, June 2002, Article 1, Objectives.

SSE wishes to see this overall policy tightened '*to ensure that the harmful effects of aircraft noise disturbance are prevented, avoided or reduced*'. There is growing evidence of the social cost associated with the adverse impacts of aircraft noise, particularly at night. Adverse health effects from noise are well established, particularly poor performance at work from interrupted sleep and impaired cognitive development in primary school children who live near airports. This has a further detrimental impact on the economic value of aviation to the nation.

If a conflict is found to exist between user efficiency gains and environmental gains, priority should be given to delivering environmental gains.

The most important and urgent responsibility for the Secretary of State is to set policy and take the lead for a fundamental overhaul of the assessment criteria for the measurement of aviation noise nuisance including sleep disturbance and health impacts. The current 57dB LAeq 16h averaging metric, based as it is on out of date surveys carried out in the early 1980's, is wholly inadequate in measuring and assessing aviation noise harms. The most significant shortcoming of LAeq 16-hour averaging measurements is that they are very insensitive to the number of aircraft noise events. A doubling of like-for-like aircraft movements increases the LAeq by only 3dB. Barely perceptibly less noisy aircraft would effectively permit many more aircraft movements for the same average sound pressure level LAeq.

The success of the CAA's proposal to improve the Airspace Change Process, DfT's recently established Aviation Noise Engagement Group ('ANEG') and the proposed Independent Commission on Civil Aviation Noise ('ICCAN') will largely depend on establishing a set of noise metrics which are not only more relevant to today's flight operations and people's perception of noise nuisance but which might also obviate the complexity of explaining '57dB LAeq 16h' to local communities.

For far too long one of the root causes of public concern and mistrust has been the reliance on the 57dB LAeq 16h metric and this must be resolved. The Airports Commission has already proposed a set of metrics, 'Noise Scorecard', which include other indices and alternative metrics which are widely available.

In this regard, SSE welcomes DfT's proposal that '*other metrics which measure the frequency and pattern of aircraft [which] communities may be exposed to should also inform decisions and to help communities understand the impact of proposed changes*'.<sup>3</sup>

A further shortcoming of the current method of measuring aircraft noise is the absence of the use of background (or ambient) noise levels as a component in assessing noise harm. Each discrete noise event such as an aircraft movement will be heard against the background noise levels of the particular location at the time. Stansted Airport is situated in rural surroundings with few large towns and a large number of small villages characterised by low ambient noise. This was recognised by the previous Secretary of State for Transport when he said '*...that the value of the LAeq indicator does not necessarily reflect all aspects of the perception of aircraft noise. This may be especially true for rural airports such as Stansted where the ambient or background noise levels are relatively low. We would encourage the Manchester Airport Group, the operator of Stansted airport working alongside the Airport Consultative Committee to consider alternative*

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<sup>3</sup> UK Airspace Policy Consultation, January 2017, Executive Summary, para 13, third bullet point.

*methods which better reflect the airport's position*'.<sup>4</sup> In addition, a recent research study carried out by the Dutch research agency To70 found that: *'The percentage of annoyed residents is likely to be higher in areas with low ambient noise than in high ambient noise areas. It can be misleading to compare noise annoyance between different airports, when these local differences are not taken into account. Hence, the local difference between ambient noise levels should always be taken into account when calculating the annoyance*'.<sup>5</sup>

SSE wishes to see the Government define a more robust framework and methodology for the assessment of aviation noise nuisance and adverse health effects. This should include a suite of noise metrics with quantitative limit values which include, inter alia, the measurement of aircraft noise levels, spectral content, time duration and frequency of occurrence. The new framework should also take full account of the recommendations set down in the WHO Guidelines for Community Noise and have separate values for the 16-hour day and 8-hour night periods. These metrics should, inter alia, include:

- N70 and N60 values for day and night respectively
- Lmax values
- L90 background noise levels

### **3. The need for modernisation, in terms of the economic and environmental sustainability benefits, and the risks for the aviation industry and wider economy from maintaining the current airspace structures**

While SSE supports the need for modernisation in terms of the economic and environmental sustainability benefits, the risks of maintaining the current airspace structures are not clear. It is difficult to reconcile some of the conflicting figures quoted, for instance:

- The DfT claims that *'Aviation creates jobs and supports economic growth. It directly supports around 230,000 jobs with many more employed indirectly and contributes around £20bn annually to UK economy*'.<sup>6</sup> This is highly misleading since those figures include jobs in the aircraft manufacturing and aerospace industries. According to the Office for National Statistics, the total UK employment in aviation air transport in 2015 (excluding manufacture and aerospace) was 125,900. Gross value added (GVA) by the UK aviation industry in 2015 was £7.3 billion which is less than 10% of the GVA for the UK transport sector as a whole.
- Furthermore, any calculation of economic benefits of aviation is suspect unless it takes into account the multi-billion pound UK trade deficit on overseas travel and tourism and the hidden subsidy to airlines as a result of their paying no fuel tax and no VAT, the benefit of which is about four times the revenue from air passenger duty (APD).
- The DfT has stated that: *'Analysis commissioned by the DfT and carried out by NATS (the UK's main provider of air traffic control services) predicts total delays from air traffic*

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<sup>4</sup> Secretary of State for Transport letter of 10 December 2013 to Sir Alan Haselhurst MP.

<sup>5</sup> <http://www.gacc.org.uk/resources/Ambient%20Noise.pdf>.

<sup>6</sup> UK Airspace Policy: A framework for balanced decisions on the design and use of airspace February 2017, Introduction, para 1.3.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/588186/uk-airspace-policy-a-framework-for-balanced-decisions-on-the-design-and-use-of-airspace-web-version.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/588186/uk-airspace-policy-a-framework-for-balanced-decisions-on-the-design-and-use-of-airspace-web-version.pdf).

*management to rise from 78,000 minutes in 2015 to 4.4 million minutes by 2030*.<sup>7</sup> In a similar vein, in January 2017 the Daily Telegraph reported: ‘According to a report by National Air Traffic Services (NATS) passengers in the UK are currently delayed by 90,000 minutes annually. However, NATS claims that figure will rise 44-fold to 4 million minutes – or 2,778 days – by the end of the next decade unless action is taken’.<sup>8</sup>

- The recent DfT *Strategic Rationale* shows that there were 2.25m flights in 2015 and NATS analysis is that ‘... in 2015, a lack of airspace capacity resulted in 78,000 minutes of flight delays (equivalent to 54 days of total delay and an average of 9 minutes per delayed flight...)’ [and] ‘... Looking forward to 2030, the NATS analysis predicts that air traffic delays will increase to 5.6 million minutes a year (3,889 days or an average of 26.5 minutes per delayed flight)’.<sup>9</sup>
- NATS has previously said that ‘in 2012 delays averaged just 1.6 seconds per flight and 99.8 per cent of UK flights did not suffer any NATS air traffic control delay’.<sup>10</sup>

Based on these figures, 78,000 minutes of flight delays actually translates to an average delay of 1.9 seconds per flight and 90,000 minutes delay would be 2.4 seconds per flight. Even a 44-fold increase would be less than 2 minutes per flight in 2030.

The air transport sector contribution to the UK economy is over-inflated and the rationale for reducing delays appears to be over-stated. The second observation is clearly important since it is the prime reason given for modernisation of the airspace.

#### **4. The essential changes that need to be made to UK airspace, particularly those associated with the development of an additional runway in the South East**

No comment.

#### **5. Progress of the Civil Aviation Authority’s Future Airspace Strategy in achieving its core objectives of reducing congestion, improving safety and taking advantage of new technologies to enable a more efficient airspace system**

The CAA’s Future Airspace Strategy (‘FAS’) is welcomed. The FAS 2030 Vision is to establish ‘Safe, efficient airspace, that has the capacity to meet reasonable demand, balances the needs of all users and mitigates the impact of aviation on the environment’.<sup>11</sup> It is therefore important to recognise that the core objectives fundamentally include mitigating the impact of aviation on the environment. In fact the FAS sets out three broad strategic drivers to modernise the UK airspace system to achieve this vision namely; Safety, Capacity and Environment. The FAS is

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<sup>7</sup> UK Airspace Policy: A framework for balanced decisions on the design and use of airspace February 2017, Introduction, para 3.6.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/588186/uk-airspace-policy-a-framework-for-balanced-decisions-on-the-design-and-use-of-airspace-web-version.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/588186/uk-airspace-policy-a-framework-for-balanced-decisions-on-the-design-and-use-of-airspace-web-version.pdf).

<sup>8</sup> Daily Telegraph, Gavin Haines, 26 February 2017 <http://www.telegraph.co.uk/travel/news/expect-more-delays-at-uk-airports-minister-warns/amp/>.

<sup>9</sup> Upgrading UK Airspace: Strategic Rationale 2017, Executive Summary Analysis.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/586871/upgrading-uk-airspace-strategic-rationale.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/586871/upgrading-uk-airspace-strategic-rationale.pdf)

<sup>10</sup> NATS News Release dated 28 January 2013.

<sup>11</sup> Future Airspace Strategy, 30 June 2011, Executive Summary, para ES4.

quite clear on the environmental objective when it states *‘The proposals in the FAS aim to enable aircraft to fly in more environmentally efficient ways. The environmental impact of air travel, both locally in terms of noise and air quality, and globally in terms of climate change, plays an important role in determining how the UK airspace system should develop. The FAS aims to drive the implementation of ATM improvements that reduce greenhouse gas (GHG) emissions from aircraft and contribute to minimising aviation’s environmental impact. The FAS also provides an opportunity to re-assess existing principles underpinning the treatment of aircraft noise and tranquillity in the context of new ATM technologies and operational concepts. Outwith the FAS remit, airports will also have to consider the effect of local issues, such as air quality and noise, as factors which may restrict individual expansion plans in some areas’*.<sup>12</sup>

Progress of the FAS in achieving its core objectives is therefore highly dependent on achieving environmental gains.

The first principle should be to reduce noise nuisance for everyone living near airports and under flight paths and not to expose new people to aircraft noise. The introduction of Performance Based Navigation (‘PBN’) now enables flight trajectories to be accurately tailored to avoid as many people as possible.

SSE believes that it is not so much the absolute aircraft noise impact that matters, but its relative impact, compared to the ambient noise level. Thus, if you live and work next to a busy road or an otherwise noisy environment you will, in all likelihood, be far less disturbed by aircraft noise than if you live and work in a tranquil rural and otherwise peaceful environment. Clearly this is an extremely important issue in the case of Stansted and other airports located in a rural setting and it must be given due consideration.

The second principle is that people should not be exposed to aircraft noise in locations where they were previously either less or not exposed.

The third principle is that one size doesn’t fit all and routes should be designed to suit the local circumstances.

With the introduction of PBN, it is clear that the resulting concentration on routes up to 7,000ft has exacerbated noise nuisance for people living under the centre lines of routes which have trialled RNAV. Additionally, the likely future implementation of the more accurate RNP (RF) for Standard Instrument Departures (‘SID’) could further concentrate aircraft on departure routes up to 7,000ft. And this will be true presumably for Standard Terminal Arrival Routes (‘STAR’) with RNP (RF). Therefore there needs to be more weight given to noise impacts than currently allowed for in the balance of environmental impacts between 4,000ft and 7,000ft since it will become a more serious environmental harm for those people living under route centre lines.

## **6. The barriers to modernisation of airspace, including the environmental and community considerations arising from changes to the current arrangements for managing UK airspace**

The Government’s 2013 Aviation Policy Framework states: *‘We want to strike a fair balance between the negative impacts of noise (on health, amenity (quality of life) and productivity) and the positive economic impacts of flights. As a general principle, the Government therefore expects that future growth in aviation should ensure that benefits are shared between the*

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<sup>12</sup> *Future Airspace Strategy, 30 June 2011, Executive Summary, para ES5.*

*aviation industry and local communities. This means that the industry must continue to reduce and mitigate noise as airport capacity grows. As noise levels fall with technology improvements the aviation industry should be expected to share the benefits from these improvements*<sup>13</sup>

The CAA's FAS was produced in June 2011 with a programme to modernise airspace across the UK out to 2030. However, it is already recognised that airspace trials subsequently conducted at Heathrow and Gatwick in 2014 generated a very large number of complaints and negative reaction from some local communities, particularly in terms of the lack of consultation prior to the trials commencing. This led to the Government reducing support for airspace modernisation and proposals to modernise airspace have since been delayed. In addition, and currently at Stansted, there has been a vast increase in the number of complaints following the implementation of a departure route change in February 2016 coupled with delays in PBN trials.

The first instance concerns the switch of flights from the Dover to the Clacton departure routes, despite a consultation exercise which showed overwhelming local opposition, and which has given rise to a vast increase in the number of complaints. In the NATS departure routes change proposal, the benefit of reduced delay was merely an assertion in all the documents published. Nowhere in the NATS proposal or the CAA's decision were any figures given to support this claim. There were no figures provided for the delay before or after the proposed airspace change or how it was weighted against the increase in the number of people annoyed. The table below lists the numbers of separate noise complaint forms submitted to Stansted Airport via the SSE noise complaints website in the last six years. It clearly shows a large increase of complaints from villages under the Clacton departure routes in 2016 that were previously not affected by aircraft noise nuisance, particularly those villages further away from the airport. Many of the complaint forms complained about more than one aircraft. This is not the total number of complaints since the airport also receives complaints through its own noise line by email, telephone and letter; however it is a representative sample.

	2016	2015	2014	2014	2012	2011
<b>CLACTON 04 ROUTE</b>						
<i>Tilty</i>	22	1	3	3	0	0
<i>Great Dunmow</i>	32	1	8	9	3	2
<i>Stebbing + Stebbing Green</i>	155	0	2	1	1	3
<i>Felsted</i>	123	0	0	0	0	1
<i>Rayne</i>	20	0	0	0	3	1
<i>Braintree</i>	8	0	1	0	0	0
<i>Great Notley + Black Notley</i>	19	0	2	2	1	2
<b>CLACTON 22 ROUTE</b>						
<i>Hatfield Heath</i>	71	6	22	14	43	20
<i>Hatfield Broad Oak</i>	78	7	2	11	5	4
<i>The Rodings</i>	14	0	7	0	1	1
<i>Good Easter</i>	21	0	0	0	0	0
<i>High Easter</i>	388	1	2	0	1	2
<i>Pleshey</i>	12	0	0	2	0	0

Note: Hatfield Heath is also particularly affected by the RNP1 (RF) trial - see below.

<sup>13</sup> Aviation Policy Framework, DfT, March 2013, para 3.3.

The second instance concerns the trial of RNP1 (RF) PBN on two selected Stansted departure routes. In 2009, local villages close to Stansted complained about increased noise disturbance under the Clacton 22 departure route following a change of noise abatement departure procedure by the low cost carriers, the great majority of Stansted operators. Stansted Airport undertook to seek measures to mitigate the impacts and keep the local communities informed. This subsequently resulted in a CAA formal trial of a RNP1 (RF) replicated departure route commencing in May 2013 originally anticipated to last 12 months. This route was intended to avoid overflying the centres of the most affected villages and the trial results showed this could be achieved. However it is now nearly eight years since the initiative commenced and local communities have yet to see any mitigation benefits, especially since Ryanair, the dominant airline at Stansted, is still only partially flying the trial route.

In both instances, the results of airspace changes have given rise to considerable lack of trust between local communities and the aviation industry, NATS and the CAA, and the perception that changes are being imposed without proper regard for the wellbeing and quality of life of local communities. It is clear that environmental and community considerations have already raised barriers to the modernisation of airspace. It is SSE's view that unless a fair and equitable balance of environmental and community protection is assured (that does not attach undue weight to the commercial interests of the aviation industry) these barriers will continue to exist.

SSE believes that the following key actions are needed to reduce these barriers:

- A significantly improved airspace change process with increased community involvement including agreeing design principles leading to a better understanding of the reasons for an airspace change
- Clear and quantitative evidence and data being published that supports a proposed airspace change including improvements in efficiency/reductions in delay, reductions in noise, reductions in emission/improvements in air quality and weighting methods.
- If a conflict is found to exist between user efficiency gains and environmental gains, priority should be given to delivering environmental gains.
- The introduction of an appeal function in the CAA's proposed improved airspace change process. The lack of an appeal function would be perceived as the CAA acting as both judge and jury and providing no avenue for local communities to seek legal recourse other than the extremely expensive route of Judicial Review. This is contrary to natural justice and the introduction of an appeal process is necessary.
- The definition of a more robust framework and methodology for the assessment of aviation noise nuisance and adverse health effects.

## **7. The effectiveness and adequacy of engagement with affected communities when planning and introducing airspace changes and the lessons to be learnt from recent trials, particularly at Heathrow and Gatwick**

The DfT has recently established an Airspace and Noise Engagement Group (ANEG) and this is a welcome development. In the past, DfT's Aircraft Noise Management Advisory Committee ('ANMAC') and its Technical Working Group carried out much valuable work on noise and flight path issues. However the results of this work were rarely seen and appreciated by the communities living around airports and under flight paths. Furthermore Airport Consultative



Committees are viewed by many local residents as simply an extension of the airport's PR department. It is an airport operator's statutory duty to provide adequate facilities for consultation and current public perception is that this falls below expectations.

SSE believes that the creation of the ANEG as an umbrella organisation will help to bring together the range of stakeholders and would bridge the gap between the few highly involved in detailed airspace and noise issues and the many who feel that they currently do not have a voice. It would provide an equitable forum at a national policy and strategy level. It would assuage the current concerns, not to say anger in some quarters, about the lack of transparency and trust. More importantly it would provide a vehicle to better manage the operational and technical improvements in air transportation for the benefit of all stakeholders.

## **8. The merits of an Independent Aviation Noise Authority and desirability of classifying airspace within the National Infrastructure Commission's remit**

SSE supports the establishment of independent oversight of aviation's noise management around airports and under flight paths. For far too long airport operators have themselves been largely responsible for monitoring and reporting upon the environmental impacts of their own operations and in effect acting as policeman, judge and jury. Even in relation to the implementation of the Environmental Noise Directive, airport operators are given the power of competent authority and entrusted to produce their own noise action plans. The establishment of an Independent Commission on Civil Aviation Noise ('ICCAN') is welcomed but, to be effective, this body needs to have a clear and meaningful *raison d'être*.

The Airports Commission recommended that an Independent Aviation Noise Authority be set up with powers for intervention and enforcement. The DfT proposal for ICCAN only includes functions such as advising and monitoring. In the absence of powers for intervention and enforcement, ICCAN would become a toothless body; it would be merely an adviser. It is important for these powers to be included or enacted through a suitable vehicle. It should be remembered that aircraft are inherently noisy machines and that aircraft noise is subject to an entirely different regulatory regime to other noise pollution. The Civil Aviation Act provides that no action for noise nuisance can be taken as long as an aircraft observes the rules. While some rules exist (e.g. fines for non-compliance with NPR track keeping), there is no satisfactory recourse in UK law for protection against noisy aircraft. This needs to be rectified by inclusion in the ICCAN terms of reference.

The ICCAN must not become solely a communications vehicle. While it is important that it is perceived to be fully transparent and raise the trust levels between the industry and the community, it must not lose sight of the need to reduce the adverse noise impacts of flying operations as one of its key objectives.

## **9. The UK's relationship with the European Union in terms of airspace management and any potential issues arising from Brexit**

The UK should continue to support the management of airspace within the Single European Sky initiative. The rest of Europe affects flights into the UK and ideally this total continuum of airspace should be seamless. Upper airspace can be managed in what are termed large functional blocks and this principle should be extended as widely as possible. It is operationally and technically possible to safely and efficiently control air traffic throughout Europe both for en-

route and in the terminal marshalling area without the current plethora of Air Traffic Control Centres in every country. A smaller number of pan-European centres could undertake the task and this would also bring cost savings such that airlines would pay lower user charges.

An example of good European integration is the Eurocontrol Central Flow Management Unit in Brussels which, through co-ordinated management of air traffic throughout Europe, seeks to minimise congestion and make the most efficient and effective use of available capacity.

A smaller number of centres each having control over a larger volume of airspace throughout Europe would necessitate a more integrated approach to air traffic management, including the development of UK plans for airspace changes.

*Stop Stansted Expansion*

*March 2017*