NOISE ACTION PLAN 2019-2023

stanstedairport.com

MAG
London Stansted
Airport

CONTENTS


MAG
London Stansted
Airport
swissport

FOREWORD

Since MAG acquired London Stansted Airport in 2013 it has been transformed into one of the UK's fastest growing airports. This growth has come in many forms; over £150m has been invested in refurbishing the terminal; the customer experience has been enhanced; the airport now welcomes nearly 10 million more passengers every year; there are twice as many airlines to choose from; and we have developed a route network which is the envy of many major airports around the world.

The momentum of this new era has brought with it a new sense of ambition for the airport and over the next decade we plan to make best use of the airport's single runway and invest £600 million in further improving our facilities – the centre-piece of which will be a new terminal for arriving passengers.

Another area of the airports operation that is unrecognisable from five years ago is our approach to engaging with our neighbours. We now have a proud track record of responsible growth; we see a greater proportion of passengers arriving at our doors on public transport than any other UK airport; we have had zero breaches in our air quality limits; divert 99% of our waste from landfill and donate large quantities of uneaten food to support our local food bank in Harlow.

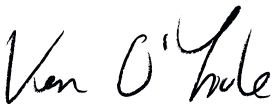
A commitment to maximising the social and economic benefits of our growth is intrinsic in our DNA and every day the organisation does everything it can to balance the economic benefits of the airport with strong and robust environmental and noise management. We recognise that some communities around the airport are affected by aircraft noise and we want to work in partnership with local residents, airlines, regulatory agencies and Government to reduce these impacts where possible.

We have made significant progress in this area, including the introduction of the Performance Based Navigation initiative which has enabled aircraft to fly more accurately and consequently reduced the number of people overflown on those routes by up to 85 percent.

Despite the airports ongoing growth, since we published our first Noise Action Plan in 2006, the number of people within our noise contours has actually reduced. This is largely due to the introduction of more modern, quieter aircraft and smarter ways of flying and over the course of this updated Noise Action Plan (2019-2023) the further introduction of modern technology and aircraft will continue to deliver improvements. As aircraft such as the Airbus NEO, Boeing 737-MAX and Boeing 787 'Dreamliner' become increasingly popular at Stansted, they will allow us to continue to accommodate growth in a way that is consistent with our objective of limiting where possible, the number of people affected by noise as a result of the airport's operation and development.

This new Noise Action Plan forms our roadmap for the next five years and brings together our policies and commitments for tackling noise disturbance which range from restricting the use of the noisiest aircraft at night through to investigating the use of steeper approaches to keep aircraft higher for longer. It also shows how we have performed in relation to our previous commitments to managing noise.

In finalising this Noise Action Plan, we are working with our Consultative Committee, environmental health officers from the surrounding local authorities, local councils and community representatives, airlines and NATS (our air traffic control service provider). The final action plan will take into account feedback from those stakeholders as well as others who took the time to respond to our consultation.



KEN O'TOOLE
Chief Executive, London Stansted Airport

1. NOISE ACTION PLAN

WHAT IS A NOISE ACTION PLAN?

A Noise Action Plan is a five year plan to manage issues related to aircraft noise at the airport. It is a key part of delivering the Government's noise objective to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise.

Noise Action Plans are a legal requirement under European Union Directive 2002/49/EC relating to the Assessment and Management of Environmental Noise. This Directive is commonly referred to as the Environmental Noise Directive or END[1]. The requirements of the END are transposed by the UK Government in the Environmental Noise (England) Regulations 2006[2] as amended ("the Regulations").

WHO IS THE 'COMPETENT AUTHORITY'?

Under the Environmental Noise (England) Regulations 2006 the competent authority for major airports is the airport operator. Consequently, Stansted Airport Limited is the competent authority for this Noise Action Plan.

WHO IS REQUIRED TO PRODUCE A NOISE ACTION PLAN?

The requirements for producing Noise Action Plans are specified in the Environmental Noise (England) Regulations 2006 and apply to four areas:

- Agglomerations, including large towns or cities, with more than 100,000 people and a population density equal to or greater than 500 people per square kilometre;
- Roads with over 3 million vehicle movements a year;
- Railways which have more than 30,000 train movements per year;
- Civil airports which have more than 50,000 movements per year (a movement being a take-off or a landing), excluding those purely for training purposes on light aircraft.

WHAT ARE THE AIMS OF THE NOISE ACTION PLAN?

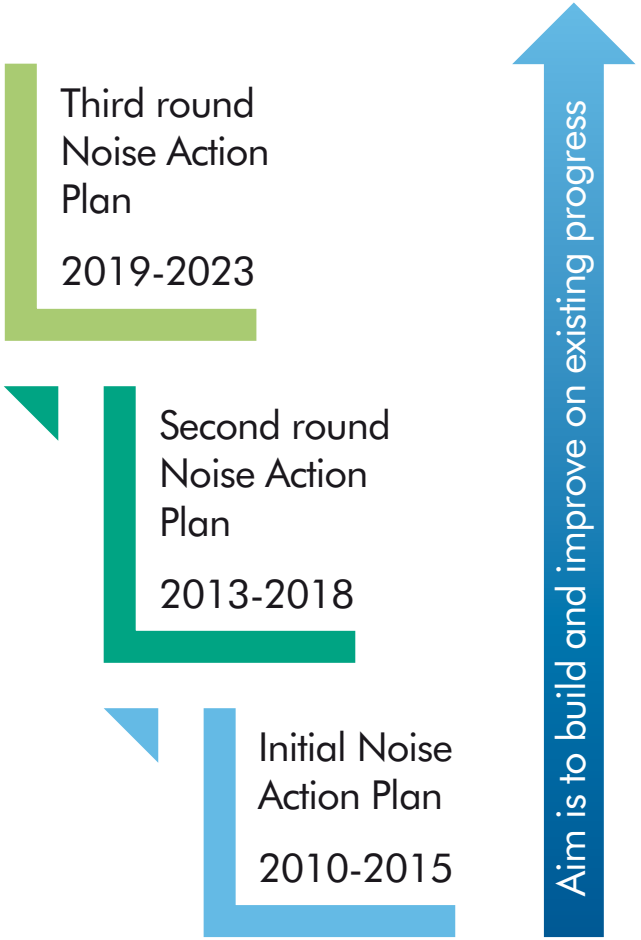
The primary aim of this airport Noise Action Plan is to limit and where possible reduce the number of people significantly affected by aircraft noise from Stansted operations. To do this, it needs to consider the potential for noise disturbance to communities living near the airport and explore how this can be better managed in the future. This will include consideration of anticipated growth at the airport and potential benefits of new aircraft technology and operating procedures, as well as noise controls where necessary. The plan needs to be developed in consultation with those affected by the noise. Some specific aims are:

- to quantify the current number of people and dwellings exposed to noise levels of 55dB L_{den} or more and 50dB L_{night} or more.
- to identify noise problems and situations that need to be improved
- to consider the noise effects of any current noise reduction measures or future projects
- to consider any new evidence regarding the effects of noise disturbance on people
- to consider any new government regulations or polices relating to aircraft noise or operations
- to consult with local communities, business partners and authorities on new and continued actions to manage noise disturbance
- to collectively agree a new Noise Action Plan and review its effectiveness over the period of the plan

REVIEW PERIOD

The Noise Action Plan operates in five year cycles. The aim is for each subsequent Noise Action Plan to build and improve on existing progress to manage the effects of aircraft noise on people. This is the third time that a Noise Action Plan has been produced for Stansted Airport and it is based upon Noise Maps prepared by the Department for Environment, Food and Rural Affairs (DEFRA) showing the situation at the airport in 2016.

Following consultation with local stakeholders during 2018, this new plan will be submitted for formal adoption by the DEFRA Secretary of State and published by 18th January 2019.



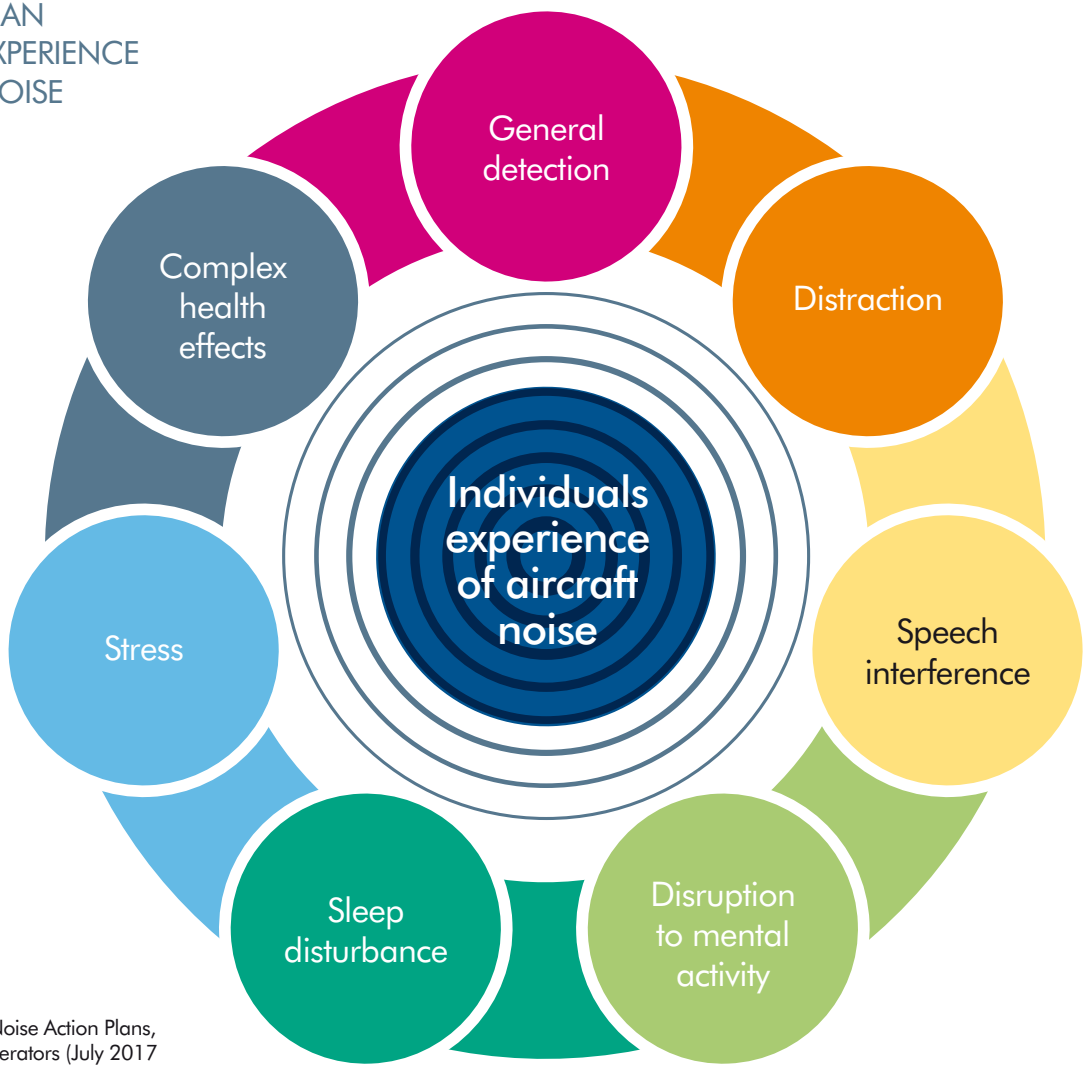
[1] See http://ec.europa.eu/environment/noise/directive_en.htm
[2] See http://www.legislation.gov.uk/uksi/2006/2238/contents/made

2. CONSULTATION

PURPOSE OF THE CONSULTATION

The purpose of the consultation on this Noise Action Plan is to give people the opportunity to provide comments and feedback to shape our proposals for addressing aircraft noise over the next five years. There are many different effects of aircraft noise, and individuals living around the airport experience each of them to different degrees. Current Government guidance has summarised these as shown.

RESPONSES TO AN INDIVIDUAL'S EXPERIENCE OF AIRCRAFT NOISE



Source: DEFRA Airport Noise Action Plans, Guidance for Airport Operators (July 2017

The airport's established approach to this consultation process is in line with the EU Environmental Noise Directive approach which states:

- The public are consulted about proposals in the plan
- The public are given early and effective opportunities to participate in the preparation and review of the plan
- The results of public participation are taken into account
- The public are informed of the decisions that have been taken
- Reasonable time frames are provided allowing sufficient time for public participation

APPROACH TO THIS PUBLIC CONSULTATION

London Stansted Airport has a well-established community programme, strong relationships with external stakeholders and is familiar with undertaking public consultations on its strategic plans, including previous Noise Action Plans and the Sustainable Development Plan (SDP). Details of consultations on previous versions of the airport's Noise Action Plan are provided in Appendix A

It is important that we continue to seek feedback from our stakeholders to this latest plan. We therefore seek views and comments from the public. The public consultation process will include:

- Feedback from recent community consultation associated with developments at the Airport
- Engagement and discussions with key stakeholders including airlines, regulators and the airport Consultative Committee during the drafting of the Noise Action Plan
- Communication with stakeholders when the draft Noise Action Plan is published for consultation

- Online public consultation to enable stakeholder comments to be made
- An offer of meetings and briefings with key local stakeholders including County Councils, District Councils, Town Councils, Parish Councils and Members of Parliament
- Use of existing communication channels to promote the consultation on the draft Noise Action Plan
- Encouraging comments from a wide range of stakeholders across the areas around London Stansted Airport
- Considering comments and including a response to consultation within the final version of the Noise Action Plan
- Notifying stakeholders and consultees when the final Noise Action Plan is adopted and published

FORMAT

A copy of the draft Noise Action Plan will be published on the London Stansted Airport website with details on how individuals can respond.

Whilst we will be happy to receive all comments, to help structure responses a questionnaire has been produced which we encourage people to use where possible. A dedicated email address is also available for people to share their views with us – **noiseactionplanSTN@stanstedairport.com**

All formal consultees (full list of consultees below) will receive a covering letter with a link to the draft Noise Action Plan.

FORMAL CONSULTEES

County Councils

- Essex County Council
- Hertfordshire County Council

District Councils

- Uttlesford District Council
- Harlow Council
- East Hertfordshire District Council
- Epping Forest District Council
- Braintree District Council

Town Councils

- Bishops Stortford Town Council
- Great Dunmow Town Council
- Ware Town Council
- Saffron Walden Town Council

Parish Councils

- Widdington PC
- Henham PC
- Elsenham PC
- Great Hallingbury PC
- Little Hallingbury PC
- Thorley PC
- Abbess Beauchamp and Berners Roding PC
- Standon PC
- Little Munden PC
- Westmill PC
- Hormead PC
- Brent Pelham PC
- White Roothing PC
- Matching PC
- Hatfield Broad Oak PC
- Takeley PC
- Broxted PC
- Chickney PC
- Debden PC
- Thaxted PC
- Tilty PC
- Little Easton PC
- Great Easton PC
- Little Canfield PC
- Great Canfield PC
- Barnston PC
- Little Hadham PC
- Albury PC
- Farnham PC
- Manuden PC
- Berden PC
- Roydon PC
- Stocking Pelham PC
- Furneux Pelham PC
- High Roothing PC
- High Easter PC
- Great Dunmow PC
- Little Dunmow PC
- Aythorpe Roding PC
- Leaden Roding PC
- Thundridge PC
- Great Munden PC
- Buntingford PC
- Ferneux Pelham PC
- Meesden PC
- Stebbing PC
- Lindsell PC
- Stansted Mountfichet PC
- Birchanger PC
- Ugley PC
- Quendon and Rickling PC
- Arkesden PC
- Great Bardfield PC
- Finchingfield PC
- Little Bardfield PC
- Langley PC

Members of Parliament

Kemi Badenoch MP – Saffron Walden
Rt Hon Robert Halfon MP – Harlow
James Cleverly MP – Braintree
Alex Burghart MP – Brentwood and Ongar
Mark Prisk MP – Hertford and Stortford
Rt Hon Sir Oliver Heald QC MP – North East Hertfordshire

Airport and Industry

Stansted Airport Consultative Committee (inc EIG)
Airport Operators Committee
Noise and Track Keeping Working Group
NATS

PROGRESS SO FAR

The UK Government provided guidance and information and a data pack for London Stansted Airport in July 2017. This information has been used to support the development of this Noise Action Plan. Additionally, the airport has discussed the development of the plan and has sought views on aircraft noise from the Stansted Airport Consultative Committee, Environmental Issues Group, Noise and Track Keeping Working Group and through community outreach sessions undertaken to discuss the proposed development of the Airport. Information on best practice and emerging noise reduction work has been gathered by London Stansted Airport through MAG's involvement in Sustainable Aviation, a coalition of UK aviation companies[3]. This includes information shared through Sustainable Aviation's noise group and the 2013 Noise Road-Map plus the 2017 Progress Report[4]. We have sought to incorporate the data, information and views raised during these meetings in this Noise Action Plan.

[3] MAG was a founding member of Sustainable Aviation in 2005 and chairs the group as the time of writing
[4] See http://www.sustainableaviation.co.uk/ for more information

3. THE AIRPORT

ABOUT STANSTED AIRPORT

London Stansted Airport is the fourth largest airport in UK serving London, the East of England and the wider South East. In 2017, it handled 25.9 million passengers and currently serves over 190 destinations across Europe, the Middle East and North America. Since 2013, it has been owned and managed by Manchester Airports Group (MAG).

As well as playing a key role in connecting the East of England region to the world, the airport is a catalyst for economic growth and productivity, employing over 12,000 people across 200 companies and contributing over £1 billion Gross Value Added to the UK economy. Over two-thirds of the employees live in North Essex and East Hertfordshire with the airport being a major source of employment in the nearby towns of Bishop's Stortford, Great Dunmow, Harlow and Braintree.

The airport has one operational runway and a single terminal building located to the south of the runway. To the north of the runway, a number of general aviation companies operate from their own facilities. The main runway is 3,048m in length and is equipped with a Category 3b instrument landing system. Over 90 different aircraft types served the airport, including passenger and cargo, with the overwhelming types being twin engine, medium sized, narrow bodied passenger aircraft such as the Boeing 737-800 and the Airbus A319.

Over recent years, the airport has welcomed the introduction of a new generation of quieter and more efficient aircraft such as the Airbus Neo series and the expected introduction of the Boeing Max from 2019. These new aircraft are up to 50% quieter than the aircraft they replace bringing all the technological enhancements of recent engine and airframe design. As part of our new Noise Action Plan we will continue to closely monitor their operation and work with our airlines to fully realise the benefits of these new quieter aircraft.

FUTURE PLANS

Stansted's origins date back to the Second World War when the airport was built to provide an airfield base for the United States Army. Over the last 75-years the airport has grown considerably, and it is now one the fastest growing airports in Europe with permission to serve up to 35mppa, with a noise contour limit of 33.9km² and an annual aircraft movement limit of 274,000. We have submitted a planning application to our local planning authority, Uttlesford District Council (UDC) to increase this to 43mppa by making better use of the existing single runway within our existing noise and movement limits. Stansted has the ability to support the introduction of new services and has ambitious plans for the future.

In April 2017, UDC granted permission to construct new terminal facilities at the airport. These plans are part of the Stansted Transformation Programme (STP), a £600 million, five- year investment programme. The STP will focus on three key areas that will deliver capacity, cater for future growth and offer better service to customers and airlines:

- Arrivals Building – A new £130m, 34,000m² arrivals facility is the centrepiece in MAG's investment programme, it will enhance the passenger experience and provide capacity for growth at the airport over the next decade. It will be situated next to the current terminal building and will include larger immigration and baggage reclaim areas, new retail facilities, improved access for all onward transport options and a public forecourt to create a welcoming environment for arriving passengers.
- Departures Terminal – The existing terminal will be transformed into a dedicated departure only building providing 130+ shore line check-in, secondary screening area, expanded International Departure Lounge (IDL) with additional seating, extended baggage facilities and an extended remote bussing gate facility.
- Airside – There will be significant upgrade to the airside infrastructure to support an increase in peak hour movements per hour and to support parking for based aircraft. This will include, 21 additional aircraft parking stands, a new rapid access taxiway and a new rapid exit taxiway.

MAG has an ambitious long-term plan for Stansted that will create more choice and competition for passengers, new terminal facilities and more opportunities for local people. In February 2018, we submitted a planning application to Uttlesford District Council to raise the annual passenger limits to 43mppa. At the time of this consultation on the noise action plan, the planning application is still being determined.

Our commitment made as part of the planning application is to grow within our limits. This means that we propose to make best use of our existing capacity without increasing the number of flights we are allowed to handle, and to contain our impact within the environmental limits that have already been set. In respect of the noise envelope, we predict that the highest noise levels will not reach our maximum already permitted, but are expected to occur around 2024. Beyond this, levels will then decline as the continued introduction of next generation fleet replace the older generation aircraft that leave service.

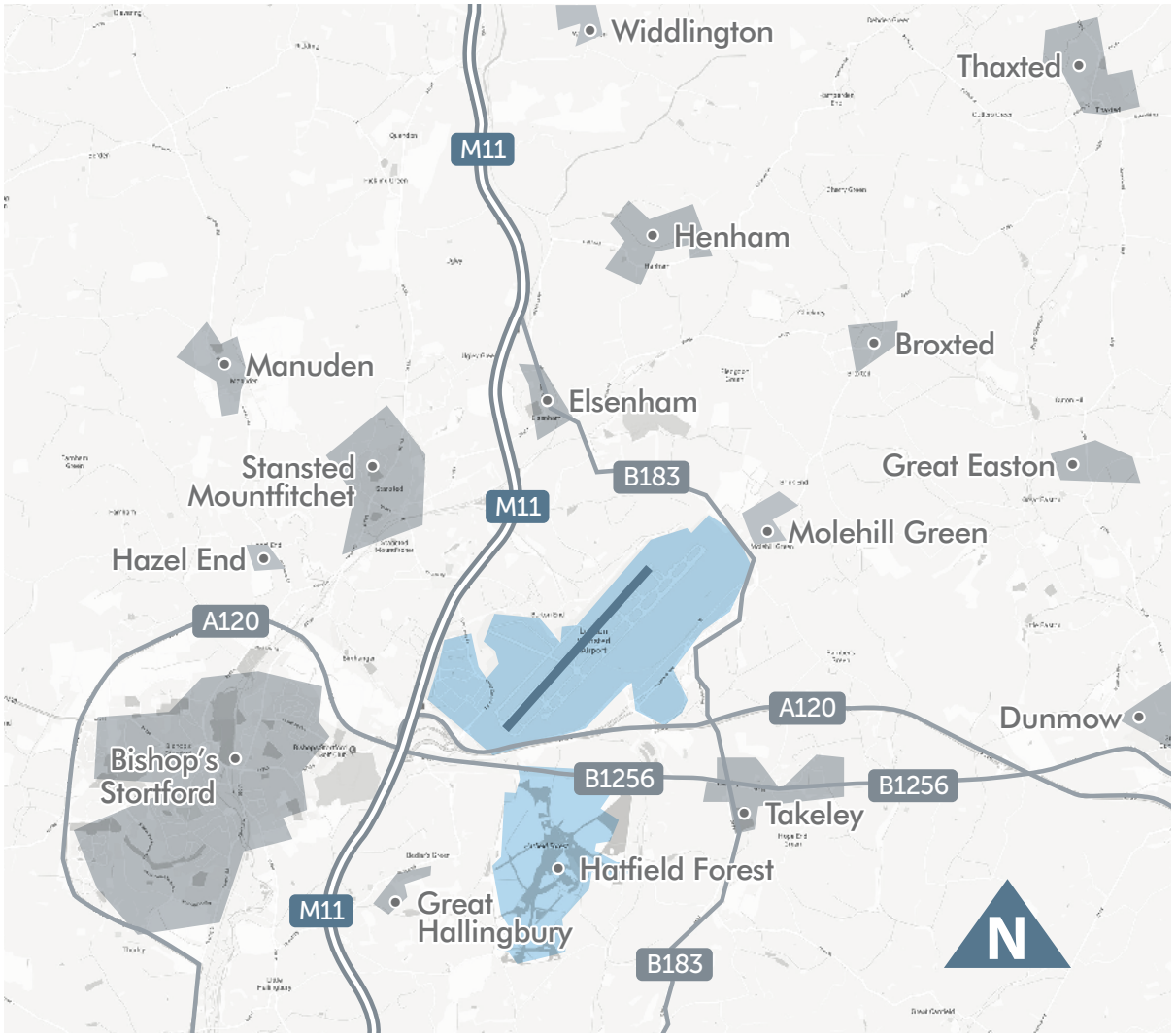
STANSTED OPERATIONAL STATISTICS 2016 (DEFRA NOISE MAPPING YEAR)

24.3 mppa

180,641

152,402 Passenger air traffic movement (PATMs)
13,736 Cargo air traffic movements (CATMs)
14,503 General aviation movements

254,498
Tonnes of cargo



SOURCES OF NOISE

Noise is primarily generated by aircraft as they arrive, depart and move around the airport. Other sources of noise at the airport come from activities involved in getting the passengers and cargo to and from the aircraft, from aircraft maintenance and engine tests, from construction activities at the airport and from vehicles coming to and from the airport.

Over 90% of aircraft movements at the airport occur during the day with the remaining movements occurring during night time (between 23:30 to 06:00). Information on historic, current and future noise levels at the airport are presented in this plan, along with existing, modified and new actions the airport proposes to implement. This plan has been developed using the 2016 data provided to the airport by DEFRA.

Managing these current noise effects and those arising from future growth is a key focus for the airport. Our long-term aim is to '…limit and reduce where possible, the number of people affected by noise because of the airport's operation and development'.

We are committed to minimising the number of people affected by aircraft noise by routinely reviewing our noise-related targets and policies. We will also continue to support local communities, with a focus on those most affected by aircraft operations. This will include continuing our community-relations programme, noise mitigation schemes and our Community Fund.

We will continue to measure our performance against other airports and to contribute to the sustainable development of the air transport industry at a national, regional and local level. We will also support and contribute to the noise-related commitments contained within the UK's Aviation Policy Framework and emerging national aviation policy.

MAG London Stansted Airport

"In 2017, London Stansted Airport handled 25.9 million passengers and currently serves over 190 destinations across Europe, the Middle East and North America."

4. NOISE MAPPING

WHAT ARE NOISE MAPS?

In the same way that geographical maps use contours to distinguish between high ground and low ground, Noise Maps use lines to identify those areas that are increasingly louder or quieter depending on the proximity to the airport, known as contours. Noise Maps are often referred to as Noise Contour Maps.

Although Noise Contour Maps can be used to provide information on noise levels in terms of average noise and the number of people affected, their main purpose is to help responsible authorities produce Noise Action Plans designed to manage noise and reduce noise levels where appropriate. Having produced Noise Contour Maps for many years, the results can be interpreted to understand how the impacts of aircraft noise are changing.

HOW WERE THE MAPS MADE?

Our noise contour maps have been produced by the Civil Aviation Authority's Environmental Research and Consultancy Department (ERCD), who maintain the UK's civil aircraft noise model known as ANCON. ANCON is a computer-generated model that takes account of things such as the number and types of aircraft departing and landing, where the aircraft are flying, the time of day or night and to estimate the noise on the ground around an airport. The Noise Contour Maps were provided to the airport in an 'Action Planning Data Pack'. The contents of the Action Planning Data Pack were developed under the terms of the Environmental Noise (England) Regulations 2006 (as amended). This update includes the details of the 2016 data pack and maps.

These contours and associated data are designed to provide a description of the current noise impact of the airport on its surroundings and how it has changed since the publication of the last noise action plan.

Most airports have L_{Aeq} noise contour data going back many years and can therefore be assessed on a longer-term basis to ascertain any trends. Looking at longer term contour results these are less impacted by variances in wind direction in any given year which can, in the short term, influence areas and population counts accordingly.

ARE THE NOISE MAPS DIFFERENT FROM THE NOISE CONTOUR MAPPING SEEN PREVIOUSLY?

If you compare these Noise Contour Maps with the Noise Contour Maps previously produced for us and other UK airports, you may notice some significant differences. The Noise Contour Maps in this document have been prepared specifically by the CAA to help us produce our Noise Action Plan. Noise Contour Maps are produced using aircraft movements for an average summer's day (mid-June to mid-September), and it has been custom to produce separate maps for only the 16-hour day (07:00 to 23:00) and 8-hour night (23:00 to 07:00). These contours are based on 92 days' data and presented in terms of the 'A-weighted equivalent continuous noise level' (L_{Aeq}). The A-weighting is designed to represent the human ear's response to sound.

Under the Environmental Noise (England) Regulations 2006, as amended, noise mapping is carried out every five years using the L_{den} noise contour – most recently in 2016 – for an annual average day (January to December) for each of the following periods.

- L_{day} – the level in the day, 07:00 to 19:00
- $L_{evening}$ – the level in the evening, 19:00 to 23:00
- L_{night} – the level at night, 23:00 to 07:00
- L_{den} – the level over 24 hours

The L_{den} figures are produced by combining those for L_{day}, $L_{evening}$ and L_{night}. To take account of the fact that noise is more disturbing at night-time, before the L_{day}, $L_{evening}$ and L_{night} values are combined to produce the L_{den} level, a weighting of 5dB is added to the evening values and 10dB is added to the night values.

Because of these differences, the two sets of contours, annual and 'summer 92 day', are similar but not directly comparable.

We recognise that people respond differently to noise, and this makes it difficult to quantify the relationship between noise and annoyance. However, for the purposes of this Noise Action Plan, aircraft noise is considered to be affecting places near the airport if the noise mapping has indicated an L_{den} value of 55dB or more or an L_{night} value of 50dB or more. As a priority, the Aviation Policy Framework 2013 requires that we should consider any further measures which we could take in areas where homes exposed to more than 69dB L_{Aeq} from 07:00 to 23:00 are shown in our noise contour maps. The 2016 Noise Contour Maps show that there are no properties within this contour.

5. NOISE MAPPING RESULTS

SUMMARY RESULTS – POPULATION

The chart below sets out the changes to the estimated number of people affected by noise, from the DEFRA noise mapping results. The chart shows the results of the modelled noise levels for each noise metric in 2016, compared to previous DEFRA Noise Action Plan mapping years of 2006 and 2011.

The population estimates show that over the course of the last 10-years, there has been a reduction in the number of people exposed to aircraft noise in all contours models.

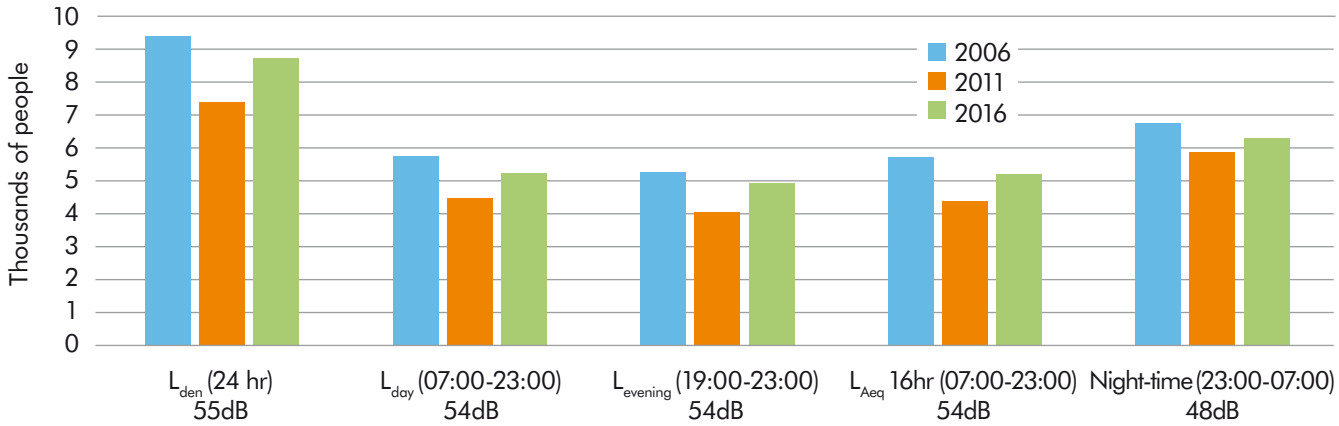
By way of illustration, the number of people within the 55dB L_{den} contour has fallen by 700 (8%) to 8,700, and this level of reduction is consistent across all the contour models. Over the same period the passenger numbers grew by 3% from 23.6mppa to 24.4mppa

Over the same period, we can see the numbers of people within the L_{day}, $L_{evening}$, 16-hour L_{Aeq} and Night Time contours have also reduced by between 8% and 9%, with the reductions in people between 400 $L_{evening}$ and 700 in L_{den}.

Using the latest government noise indicator (54dB L_{Aeq} 16-hour is now considered to mark the approximate onset of significant community disturbance, replacing 57dB L_{Aeq}, 16-hour following the recent Survey of Noise Attitudes (SoNA 2014: aircraft)) the results for the 54dB L_{Aeq} 16-hour contour show a reduction of 8.7% in the number of people affected by aircraft operations over the same 10-year period.

The data also indicates that noise impacts have reduced for all contour models over this 10-year period.

DEFRA NOISE MAPPING RESULTS – NUMBER OF PEOPLE WITHIN NOISE CONTOUR LEVELS



SUMMARY RESULTS – CONTOUR AREA

The chart below sets out the changes to the contour area, from the DEFRA noise mapping results. The chart shows the result for the contour area for each noise metric in 2016, compared to previous DEFRA Noise Action Plan mapping years of 2006 and 2011 and separate graphs for the same years Air Traffic Movements (ATM) and passenger numbers.

Like the population count, the contour area has shown similar reductions in size in all areas over the last 10-years. The contour area defines the area of the associated population count as shown in the previous section.

The 55dB L_{den} contour has reduced from 73.3km² in 2006 to 64.4km² in 2016, a reduction of 8.9km² (12%).

The 48dB L_{Aeq} contour has reduced from 50.0km² to 42.7km², a slightly larger reduction of 14.5%.

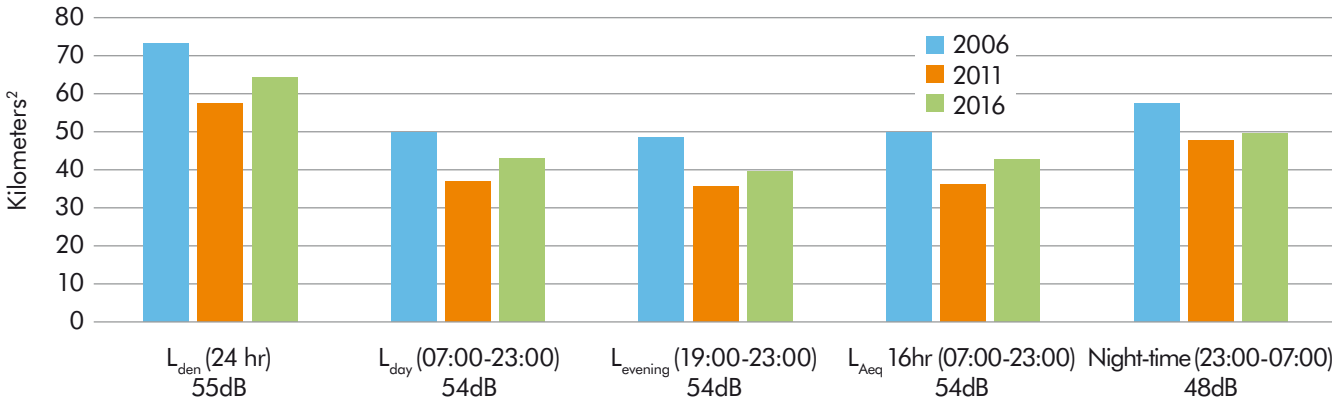
The nature of the L_{den} and L_{night} contour has been briefly summarised below and full details of the changes is provided in Appendix C. In considering the results it is important to recognise that as well as the numbers and types of aircraft operating, that the weather patterns over a sustained period also affects the shape and therefore area of the noise contours. Aircraft take-off and land into wind for reasons of operational safety. The wind direction over a longer period cannot be predicted and this can influence the contour results in any given period. For this reason, the airport has interpreted the results as being unchanged compared to previous years if the results indicate a change in the number of people of 100 or fewer.

WEIGHTED 24-HOUR CONTOUR (L_{den})

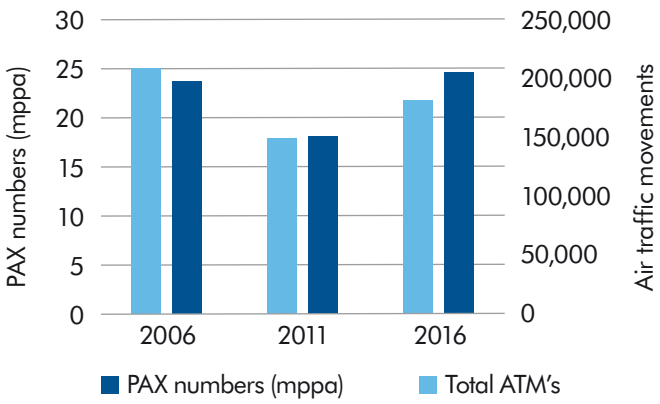
The 55dB L_{den} contour has reduced in size by 8.9km² since 2006. The total number of people living within this contour area has also reduced from 9,400 to 8,700. A map of the contour is shown in Appendix C.

The 55dB L_{den} contour extends to15km to the north-east of the airport, to the edge of Great Sampford. This shape is consistent with and influenced by the predominance of runway 22 arrivals from the north-east. To the south-west of the airport, this contour extends past Sawbridgeworth, abeam High Wych, approximately 9km from the airport boundary. The curved shape extending towards Hatfield Heath is consistent with runway 22 easterly departures and to a lesser extent the shape of the contour is curved slightly west near Allen's Green

DEFRA NOISE MAPPING RESULTS – AREA OF NOISE CONTOUR IN KM²



ATM'S AND PAX NUMBER PER CONTOUR YEAR FOR DEFRA NOISE MAPPING RESULTS



The 60dB L_{den} contour extends 8km from the airport towards but remaining short of Thaxted. To the south-west of the airport this contour encompasses the Great Hallingbury area but remains outside of Little Hallingbury and Wrights Green. The influences of departures are not so apparent with the shape of this contour, with very little curving towards to the runway 22 departure routes.

The 65dB L_{den} contour extends into but not beyond the Broxted area to the north-east of the airport. To the south-west, the contour also extends to Great Hallingbury, but does not extend beyond the M11 motorway.

The 70 L_{den} contour of 2.6km² is largely contained within the airport boundary but extending just beyond boundary of the operational areas of the airport to the north-east. This contour has reduced from 3.5km² to 2.6 km² over the last 10-years, a reduction of 25%.

The innermost 75dB L_{den} contour at 1.0km² remains entirely within the airfield perimeter and has no dwellings or population.

NIGHT-TIME CONTOUR (L_{night})

The outermost of the L_{night} contours is the 48dB. It extends to the north-east of the airport, beyond Thaxted abeam Little Sampford. To the south-west, the contour extends towards High Wych, just beyond Sawbridgeworth. Unlike the L_{den} contours, the curves associate with departures are less pronounced as most night time operations are arrivals.

The 51dB contour reaches just past Thaxted to the north-east, but remains clear of Little Hallingbury and Woodside Green to the south-west, with the departure influence becoming steadily less pronounced.

The 54dB L_{night} contour reduces further still with the 57dB L_{night} contour extending to Broxted to the north-east and only as far as the M11 motorway to the south-west. All the contours progressively decrease in width and at this level do not extend west beyond J8 of the M11 motorway.

The 66dB L_{night} contour follows the boundary of the operational area of the airport. Both the 63dB and 66dB L_{night} contours have a zero population count and have reduced in both 2011 and 2016 from the baseline of our original Noise Action Plan data of 2006.

OTHER CONTOURS

The other contours provided as part of the DEFRA data pack, $L_{evening}$, L_{day} and L_{Aeq} are shown in full in Appendix C along with associated data area and population data.

POPULATION ESTIMATES

The Noise Maps produced by DEFRA, have estimated the population and number of homes exposed to noise above the various levels. DEFRA worked out the number of homes and the associated population using 2015 Ordnance Survey Address Base and Topography layer and information from the Office of National Statistics mid-year population estimates, June 2015, taking account of buildings that contain more than one home, such as apartment blocks.

6. REGULATION AND POLICIES

There are four main tiers of regulation which govern aircraft noise in the UK: international, European, national and local. This section sets out the tiers of aircraft noise regulation affecting operations at airports.

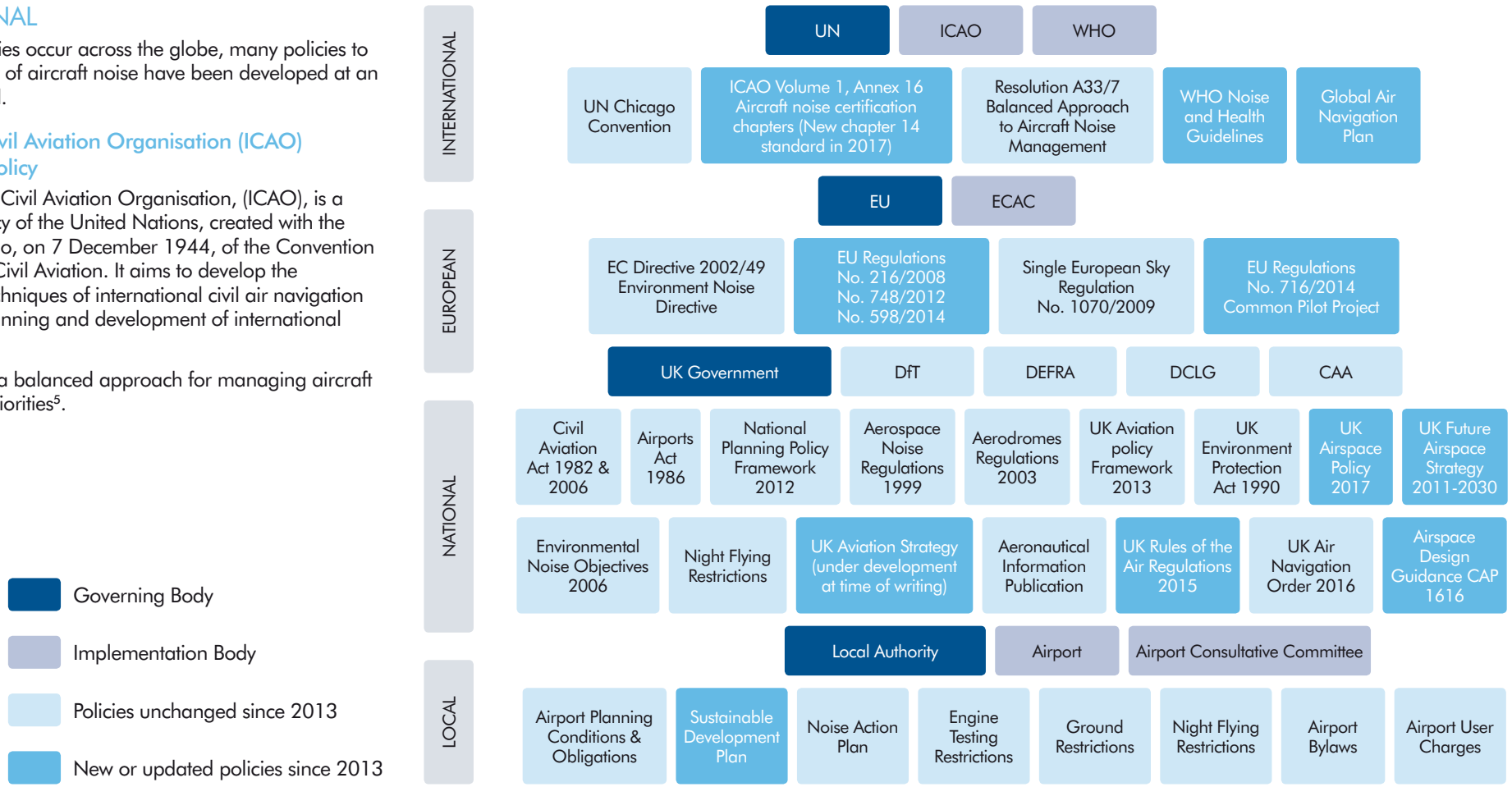
INTERNATIONAL

As aviation activities occur across the globe, many policies to address the effect of aircraft noise have been developed at an international level.

International Civil Aviation Organisation (ICAO) Aircraft Noise Policy

The International Civil Aviation Organisation, (ICAO), is a specialised agency of the United Nations, created with the signing in Chicago, on 7 December 1944, of the Convention on International Civil Aviation. It aims to develop the principles and techniques of international civil air navigation and foster the planning and development of international air transport.

They established a balanced approach for managing aircraft noise with four priorities[5].



[5] For more information on the noise standards agreed by the ICAO balanced approach see – https://www.icao.int/environmental-protection/Pages/noise.aspx

One of ICAO's main activities is the establishment of international standards, recommended practices and procedures regarding the technical fields of aviation, including aircraft noise. After a standard is adopted, it is put into effect by each ICAO member state in its country.

To reduce noise at source ICAO has set progressively tighter certification standards for noise emissions from civil aircraft, known as chapters. The chapters set maximum acceptable noise levels for different aircraft during landing and take-off. For example, aircraft falling within chapter 2 have been banned from operating within the EU since 1st April 2002, unless they are granted specific exemptions. Most civil aircraft, currently operating, fall within Chapters 3 and 4, which are quieter than the previous Chapter 2 aircraft.

All new aircraft manufactured from 31st December 2017 onwards must now meet the requirements of Chapter 14. The standard for Chapter 14 has been set at 7dB cumulative margin below that of Chapter 4. Further details regarding these standards can be found at **www.icao.int/environmental-protection/Pages/noise.aspx**

As these new aircraft are brought into service by the airlines, and the older ones phased out, the ICAO standards have consistently reduced the noise each new aircraft type makes, since it started in the early 1970's.

1. Reduction of noise at source

- Develop and introduce quieter aircraft – sets lower noise limits on new aircraft, currently known as 'Chapters". Chapter 14 is the most recent
- Modify current aircraft to make them quieter

2. Land use planning and management

- Controlling how land can be used and managed to discourage or prevent building of new housing and noise sensitive facilities (for example schools and hospitals) in noisy areas near the airport

3. Noise abatement operational procedures

- Quieter descents
- Quieter climb outs
- Alternative routes to and from the airport

4. Operating restrictions

- Set restrictions on aircraft operations if the earlier measures can not meet agreed noise limits (for example, night restrictions or gradually withdrawing the noisier types of aircraft)

Global Air Navigation Plan[6]

The ICAO Global Air Navigation Plan (GANP) is an overarching framework that includes key civil aviation policy principles to assist ICAO Regions, sub regions and States with increasing capacity and improving efficiency of the global air traffic management system.

World Health Organisation Noise and Health Guidelines[7]

The World Health Organisation published night noise guidelines for Europe in 2009. Theses collated research into the health effects of noise disturbance at night, including from aircraft and made recommendations to governments on managing night noise levels. At the time of writing this plan, these guidelines are under review.

The main elements of the 'balanced approach' were incorporated into UK law as part of the Aerodrome (Noise Restrictions) (Rules and Procedures) Regulations 2003 and the principles are followed in the development of this Noise Action Plan

EUROPEAN

The European Union (EU), through the European Civil Aviation Conference (ECAC), has issued various directives relating to the management and control of aircraft noise standards. Member States apply the requirements of the directives by incorporating them into national legislation.

The relevant directive and regulations for aircraft noise management are:

Environmental Noise Directive (2002/49/EC)

The Environmental Noise Directive has two main aims.

- To define a common approach to avoiding, preventing or reducing the harmful effects, including annoyance, of being exposed to environmental noise.
- To provide a basis for developing community measures to reduce noise from major sources, particularly road and rail vehicles and networks, aircraft, outdoor equipment, industry, and mobile machinery.

This is the over-arching directive that created the specification for how to produce this Noise Action Plan.

EU Regulation No. 598/2014

This has replaced EC Directive 2002/30 and EU Directive 2006/93/EC. The regulation covers the establishment of rules and procedures relating to the introduction of noise-related operating restrictions at Union airports within a Balanced Approach.

Single European Sky Regulation[8]

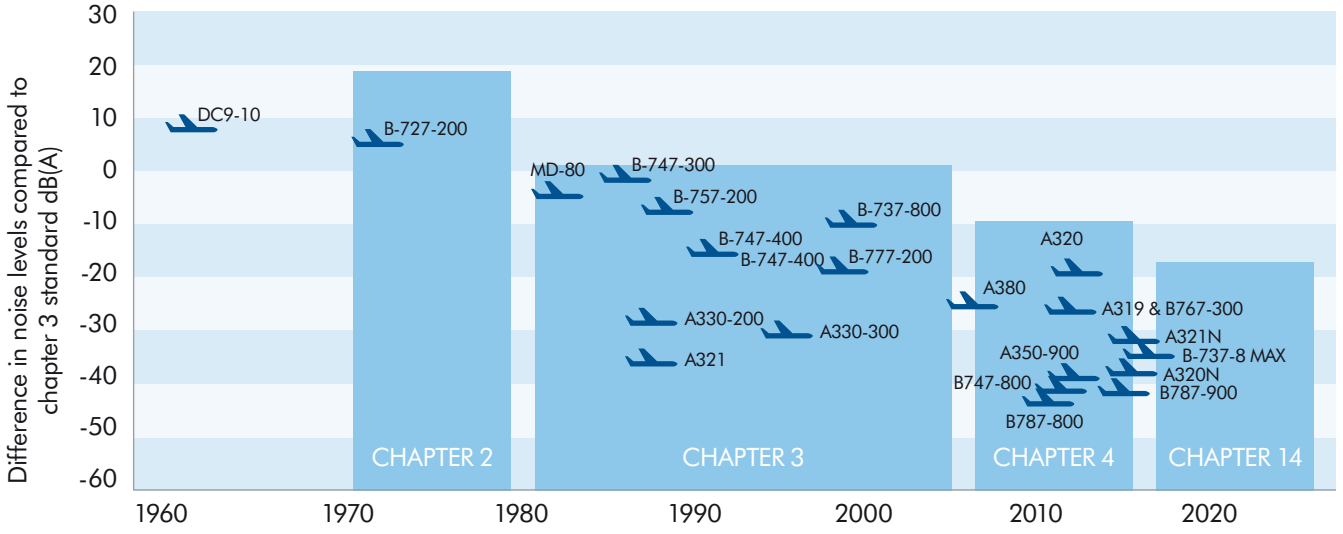
Currently the average flight in Europe is 49km longer than the direct flight. Since the 1990's the European Union has been working to improve the efficiency of air traffic management systems across Europe through the Single European Sky programme. This is now aligned with the ICAO Global Air Navigation Plan.

Pilot Common Project[9]

One of the first Single European Sky projects which became EU Law (EU) 716/2014 is the making binding the implementation of the six first ATM functionalities, constituting the first Common Project, referred to as the "Pilot Common Project" (PCP).

This mandates airports under this regulation to implement a set of ATM functionalities and procedures. We expect this to become UK law irrespective of the nature of any separation under Brexit.

DOWNWARD TREND IN THE NOISE CERTIFICATION OF AIRCRAFT



[6] See https://www.icao.int/airnavigation/Pages/GANP-Resources.aspx
[7] See http://www.euro.who.int/en/health-topics/environment-and-health/noise
[8] See https://ec.europa.eu/transport/modes/air/single_european_sky_en
[9] See https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014R0716

NATIONAL

The UK Government published its current Aviation Policy Framework (APF) in March 2013[10]. This set the Government's overall noise objective to:

'…**limit and where possible reduce the number of people in the UK significantly affected by aircraft noise.**'

This policy is now being reviewed through an Aviation Strategy consultation which is expected to be complete in 2019. This new strategy will set the strategic objective for UK aviation and its sustainable development. During the review of Airspace Policy in 2017, the Government stated a broader overall policy on aircraft noise as:

'…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 with industry in support of sustainable development. Consistent with the Noise Policy Statement for England, our objectives in implementing this policy are to:

- limit and, where possible, reduce the number of people in the UK significantly affected by the adverse impacts from aircraft noise;
- ensure that the aviation sector makes a significant and cost-effective contribution towards reducing global emissions; and
- minimise local air quality emissions and, in particular, ensure that the UK complies with its international obligations on air quality.

At the time of producing this Noise Action Plan, the airport has taken both Government objectives into consideration. Further relevant UK legislation for aircraft noise is detailed opposite:

The Environment Protection Act 1990

Section 79(6) of the Environmental Protection Act 1990, as amended, specifically exempts aircraft noise from the general noise nuisance controls which exist under that legislation.

The Civil Aviation Acts 1982 and 2006

The 1982 Act gave the UK government powers to introduce noise controls to limit or mitigate the effect of noise and vibration from aircraft landing or taking off at designated Airports. Currently only Heathrow, Gatwick and Stansted Airports are designated for the purposes of noise control. These powers were widened by the 2006 Act, which permits any airport authority to establish a 'noise control scheme' which may limit the numbers or types of aircraft that can be used in any given period. It also gives airport authorities the power to introduce charges and penalties designed to encourage the use of quieter or less-polluting aircraft.

DfT Designation

London Stansted is one of the 3 major London Airports that are designated for the purposes of section 78 of the Civil Aviation Act 1982. This enables the Secretary of State to impose requirements on departing or landing aircraft for the purposes of mitigating noise.

London Stansted has been a designated airport since 1993.

Airports Act 1986

This Act gives the Secretary of State powers to limit the number of occasions on which aircraft may land or take off at an airport and schemes to allocate airport capacity.

The Environmental Noise (England) Regulations 2006 (as amended)

These regulations turn EU directive 2002/49 (Environment Noise Directive) into UK law. The regulations state that for the purpose of producing Noise Maps, the airport operator is considered to be the competent authority. The plans must;

- be drawn up for places near the airport that fall within the 55dB L_{den} contour or the 50dB L_{night} contour on Noise Maps;
- be designed to manage noise levels and effects, including reducing noise if necessary; and
- aim to protect quiet areas in agglomerations against an increase in noise.

Once prepared and adopted, the Noise Action Plans must be reviewed and, if necessary, revised, at least every five years and whenever a major development occurs affecting the noise situation.

The Air Navigation Order 2016

This overarching law defines requirements for certifying aircraft, regulations for how pilots must operate aircraft in the UK and rules for how air traffic control must be arranged and managed. It was last reviewed and updated in 2016[11].

The Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003

These regulations turn EU Directive 2002/30 into UK law. They apply to major airport operators with over 50,000 civil jet aircraft movements a year and reflect the adoption of the ICAO balanced approach to managing aircraft noise. Additionally, the regulations define procedures which airports should follow when considering operating restrictions based on aircraft noise.

Aeroplane Noise Regulations 1999

These regulations define the noise certificate requirements for both propeller and jet aeroplanes registered in the UK. It ensures that no aircraft can land or take off in the UK without a valid noise certificate. The regulations are based on the noise certification standards and limits issued by ICAO, (e.g. Chapter 3 and 4 aircraft). They also provide a list of aircraft that are exempt from the ICAO noise certification.

[10] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/153776/aviation-policy-framework.pdf
[11] See http://www.caa.co.uk/Blog-Posts/The-revised-Air-Navigation-Order/

Aircraft Night Flights Restrictions

These restrictions set maximum night noise and aircraft movement limits for the three London Airports (Gatwick, Heathrow and Stansted) during the period 23:30 to 06:00. The present regime of Night Flying restrictions was reviewed in 2017[12] and set until October 2022.

The Government environmental objective was reviewed and updated to 'limit or reduce the number of people significantly affected by aircraft noise at night, including through encouraging the use of quieter aircraft, while maintaining the existing benefits of night flights'.

The Government will measure the achievement against this objective by:

- The area of, and number of people in, the 48dB L_{Aeq} 6.5-hour night contour,
- Sleep disturbance impacts associated with night flights, assessed using WebTAG methodologies[13],
- The average noise of an aircraft (as measured by the average noise Quota Count per aircraft movement over the course of a season),
- The number of aircraft movements in the night quota period

The regulations also established a new aircraft noise category known as a Quota Count[14] (QC) 0.125 category to capture the bulk of aircraft which are currently exempt. The new QC0.125 category will be introduced from October 2018 for aircraft movements generating noise from 81 to 83.9 EPNdB[15]. Aircraft quieter than this will continue to count towards the airports' movement limits but remain QC0.

Airspace Policy

The policy for how UK airspace is designed and how aircraft operate within it was reviewed in 2017[16] to establish a framework for how UK airspace can be improved to cope with predicted future growth in aviation whilst addressing noise, emissions and flight delay issues. During the consultation the Government focussed on the need for an airspace framework which ensured a greater focus on industry and communities working together to find ways to manage noise impacts. To support this the Government implemented a range of proposals including:

- **A new Secretary of State Call in Power** on airspace changes of national importance, providing high level direction and a democratic back-stop on the most significant airspace change decisions;
- **Important changes to aviation noise compensation policy**, to improve fairness and transparency. This includes bringing compensation policy for airspace changes in line with policy on changes to aviation infrastructure and considering locally agreed compensation for increased overflight due to an airspace change;
- **The creation of a Gross value added (GVA)** is the measure of the value of goods and services produced in an area, industry or sector of an economy
- **Independent Commission on Civil Aviation Noise (ICCAN)** – This body will help ensure that the noise impacts of airspace changes are properly considered and give communities a greater stake in noise management. ICCAN will be set up as a new non-departmental public body of the Department for Transport.
- **A new requirement for options analysis in airspace change**, to enable communities to engage with a transparent airspace change process and ensure options such as multiple routes are considered.
- **New metrics and appraisal guidance to assess noise impacts and their impacts** on health and quality of life. This will ensure noise impacts are considered much further away from airports than at present.

To support the delivery of this policy, the UK Civil Aviation Authority issued new guidance for changing UK airspace – CAP1616[17]. This came into effect in January 2018 and the principles are to ensure that it meets modern standards for regulatory decision-making, and is fair, transparent, consistent and proportionate. The process must be impartial, and evidence based and must take account of the needs and interests of all affected stakeholders. Seven stages are defined for carrying out an airspace change with a focus on early engagement with communities to exploring a range of possible options.

This new policy and guidance are designed to support the achievement of the UK Future Airspace Strategy 2011-2030, aligned to Single European Skies and the ICAO GNAP.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how it expects those policies to be applied by local authorities. The framework says that when considering planning applications for developments that could be affected by noise and those which could generate noise, authorities should aim to do the following:

- prevent noise arising because of new developments having a major negative effect on people's health and quality of life;
- keep other negative effects which noise from new developments has on people's health and quality of life to a minimum;
- recognise that developments will often create some noise and a business, to grow, should not have unreasonable restrictions placed upon it because of

[12] See https://www.gov.uk/government/consultations/night-flight-restrictions-at-gatwick-heathrow-and-stansted
[13] As measured down to 45dB L_{Aeq} 6.5-hour using the Department for Transport's WebTAG methodology
[14] There are eight categories of quota count. Each level is double the previous, representing an increase of 3 decibels
[15] Effective perceived noise in decibels (EPNdB) is a measure of the relative loudness of an individual aircraft movement
[16] See https://www.gov.uk/government/publications/uk-airspace-policy-a-framework-for-the-design-and-use-of-airspace
[17] See https://www.caa.co.uk/Commercial-industry/Airspace/Airspace-change/Airspace-Change/

changes in land use that have arisen since their business was established;
- identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

This policy has simplified and replaced much more detailed guidance that was provided in previous national policy on planning and noise in Planning Policy Guidance Note. Sustainable Aviation continue to work closely with the Government to develop more detailed planning guidance for Local Authorities and we welcome this initiative.

Noise Research

In the Government's response on Airspace Policy they acknowledged the evidence from a 2014 Survey of Noise Attitudes[18] which showed that sensitivity to aircraft noise has increased, with the same percentage of people reporting to be highly annoyed at a level of 54dB L_{Aeq} 16-hour as occurred at 57dB L_{Aeq} 16-hour in the past. The research also showed that some adverse effects of annoyance can be seen to occur down to 51dB L_{Aeq}. In acknowledging this the Government stated they will adopt a risk based approach so that airspace decisions are made in line with the latest evidence and consistent with current guidance from the World Health Organisation. This will be include setting a lowest observed adverse effect level (LOAEL)[19] at 51dB L_{Aeq} 16-hour for daytime, and 45dB L_{Aeq} 8-hour at night. The Government expect that these metrics will ensure that the total adverse effects on people can be assessed and airspace options compared.

Further noise research is also expected to be carried out during the period of this Noise Action Plan to improve understanding on health and quality of life outcomes of aircraft noise and how this can be clearly evidenced with frequency-based noise metrics and to better understand how aircraft noise effects on communities in rural and urban areas may vary.

Sustainable Aviation

Launched in 2005, Sustainable Aviation[20] is a long-term strategy for the UK aviation industry. It brings together airlines, airports, manufacturers and air traffic service providers. Its main aim is to make sure the industry can develop sustainably over the long term and we have signed up to the strategy and will continue to play our part in achieving its commitments, particularly those about controlling aircraft noise.

In 2013, Sustainable Aviation launched its' Noise Road-Map and has regularly reported on progress since. The Road Map has been conceived around the four elements of the ICAO's 'balanced approach', adding communication and community engagement. The Road-Map looks at how the aviation industry can manage aircraft noise between now and 2050. It also acts as a toolkit for airports to introduce measures to reduce the effect of noise impact from aircraft operations.

LOCAL

Sustainable Development Plan 2015

Since 2003 the Government has required airport operators to produce master plans which set out their approach to developing the airport. Planning authorities will take these plans into account when preparing regional and local policies and making planning decisions. Our Sustainable Development Plan[21] is the master plan for Stansted Airport and was published in 2015. It is supported by four detailed plans covering community, ground transport, land use and environment.

Our SDP 2015 Environment Plan sets our aim to be a 'responsible steward' of the environment and a commitment to continually improve our environmental performance and minimise the environmental impact of our operations. The chapter on noise in the SDP Environment Plan is consistent with and compliments the current 2013-2018 Noise Action Plan.

Planning policy

We work closely with local planning authorities when they are preparing their local development plans. This supports the balanced approach and helps to make sure that local planning policies are in line with guidance set out in the National Planning Policy Framework.

Such policies can be found in the Uttlesford Local Plan 2005 and in the emerging replacement local plan.

Planning conditions

As a result of planning permission being granted in 2008 for operations to 35mppa a planning condition was set that limits the maximum area of the L_{Aeq} 16-hour contour to 33.9km^2 and requires annual reporting of the forecast contour for the forthcoming year. We also entered into a legal agreement (under S106 of the Town and Country Planning Act 1990) that includes additional noise controls.

Planning applications

The noise contours prepared each year are given to the local planning authority to help them consider planning applications for developments. We monitor applications for developments in areas close to the airport and give the local authority information on noise issues and sound insulation where appropriate.

Aeronautical Information Package (UK AIP)

This provides specific controls for managing aircraft noise at each UK airport, formed because of all the laws and policies discussed. These controls cover aspects such as Continuous Descent Approaches (CDAs), Noise Preferential Routes (NPRs), noise abatement procedures, departure noise limits and the movement of Visual Flight Rules (VFR) traffic restrictions.

A copy of the UK AIP for Stansted Airport, detailing the noise abatement procedures can be found at;

[18] See http://publicapps.caa.co.uk/modalapplication.aspx?appid=11&mode=detail&id=7744
[19] This is the level above which adverse effects on health and quality of life can be detected
[20] See http://www.sustainableaviation.co.uk/
[21] See https://www.stanstedairport.com/about-us/developmentplan/

http://www.ead.eurocontrol.int/pamslight/pdf/4e415453/EG/C/EN/AIP/AD/EG_AD_2_EGSS_en

Stansted Airport Consultative Committee (STACC)

This committee is made up of Local Councillors, County Councillors and local interest groups and a representative from the Department for Transport. Senior staff from Stansted Airport, including the Chief Executive are invited to attend these meetings.

This committee meets quarterly to advise Stansted Airport Limited on:

- Any matters which it may refer to the Committee.
- To consider any questions in connection with the problems of the Airport as they affect the users and communities and organisations represented.
- To make suggestions to the Chief Executive on any matter connected with the administration of the Airport, which could further the interests of passengers, the local community and organisations represented.

In 2011, the Stansted Airport Consultative Committee (STACC) decided to establish three sub groups to enable issues to be discussed with greater focus and in greater detail. One of these groups was the Environmental Issues Group (EIG).

- To consider the impact of the Airport on the local community, the environment and the economy and, where appropriate, to make recommendations to the Committee.
- To consider matters affecting flight tracks, noise, air quality, the conservation and discharge of water, waste, surface transport, bio diversity, archaeology and climate change, and, where appropriate, to make recommendations to the Committee.
- To share ideas and discuss best practice from other airports and organisations.
- To liaise with the Noise and Track Keeping Working Group, ANMAC and, as appropriate, with the Stansted Area Transport Forum.
- To monitor appropriate performance strands of corporate responsibility at the Airport.

In particular the Group is asked to consider matters affecting flight tracks, noise, air quality, the conservation and discharge of water, waste, surface transport, biodiversity, archaeology and climate change and, where appropriate, to make recommendations to the Committee. EIG plays a key role in monitoring the noise impact on the local community and liaises closely with the Airport Management Team and the Noise and Track Keeping Working Group.

More information on this committee can be found at **http://www.stacc.info**

Noise and Track Keeping Working Group (NTKWG)

The NTKWG considers all aspects related to the measurement, monitoring and management of aircraft noise, including the use of aircraft operational procedures and techniques. Whilst it is not a part of the Stansted Airport Consultative Committee (STACC), the group works closely with STACC and has representation from this committee. Technical in nature, the NTKWG provides a forum for detailed consideration and discussion of noise related issues.

The NTKWG meets four times annually, with a programme of meeting dates agreed one year ahead. Meetings are held at Enterprise House, the airport's administrative headquarters.

Membership of the group is at the sole discretion of the Airport. It is intended that the group is informed by a balanced membership that takes expert input from key stakeholders within the aviation industry and those that represent the interests of local communities. Membership will, as appropriate, be drawn from central and local government, national air traffic services, STACC, local community representatives and aircraft operators.

The remit of this group is as follows:

The NTKWG will consider, as appropriate, all matters relating to the measurement, monitoring and management of aircraft noise. This will include (but is not limited to):

- The numbers of complaints received and supporting analysis to determine significant causes of complaint and the most important areas of concern.
- The consistency with which aircraft fly the Airport's preferred routings.
- The consistency with which aircraft employ operating techniques including continuous descent approach.
- The compliance of aircraft operators with the Airport's noise abatement instructions, as published in the UK Aeronautical Information Package.
- The implementation of the Airport's Noise Action Plan and the periodic review and update of the Plan.
- The routing arrangements employed by NATS to control both inbound and departing aircraft, specifically any changes to controlled airspace.
- The operating techniques and procedures employed at other airports and how best practice might be adapted and adopted at Stansted Airport.
- In accordance with the Civil Aviation Act 1982, Stansted Airport is designated by the Government for the purposes of controlling some aspects of aircraft noise, in particular the numbers and types of aircraft that are permitted to fly at night. In areas where Government exercises direct control, the work of the NTKWG will inform the Airport's position and may directly inform the Airport's response to consultations and other relevant communications.

7. NOISE CONTROLS

As a designated airport, the Government sets some of the policy framework which influences how STAL responds to aircraft noise issues. At London Stansted we have a good track record of developing policies and taking action to reduce our effect on the environment.

In the previous section we set out the national policy for aircraft noise. This policy has continued to evolve since the last Noise Action Plan.

In particular, the Government has introduced a new policy aim that seeks to ensure that local communities benefit from the introduction of more modern and quieter aircraft 'as part of a policy of sharing benefits of noise reduction with industry in support of sustainable development'.

Managing and where possible, reducing noise is a long-standing commitment within STAL's corporate social responsibility agenda. Stansted Airport reports progress annually using performance information against key noise indicators.

Our approach is further supported by accreditation in 2005 to the international environmental management standard ISO14001, which includes the management of air noise and we have consistently maintained accreditation to this standard.

To deliver our Noise Strategy and Action Plan we will continue to work collaboratively with airlines and air traffic controllers so that we can effectively influence behaviour and keep our environmental impacts to a minimum. Two recent examples of how this has been accomplished are highlighted in section 8, Airspace Modernisation.

We welcome the current Government's review of aviation strategy and their further exploration of ways to improve the reporting and management of aircraft noise. When estimating where local communities are most likely to be 'significantly affected' by aircraft noise, policy is increasingly giving greater weight to the lower 54dB L_{Aeq} 16-hour contour, rather than the 57dB L_{Aeq} 16-hour contour, which has been used for many years. Given the range of different responses to aircraft noise, policy suggests that considering noise impact at this lower noise level should be part of a broader risk based approach.

These broader policy developments have informed the development of this plan.

> "Our long-term aim is to 'limit and reduce where possible, the number of people affected by noise as a result of the airport's operation and development."

8. AIRSPACE MODERNISATION

Aviation in the UK has grown significantly in the last 40-years with airspace having now become part of our national transport infrastructure and a scarce, but largely invisible resource. Since the 1950s and 1960s when much of our airspace structure was first designed there have been relatively few changes to the airspace structure, with only a few changes and adaptations in response to growing traffic levels, but many departure routes at major airports have remained unchanged for several decades.

At present, upper airspace and the lower airspace surrounding airports is structured around a fixed network of way points that are based on the position of ground navigation aids. This structure creates air traffic system 'choke' points. The busy London Terminal Manoeuvring Area (LTMA) that serves multiple airports, has become extremely complex and contains many intersecting flight paths.

This requires a wholesale redesign to increase capacity and allow aircraft to climb and descend continuously in order to optimise the environmental benefits of reduced noise and emissions, including airborne holding and ground delays.

Since the development of our first NAP in 2011, the first stages of a major re-organisation of the LTMA have begun. In 2016, NATS introduced the first phase of the London Airspace Management Programme (LAMP) which changed the departure route for some operations at London Stansted. Whilst no new routes were created, more aircraft now fly the 'Clacton' departure route and fewer aircraft fly the inefficient 'Detling' route, where aircraft were often held for a period of level flight below 7,000ft. We recognise that this change has broader benefits for the LTMA and was consistent with separate changes introduced at London City Airport. This has created a detrimental effect for some local communities and improvements for others that are no longer frequently overflown.

By making increased use of the capability offered by modern technology, further phases of LAMP will seek to modernise airspace within a growing aviation sector by implementing a systemised and more efficient airspace structure that provides long term benefits and stability, whilst improving the overall safety within the Air Traffic Network. Further phases of airspace modernisation are expected to come to fruition over the next five to seven years. All changes will be consistent with the CAA's updated airspace change procedure, CAP1616. The new CAP1616 process is designed to facilitate early community engagement and to ensure that the views of local communities are central to the change process. We welcome this approach.

Updating Airports' standard arrival and departure routes using modern satellite navigation is necessary for operational reasons. It also offers the flexibility to better manage noise impacts and further improve safety. London Stansted now has experience of these techniques through our Performance Based Navigation project.

Implementing Performance Based Navigation

Since the last revision of this plan, Stansted Airport, in partnership with STACC/EIG, NATS, the CAA and our operators, commenced a trial to further improve the accuracy with which aircraft fly on two of our departure routes, 22 Clacton and 04 Detling. In response to community concerns, particularly for the Hatfield Heath and Hallingbury areas, it was agreed that we would explore options to ensure as many aircraft as possible adhere to the centerline of the NPR, as this leads to aircraft flying directly between the villages of Hatfield Broad Oak and Hatfield Heath and therefore minimises noise intrusion. This led to a trial of state of the art navigational technology called "Required Navigational Performance of 1 Nautical Mile" (RNP1). After engaging the CAA along with a member of STACC, a full operational trial commenced in 2013, initially limited to one operator.

The initial results exceeded expectation and the trial was then expanded to other operators that had regulatory approval from their national regulator to operate RNP1. In 2015, following positive reaction to the trial results and being able to demonstrate what the art of the possible was, we undertook a public consultation to have the new procedures made a permanent option for suitably equipped aircraft. The consultation results showed strong support from all sectors and a subsequent Airspace Change Proposal (ACP) was submitted to the CAA. These two new procedures were formally published in August 2017 and all the trial and consultation material can be found at **http://www.stanstedairport.com/community/local-environmental-impacts/performance-based-navigation/**

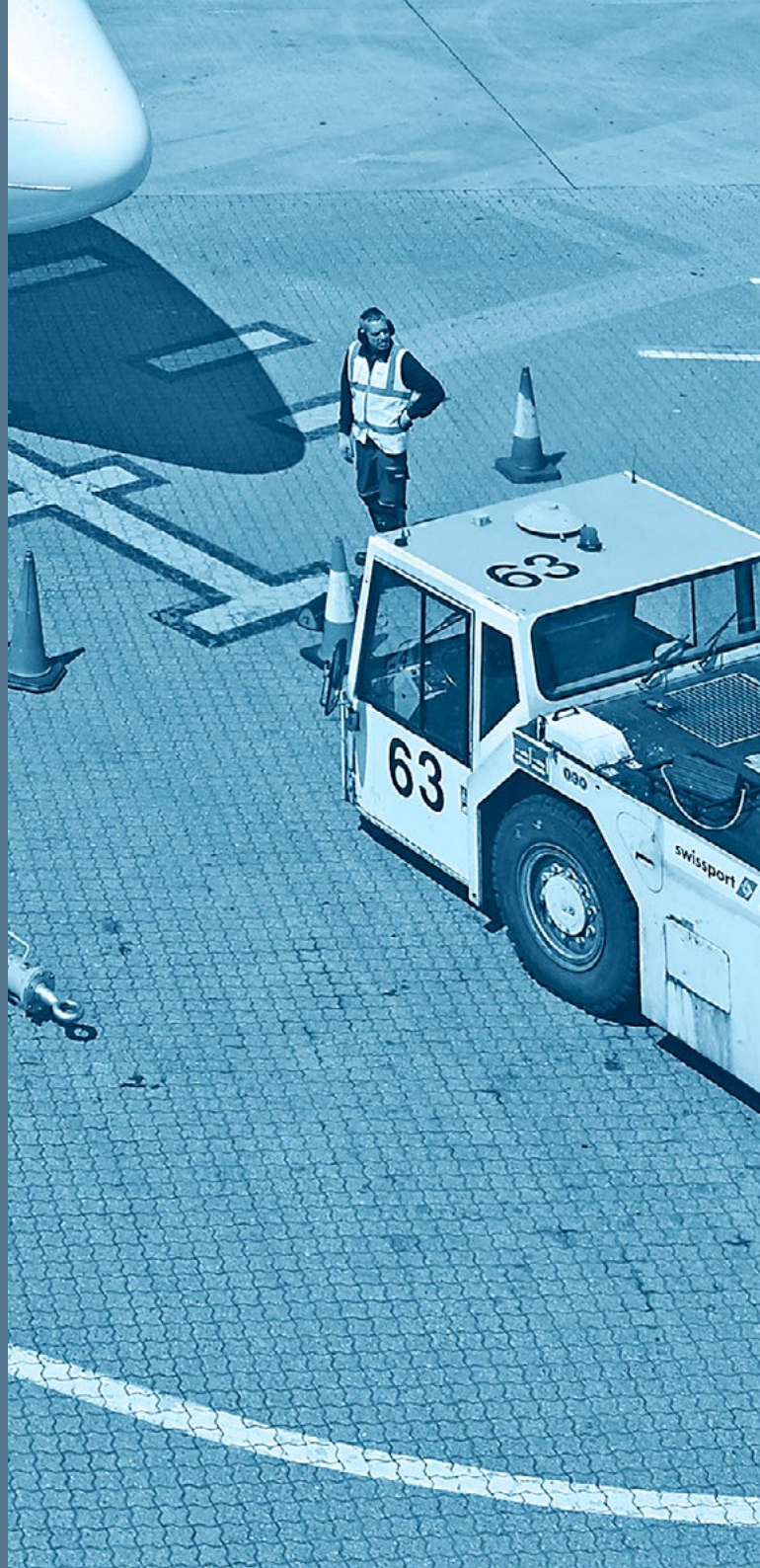
Stansted has been the first UK airport to implement RNP1 departures and along with EIG has been recognised by winning several national and international CSR awards. We will look to implement RNP1 on other departure routes to complement further phases of LAMP and fulfil our regulatory obligations.

Helicopter Noise

The airport has recently undertaken a project to address community concerns relating to helicopter operations, having visited communities that were often overflown at low level by helicopters. In response to community feedback, changes were made to the routing instructions published in the Aeronautical Information Publication (AIP) to highlight sensitive areas that should and could be avoided. To ensure these changes are effective the Airport has subsequently engaged with based operators. Having explored a number of options several changes have been made including upgrading the Noise and Track keeping system to make helicopter operations visible to the system, the establishment and publication of an additional navigation point and VFR charts. We will monitor the success of the revised operational procedures and explore options for other VFR departure routes if appropriate. A copy of our new VFR maps is shown in Appendix G.

9. ARRIVING AIRCRAFT

Unlike aircraft taking-off, where the bulk of the noise is produced by the engines, when an aircraft is on approach, engine noise and the ‘airframe’ both contribute to the overall noise level.



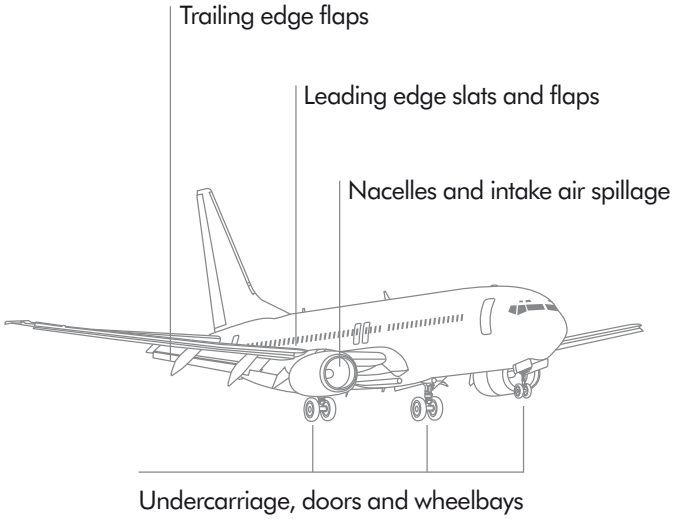
Airframe noise comes mainly from the aircraft's undercarriage and the wing components and is proportionate to the aircraft's speed as it passes through the air. Extending the surface of an aircraft's wing, by deploying slats and flaps, allows the aircraft to fly slower, facilitating a safer landing speed.

Low power/low drag is a technique designed to keep airframe noise on approach to a minimum by making sure that the landing flaps are extended and the aircraft's undercarriage is lowered as late as possible.

This reduces drag and means that less engine power is needed to compensate for that drag. As a result, noise is considerably reduced, both in terms of level and duration. All aircraft approaching Stansted Airport are expected to use low power/low-drag procedures.

Operators will have a minimum distance to touchdown that the aircraft must be fully configured for landing, which equally reduces the need to undertake a go-round procedure – otherwise known as a missed approach.

SOURCE OF AIRCRAFT NOISE ON ARRIVAL



CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP1: low power/low drag	Aircraft approaching the airport are expected to keep noise disturbance to a minimum by using a low power/low drag procedure. We will undertake a survey with our operators and share the results with our Noise and Track Keeping Working Group and EIG. We anticipate this being completed in 2020. This will include reviewing operating instructions following the outcome of the Sustainable Aviation 'Low Noise Arrival' work.	New

Continuous Descent Approach (CDA) is also a technique designed to reduce noise levels from landing aircraft.

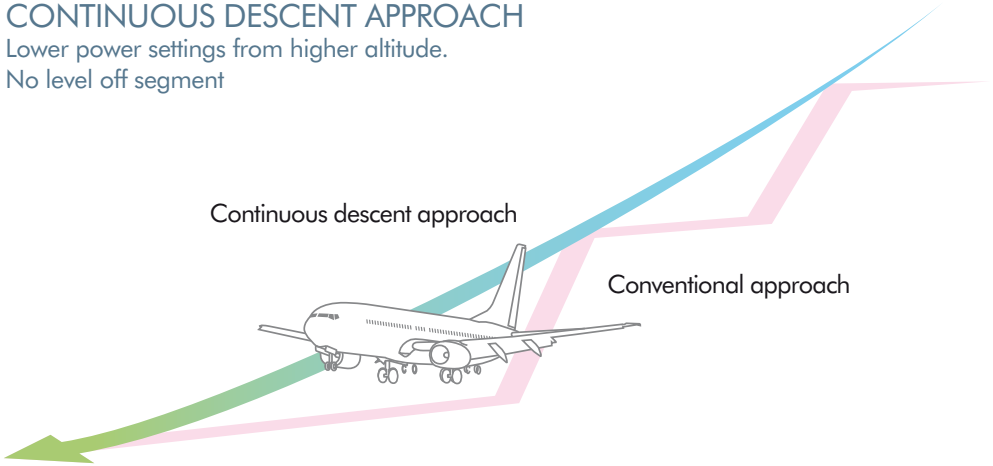
Historically, aircraft land by reducing their altitude in a series of steps towards an airport. For each of these steps there needs to be a period of increased engine thrust to level out the aircraft. With CDA, air traffic controllers give pilots accurate information on the distance to touchdown so they can plan the best possible continuous rate of descent. This means that aircraft stay as high as possible for longer and reduces the need for periods of engine thrust associated with periods of level flight. At London Stansted, current airspace configuration inhibits CDA to runway 04 (approaches from the south-west) and these arriving aircraft are usually forced to fly lower than is optimum and level to maintain safe separation from other airspace users. It is a long-standing objective of London Stansted and our local communities to make the changes to airspace that are necessary to allow the introduction of CDA to runway 04.

Continuous descent approach has been shown to reduce noise, on the ground, from a landing aircraft by up to five decibels and our measurement criteria is from 6,000ft and below.

New arrival techniques such as slightly steeper approaches and 'low noise' arrival trials are beginning to take place at other UK airports. These present opportunities for the airport but may require changes to airspace around the airport to make them possible

CONTINUOUS DESCENT APPROACH

Lower power settings from higher altitude.
No level off segment



CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP2: continuous descent approach (Runway 22)	All aircraft approaching the airport on runway 22 are expected to use continuous descent procedures. In line with commitments made in the Sustainable Aviation Noise Road Map, we will work with our service partners to improve CDA at Stansted Airport. Our target for continuous descent approach procedures on a 24-hour basis for runway 22 will be to achieve better than 94% CDA during the lifetime of this Noise Action Plan.	Retained

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP3: continuous descent approach (Runway 04)	We will promote and seek the introduction of CDA to runway 04 as soon as practicably possible as changes to airspace constraints permit. We will continue to promote CDA to runway 04 which can only be delivered through airspace changes as part of any future LAMP programme.	Retained

Aircraft making their final approach into London Stansted are guided by an instrument landing system (ILS). The ILS gives precise information about the position of the aircraft in relation to the runway. Using ILS means that aircraft follow a very narrow approach path, while they descend at an angle of 3°. We will continue to work with our Sustainable Aviation partners to evaluate the possible introduction of steeper approaches at London Stansted.

The point at which an aircraft intercepts the ILS is known as Joining Point Criteria. To reduce noise disturbance from arriving aircraft using the ILS, aircraft must not descend below 2,000ft before intercepting the ILS glide path during the hours of 06:00 to 23:30.

During the night period 23:30 to 06:00 the joining point criteria changes to a 3,000ft ILS intercept height at a minimum distance of 10nm. There are further instructions for light aircraft detailed in the AIP, these are shown as:

"Where the aircraft approaching Runway 22 or Runway 04 is using the ILS in IMC or VMC it shall not descend below 2,000ft (Stansted QNH) before intercepting the glide path nor thereafter fly below the glide path; and

An aircraft approaching Runway 22 or Runway 04 without assistance from the ILS shall not join the final approach to either runway at a height of less than 1,500ft aal (unless they are propeller-driven aircraft whose MTWA does not exceed 5700 kg when the minimum height shall be 1,000ft aal) and thereafter shall follow a descent path which will not result in its being at any time lower than the height of the approach path normally indicated by the PAPI."

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP4: ILS approach – daytime	Aircraft using the instrument landing system must not descend below 2,000ft before joining the glide path. We will report ILS Joining Point compliance to NATS on monthly basis and share results with our NTKWG.	Retained

As future technology becomes available, we will look to explore options for steeper approaches to reduce the noise impact of arriving aircraft. Our current Instrument Landing System is optimised for a 3-degree approach as this is the suitable for most aircraft types in low visibility conditions (CATIII). Increasing the approach angle can save fuel and emissions, as well as reduce noise. Ground Based Augmentation Systems (GBAS) are expected to become operationally compliant in the next few years, but at present are not. Also, not all aircraft are equipped to utilise a GBAS transceiver, but we also expect these numbers to increase over the coming years with the further introduction of new aircraft types that are already GBAS compliant.

GBAS uses satellite technology to more accurately position aircraft and may in time offer enhanced capability and replace the current ILS.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP5: steeper approaches	We will explore options for GBAS technology and the ability to facilitate a steeper approach angle above 3°.	New

10. ON THE GROUND

We have many regulations in place to reduce ground noise at the airport. These are published in the AIP and cover the use of reverse thrust on landing, engine testing and the use of the aircraft auxiliary power unit (APU).

A series of restrictions are also detailed in our S106 planning obligations and enforced through a series of Directors Notices (DN's). Emerging opportunities to reduce noise from aircraft ground operations are also being explored.

Sustainable Aviation has a code of practice for reducing the environmental impacts of ground operations[22]. This promotes minimising the use of the APU in favour of ground based power and use of reduced engine aircraft taxi. Much of this work offers opportunities to reduce noise as well as emissions. At the time of writing the UK aviation industry is also exploring two areas which give opportunities to reduce ground noise.

- **Working together to improve the aircraft turnaround.** This is a collaborative piece of work, led by MAG, with airport, ground handling, airline and air traffic staff. The aim is to minimise the emissions and noise from aircraft turnarounds.
- **Optimising ground taxi times.** This is again collaborative work between the airport, airlines and air traffic staff to reduce delays, emissions and noise for aircraft whilst taxing to and from the runway.

More efficient taxiing and the subsequent reduction in runway holding delays can contribute significantly to the reduction of ground noise and emissions. The ATC procedure of only arriving at the runway holding point, by delaying the pushback from the departure stand will be enhanced by the introduction of Airport Collaborative Decision Making (A-CDM), optimising the taxi route and reducing delay at the runway hold. We are currently pursuing the implementation of A-CDM.

Aircraft engines can produce huge amounts of thrust. Thrust is used to fly the aircraft in the air and to taxi the aircraft when it is on the ground. With all aircraft engines running, even at very low power settings, the thrust produced is often more than enough to move the aircraft along the ground. Because of this 'surplus' of power, in the right conditions an engine can be turned off while the aircraft is taxiing to and from the runway. Airlines already do this at Stansted Airport, and this has benefits both to local noise and air quality.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP6: reduced-engine taxiing	We will consult with our airline partners to better understand the capabilities of new aircraft/engine types for reduced engine taxi.	Modified

[22] https://www.sustainableaviation.co.uk/goals/noise/

For a period of time immediately before take-off and shortly after landing, an aircraft still needs electrical power to maintain on-board systems and provide ventilation to the cabin. To maintain that power while the main engines are turned off, most modern jet aircraft are fitted with an auxiliary power unit (APU). The APU is a small engine and like all engines, an APU can be noisy and affect air quality.

An alternative to using APUs is to use fixed electrical ground power points (FEGPs). FEGPs provide electrical power to aircraft systems and are available on all our scheduled passenger and cargo aircraft parking stands. When connected they allow the APU to be shutdown. Sometimes when FEGP is unavailable, APUs must be used to maintain power to the aircraft's systems, but we monitor this and carry out periodic checks, especially during the night period.

We have a suite of DN's to enforce these restrictions which stipulate what areas of the Airport, and during what times activities can take place. These include the ground running of rotary and fixed wing aircraft engines, the testing of aircraft engines on stands, the use of Auxiliary Power Units (APU) and the use of Ground Power Units (GPU). These details are recorded, monitored and used when investigating any complaints. A Directors Notice enables STAL to take an enforceable course of action if the requirements set out are breached and this is set by the Airport Bylaws.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP7: APU use	We will continue to monitor the use of FEGP and the non-essential use of auxiliary power units and will maintain and update our DN detailing the use of APUs/FEGP as appropriate. We will undertake survey in 2021 and share the results with our NTKWG and EIG.	Retained

Aircraft maintenance is an important part of the work that goes on at the airport. After maintenance work has been carried out, engines are often tested before the aircraft is used. To limit the noise effects of engine testing, we have a specific engine test facility.

Aircraft engines tested at anything above idle power are required to be carried out at our engine test facility and there are specific times detailed in our DNs that this can occur.

Aircraft maintenance is usually undertaken on parking stands each night and engine testing is then permitted, but this is limited to a 3-minute test at idle engine power only.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP8: engine testing	We will maintain and update our suite of DNs controlling the ground noise associated with Fixed Wing and Rotary Wing Aircraft as appropriate.	Retained


MAG
London Stansted
Airport
"We have a suite of DNs to control ground noise and engine testing at the airport."

11. DEPARTING AIRCRAFT

The evolution of aircraft technology, particularly engine design, has significantly reduced the level of noise generated by aircraft immediately after take-off. Noise on departure at low level is considered the noisiest aspect of aviation for our neighbouring communities.

There are ways to reduce the level of departure noise heard by people near the airport, they are mainly attributed to the lateral and vertical position of the aircraft.

As a designated airport, the Government set Noise Preferential Routes (NPRs) that surround our Standard Instrument Departure Routes, which extend 1.5km either side, creating a corridor that is 3km wide. Changes in the NPR structure are rare and maintaining a stable and predictable set of routes is regarded as important, so that people may know where aircraft noise will be experienced. The frequency with which each runway direction is used will vary, and is an operational decision for ATC taken in response to wind direction and strength. The NPR an aircraft elects to fly will be influenced by the final destination of individual flights through an operators Flight Planning Team. A map illustrating the current NPRs is provided in Appendix E.

Aircraft departing from Stansted Airport are required to follow specific paths called noise preferential routes (NPRs) up to an altitude of 4,000ft, unless directed otherwise by air traffic control (ATC). Stansted's NPRs were designed to avoid overflight of built-up areas where possible. They lead from the take-off runway to the main UK air traffic routes, and form the first part of the Standard Instrument Departure routes (SIDs).

At Stansted Airport, there are three NPRs at each end of the runway namely Clacton (CLN), Detling (DET) and Buzad (BZD). Associated with each NPR is a swathe of air space extending 1.5km each side of the nominal NPR centerline, within which aircraft are considered to be flying on track. This takes account of various factors that affect track-keeping including tolerances in navigational equipment, type and weight of aircraft, and weather conditions.

After reaching 4,000ft at any point along an NPR, an aircraft may be turned off the route by ATC onto a more direct heading – a practice known as 'vectoring'. ATC may also vector aircraft from NPRs below 4,000ft for safety reasons, including certain weather conditions, for example to avoid storms. ATC may vector aircraft on the BZD departure routes at 3,000ft above sea level (QNH) during the hours of 06:00 to 23:30, outside of these times the 4,000ft restriction applies.

Stansted Airport has a long-standing target that 95% of all departing aircraft should remain within each designated NPR. To encourage greater adherence to the NPRs and to avoid the over-flight of sensitive areas we can fine aircraft that fly "persistently" outside the NPRs and direct any resulting funds to the Stansted Airport Community Fund. STAL has raised the fine levels for track keeping during the daytime and doubled the fine level for night time departures that flagrantly or persistently fly off-track.

We monitor all departing aircraft for a series of noise abatement controls including track keeping with our NPRs. Through working with our airlines and air traffic controllers, over many years we have increased the number of flights following NPRs. In 2016 our track keeping performance was 99.29% and the number of flights following our NPRs has become an important performance indicator for us. We routinely report performance against this indicator to airlines, air traffic control, NTKWG and our Consultative Committee.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP9: 'off-track' departures	We have a target of 95% of track keeping compliance for each individual SID. We have an overall track keeping target of 99% and will maintain this throughout this plan. We will report quarterly to our NTKWG the number of 'off-track' departures and the overall track keeping performance.	Modified

We are proud of our track keeping performance. To encourage greater adherence to the NPRs and to avoid the over-flight of sensitive areas we fine aircraft that fly "persistently" outside the NPRs and direct all funds to the Stansted Airport Community Fund. STAL has previously raised the fine levels for track keeping during the daytime and doubled the fine level for night time departures that flagrantly or persistently fly off-track. Ongoing, we are committed to reviewing these fine levels again in future years as we believe this has contributed to the high levels of track keeping compliance that we currently see.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP10: 'off-track' surcharge	We have a system of financial penalties for flights where airlines flagrantly or persistently fail to keep on the NPRs. The surcharges are as follows: During the day – £750 per occasion and during the night – £1,000 per occasion. We are committed to reviewing these penalty levels during this plan.	Retained

As a designated airport, the UK Government set the departure noise limit for daytime operations as measured at any of our fixed noise monitors. We currently fine all aircraft that exceed the daytime departure noise limit of 94dB(A) £1,000 for each infringement up to 3dB over this limit. Over 3dB infringements are currently fined an additional £250 for each dB or part thereof. Departure noise is measured at our 8 fixed noise monitors, 4 at each end of the runway positioned at 6.5km form the start of roll of the aircraft.

The daytime departure noise limit has remained unchanged for many years and in light of a progressive move towards quieter aircraft types we now have the opportunity to reduce this level. We will approach Government during this noise action plan and seek their approval for lowering the departure noise limit. Once this has been reduced we will then review the level of surcharge to promote the use of the quietest possible fleet.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP11: departure noise limit	We will seek approval from the UK Government to lower the daytime departure noise limit in 2019.	New
NAP12: departure noise limit – surcharge	We will review our departure noise limit surcharge following any reduction in the departure noise limit.	Modified

The Noise Abatement procedures section of the AIP for Stansted Airport details areas that are to be avoided where possible. During the lifetime of our noise action plan(s) we have previously committed to implementing monitoring of the overflights of these 'no-fly' zones.

We will continue to report performance to our NTKWG on a quarterly basis.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP13: AIP noise abatement compliance	We will continue to report the overflight of the AIP stated 'no- fly' zones as detailed in the AIP, including Sawbridgeworth, Stansted Mountfitchet, St Elizabeth's and Bishops Stortford and report quarterly to our NTKWG.	Retained

Within the UK AIP, after take-off of an aircraft it states that it shall be operated in such a way that it is at a height of not less than 1,000ft above aerodrome level (aal) at 6.5km from the

point an aircraft starts its take off roll. We will continue to work with our airlines to ensure this is achieved. This rule rarely comes into effect because of the modern fleet of aircraft we have operating at London Stansted, but we will continue to monitor and report as per the AIP criteria and we will continue to work with our airlines to ensure this is achieved.

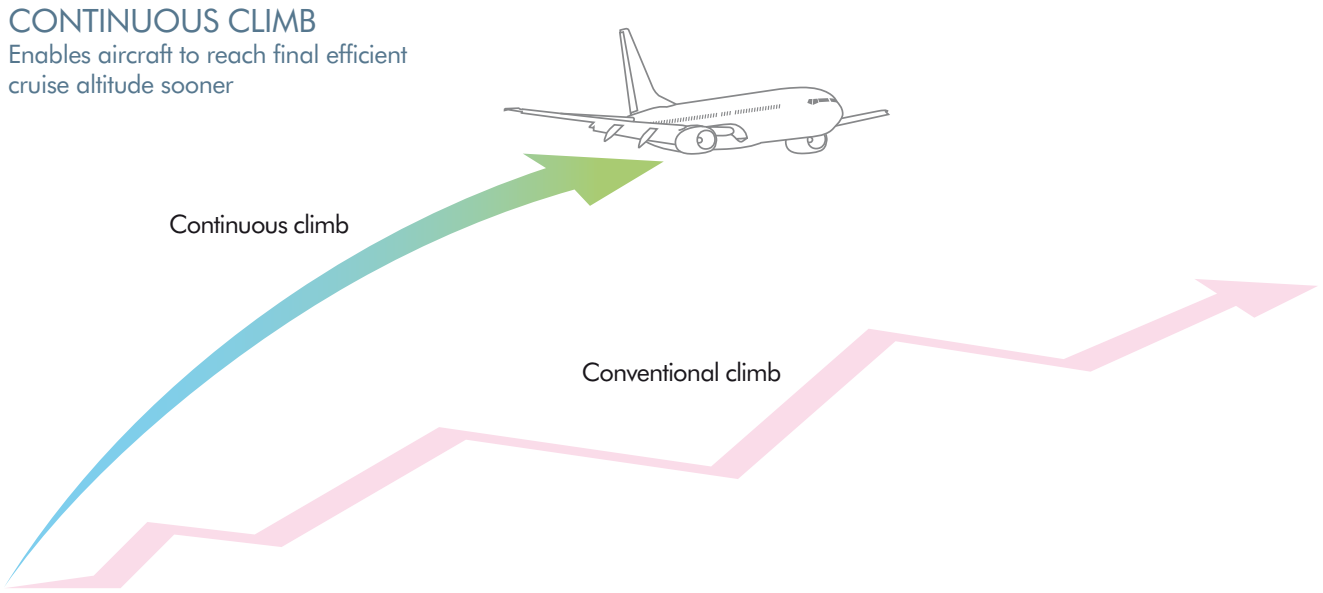
CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP14: 1,000ft rule	We will continue to report the compliance against the 1,000ft monitoring criteria in our quarterly NTKWG reports. We will review through ANMAC TWG if there is a more appropriate measure to adopt as a Noise Abatement Procedure.	Retained

In recent years aircraft flight and navigation systems have become increasingly sophisticated with advances in aircraft avionics far exceeding the development of airspace that these aircraft use. In a similar way to today's cars, aircraft now make increased use of satellite information for navigation and have computers constantly monitoring and optimising the engines and flight controls. Air traffic control systems have also become more sophisticated with improved accuracy of radar information and automated communication.

One area of opportunity is Continuous Climb Operations (CCO).

CCOs are designed to enable aircraft to keep climbing after take-off until they reach their cruise altitude with an aim to make the aircraft higher, quicker and therefore use less fuel and reduce noise.

As previously mentioned, the UK Government define the Noise Abatement Procedures for London Stansted as published in the AIP and although we currently monitor and report CCO to our NTKWG there is no set criteria for monitoring.



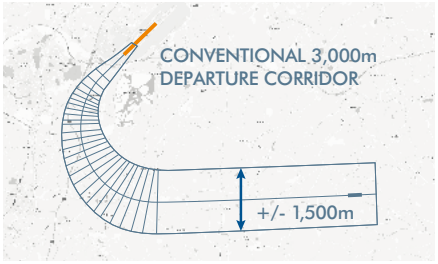
CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP15: continuous climb operations	We seek permission from Government to add monitoring criteria to the UK AIP and report against this criteria by departure route in 2019.	New

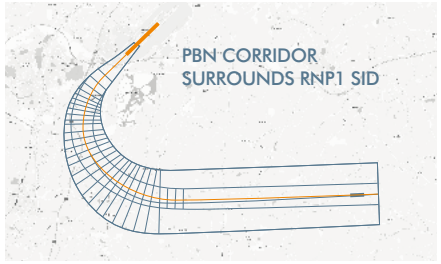
Performance Based Navigation (PBN) also allows us to refine our departure tracks further within our NPRs by using precise satellite navigation points along a route for a suitably equipped aircraft to follow, significantly improving the accuracy with which the route is flown by all aircraft that use this system. We have previously explored PBN options and implemented two of these departure procedures on runway 22 Clacton and 04 Detling departure routes. The results have dramatically improved the departure track keeping accuracy within some of our existing NPRs.

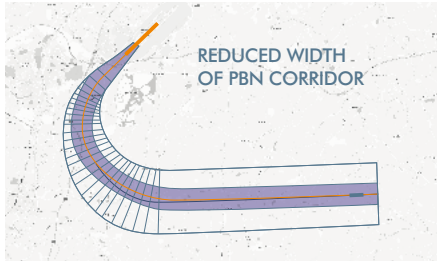
Following this success and aligned with further phases of LAMP for airspace modernisation, we will look to implement this technology on our other departure routes. This requires a broader modernisation of airspace and to do this we will follow the new CAP1616 Airspace Design and Community Engagement Guidance.

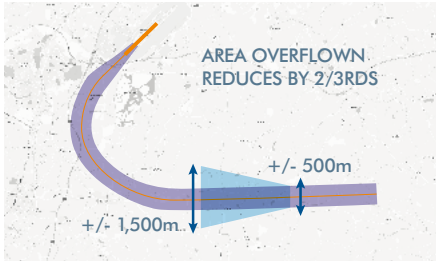
CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP16: implementing PBN	In consultation with key stakeholders and our local communities we will seek to implement PBN on our remaining departure routes.	New

In partnership with our NTKWG and EIG there was a strong desire to adapt our track keeping reporting to properly reflect these new levels of track keeping accuracy afforded by PBN. Our existing departure NPRs are 3km wide, +/- 1,500m of the conventional departure route. Over the last year, collectively we have developed and refined a PBN reporting metric. Our reporting now includes a new departure swathe for RNP1 departures that has reduced by 2/3rds to just +/- 500m from the designed RNP1 route.









CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP17: reporting PBN	We will continue to report against our agreed +/-500m swathe and report quarterly to our NTKWG. We will apply the same reporting metric to any newly implemented PBN departure routes.	New

12. NIGHT NOISE

The night restrictions regime was originally introduced in 2006/7 at London Stansted following extensive consultation. The restrictions are set by the DfT and are detailed in a statutory notice published each season in the supplement to the UK AIP.

The latest set of Night Flying restrictions were consulted upon and then published in 2017, commencing from the following winter season, Winter 2017/18.

The restrictions cover a five year period and take account of the Government's stated environmental objectives and comments received during consultation. As summarised below, the new night regime has made some significant changes.

Night period and night quota period

The 'night period' is 23:00 to 07:00 hours (local time) during which period the noisiest types of aircraft classified with a Quota Count/8 (QC) and QC/16 may not be scheduled to land or take-off. Aircraft classified in QC group 4 are also subject to a mandatory scheduling ban in the night quota period. From 23:30 to 06:00 the ('night quota period') aircraft movements are restricted by a movement limit with noise quotas as a supplementary measure. These are set for each season.

The Quota Count System

Aircraft are classified separately for take-off and landing. Schedules showing the QC classification of individual aircraft are published twice a year by the CAA in an AIP Supplement.

(Previously) Exempt aircraft

Jet, propeller and rotary wing aircraft were previously exempt from the movements limits and noise quotas if their noise certification data are less than 84 EPNdB. (Effective Perceived Noise measured in Decibels) they could operate at night, without counting against either the QC or movement limit.

In the new regime, the Government has sought to address community uncertainty about the overall numbers of night movements from these previously exempt aircraft by including them within the limits that are imposed. They will now be counted against the movement limit irrespective of their associated QC classification.

Additionally, the Government has introduced a new lower QC band of 0.125. Many of the new aircraft being introduced, such as the Airbus NEO, now fall into this new category, where previously they would have been classified as QCO and would therefore have been exempted from the limits. We also see the QC ratings of aircraft steadily falling as their noise levels reduce. We expect our biggest operator Ryanair to progressively transition to a new fleet of Boeing MAXs, which are likely to be QC0.25 on arrival and departure, replacing the 737-800 models that they fly currently which are QC0.5 on departure and QC0.5 on arrival.

Aircraft are now assigned quota count (QC) classifications as follows

CERTIFIED NOISE LEVEL (EPNDB)	QUOTA COUNT
Above 101.9	QC16
99 to 101.9	QC8
96 to 98.9	QC4
93 to 95.9	QC2
90 to 92.9	QC1
87 to 89.9	QC0.5
84 to 86.9	QC0.25
81 to 83.9	QC0.125
80.9 and below	QC0

To account for the changes in this new system, the Government have added the number of previously exempt movements (QC0) to the seasonal allocation for London Stansted. This does not increase the total numbers of night movements that have or will operate, but provides greater clarity on the types of aircraft operating and certainty over the overall numbers.

There has been no adjustment to the amount of QC points available to ensure there is no increase in night noise. The average QC points per aircraft movement available each season has reduced with the new restrictions. To ensure that we remain within these tighter quota limits, we have agreed with our Airport Scheduling Committee that there should be no increase in the number of noisier, QC2 aircraft operating at Stansted. We propose to incorporate this change in this plan with the addition of a new NAP.

Movement limits and noise quotas at Stansted

The summer season is the period of British Summer Time in any one year as fixed by or under the Summer Time Act 1972 (as amended by Statutory Instrument (S.I) 2002/262, the definition of British Summer Time). The winter season is the period between the end of British Summer Time in one year and the start of British Summer Time in the next. The change to British Summer Time occurs at 01:00 Greenwich Mean Time (Universal Co-ordinated Time).

End of season flexibility

The Government's detailed rules specify that within each season there is a degree of flexibility. This flexibility margin is 10%; i.e. up to 10% of the current season's movements limit may be carried over if sufficient amount of the limit is unused and up to 10% of the next season's movements limit may be anticipated in the event of an overrun. Any carryover or overrun greater than 10% is penalised in the following season at double the amount of the excess. The same general arrangements apply to the noise quotas.

To summarise our permitted operations, these are:

- Any aircraft which has a QC value of 4, 8, or 16 may not be scheduled to take off or land during the night quota period; (23:30 to 06:00).
- Any aircraft which has a QC value of 8 or 16 may not take off or land during the night period; (23:00 to 07:00).
- Any aircraft with a QC value of 2 can only schedule to operate at night if it is part of an historic operation by an existing airline.

Dispensations

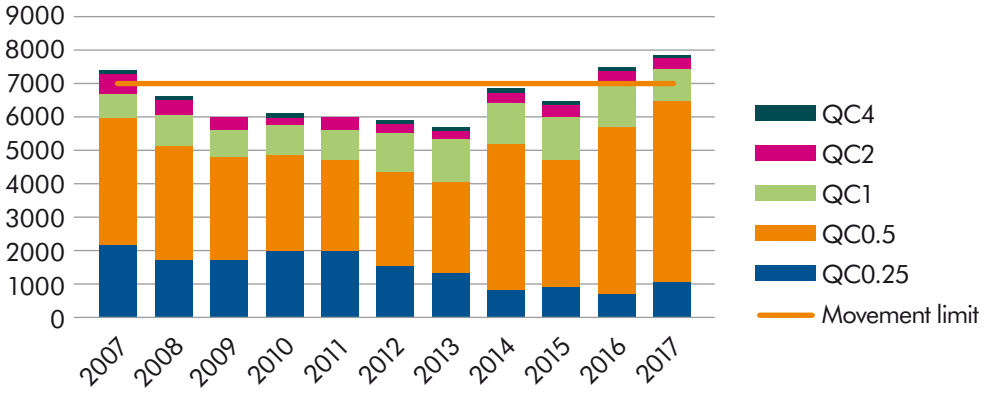
The Secretary of State has the power to specify circumstances in which movements may be disregarded from the night restrictions by an Airport manager and the power to authorise that specific flights should be disregarded. The Airport companies may disregard night movements in the following exceptional circumstances:

- Delays to aircraft which are likely to lead to serious congestion at the aerodrome or serious hardship or suffering to passengers or animals
- Delays to aircraft resulting from widespread and prolonged disruption of air traffic.

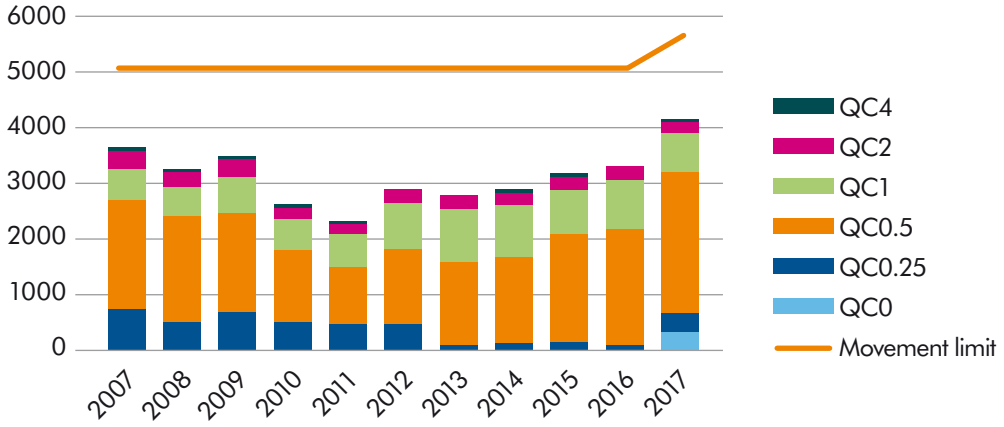
Monitoring of night noise

Stansted Airport provides night noise information to its Airport Consultative Committee, via the NTKWG, and on a weekly basis to the Department for Transport on movements, noise quotas, details of any dispensations or exemptions granted, and reports on any movements by QC/8 and QC/16 aircraft during the night period.

SUMMER NIGHT OPERATIONS BY QC BAND



WINTER NIGHT OPERATIONS BY QC BAND
NOW COUNTING QC0



CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP18: night noise movements and quota	We will continue to administer the DfT night restrictions regime and ensure that the number of operations and noise quota remains within the limits prescribed. We will report data quarterly to our NTKWG	Retained

We recognise that night operations can be one of the more disturbing aspects of the airport operation for our local communities. To ensure that we continue to operate within the limits imposed by the Government and as part of our ongoing commitment to limit and reduce noise where possible, we will not permit new operations by noisier QC2 aircraft at night. QC2 rated aircraft are the noisiest that can be scheduled to operate as part of our night noise restrictions. We have a limited number operating at London Stansted at present, but we do not wish to see the numbers rise above those that are currently permitted. These aircraft have historic rights to their departure slots, but we will not permit any new QC2 slots during the core night period.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP19: QC2 operations	We will not permit any scheduled QC2 operations that do not hold historic rights to the slot during the core night period.	New

The various departure noise limits at Stansted, for day, night and shoulder periods, are set by the UK Government as part of the airports designated status.

We are committed to reducing aircraft noise and the departure noise limits and as such we will seek approval from the DfT to reduce these limits. We have previously stated that we will seek to reduce the departure noise limit for daytime operations (07:00 to 23:00). At present, either side of the daytime, there are 'shoulder' periods as detailed below.

DEFINITION	TIME PERIOD	DEPARTURE NOISE LIMIT
Morning Shoulder Period	06:00 to 06:59	89dB(A)
Daytime	07:00 to 22:59	94dB(A)
Night Shoulder Period	23:00 to 23:29	89dB(A)
Core Night	23:30 to 05:59	87dB(A)

We will seek to simplify the departure noise limit system into 2 noise limits, the current 16-hour daytime limit and merging the other 3 limits into a single 8-hour night limit. In our last noise action plan, we raised the surcharge level for aircraft that exceed the departure noise limits and implemented a tiered surcharge level for the worst exceedances.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP20: departure noise limit	We will seek approval from the UK Government to lower the night time departure noise limit in 2019.	New
NAP21: departure noise limit – simplify	We will seek approval from the UK Government to replace the current departure noise system with a limit for daytime and night time departures in 2019.	New
NAP22: night noise surcharge	Once we have implemented our revised noise limits and associated time periods, we will review our night noise limit surcharge.	Retained

As described earlier in Section 9 – Arriving Aircraft, aircraft making their final approach into London Stansted are guided by an instrument landing system (ILS). The ILS gives precise information about the position of the aircraft in relation to the runway.

The point at which an aircraft intercepts the ILS is known as Joining Point Criteria.

During the night period 23:30 to 06:00 the joining point criteria is a 3,000ft ILS intercept height at a minimum distance of 10nm.

The ILS joining point criteria are detailed by the Government. As airspace is modernised we will review how appropriate this night-time joining point criteria is, especially relating to runway 04.

Also, airspace constraints do not permit the operation of CDA to runway 04, however, NATS recently have committed to improving runway 04 CDA's during the core night period 23:30 to 06:00 when airspace is less utilised and restricted.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP23 – ILS approach – night-time	Aircraft using the instrument landing system must not descend below 3,000 feet before joining the glide path or join within 10nm of touchdown. We will continue report ILS Joining Point night time compliance to NATS on monthly basis and report to our NTKWG.	Retained
NAP24: continuous descent approach (Runway 04)	We recently agreed a 65% target for runway 04 core night (23:30 – 06:00) CDA's with NATS through our NTKWG. We will publish results on a quarterly basis against our 04 CDA criteria and report them to NATS and the NTKWG.	New

MAG
London Stansted
Airport

"A night restrictions regime was originally introduced by London Stansted Airport in 2006/7."

13. PLANNING, MITIGATION AND COMPENSATION SCHEMES

To share information, STAL has quarterly meetings with the Local Planning Authorities that are in close proximity to the airport.

Other developments in surrounding Counties and Districts are discussed where they may be affected by the Airport and aircraft noise. If it is then felt relevant, both the airport's Planning and Safeguarding teams will respond to any planning application to highlight noise and other airport related issues. This is also providing the airport with the opportunity to discuss the airport's forecast and actual noise contours and to provide an update on aerodrome safeguarding arrangements as appropriate.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP25: sound insulation grant scheme	We will engage with the local planning authorities to ensure awareness of aircraft operations is considered in the development of sensitive land use, via the quarterly Local Authority liaison meeting.	Retained
NAP26: forecast noise contours	We will commission forecast L_{Aeq} contours for air noise annually in line with our current planning regulations.	Retained
NAP27: annual noise contours	We will review the annual L_{Aeq} contours as produced by the DfT with Uttlesford District Council and agree upon actions arising	Retained

When aircraft are close to the airport, our options to reduce the effects of aircraft noise for people, by following the actions discussed so far, become more limited. In this case, we have developed a number of mitigation actions to compensate for the noise. These cover a range of options from the installation of noise insulation for those buildings most affected by noise to funding support for local community projects.

The principal mitigation measure for aircraft noise impacts is the provision of acoustic insulation for properties. Our current sound insulation scheme includes provision to:

- Offer households subject to high levels of noise (69dB(A) L_{Aeq} or more) assistance with the costs of relocating; and
- Offer acoustic insulation (applied to residential properties) to other noise-sensitive buildings, such as schools and hospitals, exposed to medium to high levels of noise (63dB(A) L_{eq} or more).

When our Noise Action Plan was first published in 2011, of the 1,044 qualifying properties for noise insulation, 517 properties (c.50%) have taken up the scheme and STAL has provided in excess of £1.4 million of noise insulation since 2004. This has now increased to over 660 properties with in excess of £1.8 million invested.

With the forecast growth of the Airport beyond our current planning permission (35mppa) we believe it is appropriate for the provisions of our current sound insulation grant scheme to be extended to offer support to those impacted by lower noise levels and to increase the level of financial support that we offer.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP28: sound insulation grant scheme	We will continue to provide financial assistance for insulation to those most impacted by aircraft noise, our Residential Noise Insulation Scheme will be consistent with any obligations we have agreed with Uttlesford District Council.	Retained

Wake Vortex are circulating currents of air caused by moving aircraft. They are created by all aircraft, whilst most are broken up by the natural flow of air before they reach the ground, occasionally they can reach building roof level. In some cases, this can cause movement or slippage to tiles if the property is in extremely close proximity to the airport boundary and near the end of the runways. These occurrences are very rare at Stansted Airport. We have procedures in place to assess and rectify any damage that may have been caused by Stansted operations.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP29: Vortex damage repair scheme	We will continue to provide a vortex-damage repair scheme to repair roofs that have been damaged by vortexes caused by aircraft.	Retained

We will continue to donate all the money we raise as a result of our environmental penalties to the Stansted Airport Community Trust Fund. It awards grants to local groups to support community, social or environmental projects. The trust concentrates on the areas most affected by aircraft.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP30: Community trust fund	We will donate all the money we raise as a result of our environmental penalties to the Stansted Airport Community Trust Fund.	Retained

MAG London Stansted Airport

"London Stansted Airport has quarterly meetings with the Local Planning Authorities who remain a valuable mechanism for awareness of airport related activities."

14. CONTINUOUS IMPROVEMENT, MONITORING AND REPORTING

Our Airport Noise and Operations Monitoring System (ANOMS) has continued to develop as have the ways we use the system and report from it. The system has 8 fixed noise monitors and an additional 2 mobile noise monitors that can be deployed in local communities to ascertain the noise impacts of Stansted Operations.

The system is able to monitor compliance with our AIP published noise abatement requirements including noise infringements, 1,000ft infringements, aircraft that did not achieve Continuous Descent Approach and aircraft that did not achieve Continuous Climb on departure.

We will continue to develop our ability to monitor and report on aircraft noise and we are committed to improving the ways in which we share that information with others.

As we review and develop our noise control policies as part of this revised noise action plan, we also need to monitor and report on how effective our procedures are. Stansted Airport has a track record of continually reviewing, improving and introducing new activities to mitigate the impact of noise. Some recent examples of this have been:

RNP1 Departures

Since the last publication of the Noise Action Plan, when RNP1 departures at London Stansted were a trial with limited numbers of operations, the procedures have now been published and made available for all operators that are suitably equipped to fly them. Following the extensive trial over a number of years and the publication of a trial report, London Stansted consulted its local communities near those departure routes to gather feedback as to whether, or not, those communities wanted us to introduce the procedures on a permanent basis. The EIG have been strong supporters of RNP1 implementation and we welcome their collaborative support during this extensive process.

The public consultation, which exceeded the requirements of the CAAs policy, attracted national media coverage as RNP1 departures at London Stansted was a first for any UK airport. The consultation also showed strong support for implementation. Stansted subsequently submitted an Airspace Change Proposal (ACP) to the CAA, which was approved and fully implemented in August 2017. Despite the very low numbers of operators able to fly RNP1 initially, we now have all our major operators able to fly RNP1 and the numbers of aircraft equipped is now more than 90%. Our monitoring and reporting has evolved because of this implementation and we now have an agreed set of monitoring criteria.

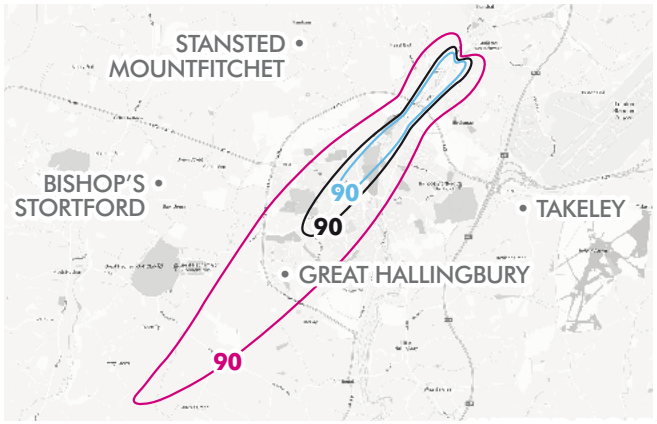
Helicopter Operations

The airport has recently undertaken a project to address community concerns relating to Helicopter operations. Having previously visited communities that were often overflown at low level by Helicopters that could potentially be avoided, and number of changes were made to the Aeronautical Information Publication (AIP) to highlight the areas to be avoided. For a short period, this was successful, but community concerns were still apparent, so further action was needed. To fully understand the impact of helicopter operations our radar feed to our ANOMS system was replaced and now extends to all operations within 40nm radius of London Stansted.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP31: helicopter VFR routes	We will monitor the effectiveness of our new helicopter routeing and report periodically to the NTKWG.	New

Our fleet of aircraft is one of the most modern in Europe, with many of our operators investing billions in the latest available aircraft which are much quieter and more fuel efficient, such as the Airbus Neo and the Boeing MAX. It is important to us that these aircraft are introduced at London Stansted to maintain the trend in noise reduction.

The evolution of aircraft as shown in the image reduces noise progressively each time a new model is introduced. The 90dB SEL footprint of a departing Boeing 737-200 operating 20-years ago is shown by the red line. The current Boeing 737-800 fleet, for the same 90dB SEL and reduces further still with the introduction of the Boeing 737-MAX. This reduction in noise footprint has been achieved in a little over 20-years and is in excess of 89%.



90dB SEL FOOTPRINT

- Boeing 737-200
- Boeing 737-800
- Boeing 737-MAX

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP32: differential landing charge	We incentivise Chapter 4 aircraft when introducing new business to Stansted Airport by offering a 40% discount in airport landing charges compared to that of a Chapter 3 High aircraft and review this figure periodically.	Retained

Since our first league table was developed it has changed little and is reporting against the four main AIP noise abatement targets, Departure Noise, 1,000ft, CDA and track keeping. During the lifetime of this plan we wish to develop this report further to include other metrics as appropriate.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP33: airline league table	We will continue to produce an airline league table based on noise abatement criteria and publish this on an annual basis. We will consult with our NTKWG and refine the report and metrics as necessary.	Modified

Our noise management system is independently audited annually as part of our annual CSR report. The data provided for the report is subject to scrutiny by independent third-party auditors and covers areas of noise and track keeping. Additionally, the airport has maintained its ISO14001 accreditation and as part of this our noise management system is subject to periodic audit. This provides assurance that any data produced is verified and reliable.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP34: independent audit	There will be an annual audit of noise management system by independent auditors.	Retained

The DfTs Aircraft Noise Management Advisory Committee (ANMAC) has formed a Technical Working Group (TWG), consisting of industry experts, airports, airlines, the CAA and DfT. The work undertaken by the technical working group is led by the CAA's Environmental Research and Consultancy Department (ERCD) and looks into the technical aspects of noise management and operational techniques and reports as directed. These reports are published as CAP documents are prove an invaluable source of information relating to environmental best practice. Stansted Airport is part of ANMAC and ANMAG TWG and this offers forum to share expertise and raise issues as appropriate.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP35: ANMAC	In partnership with our NTKWG and EIG we will continue to present issues and facilitate debate with ANMAC and will implement any initiatives as agreed through that forum.	Retained

The Airport produces a quarterly flight evaluation unit report that is presented to the Noise and Track Keeping working group. This report, now published on the airport website has steadily evolved over recent years and now contains detailed information relating to;

- CDA by time period and CDA to runway 04 (core night)
- Track Keeping by departure route and PBN track keeping
- Departure Noise at 2 of our fixed monitors
- 1,000ft criteria
- AIP no fly zones
- Continuous Climb
- Night Movements
- Operations Trends

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP36: data reporting	We will continue to produce a detailed quarterly FEU report and publish it on our website. We will adapt the report as requested by the members of NTKWG and include additional information as appropriate.	New

We accept that L_{Aeq} or L_{den} noise contours are not easily understood by non-experts and that whilst they are a helpful and legitimate way to measure noise they do not present the whole picture. To add to people's understanding of the noise climate around our airport, we committed to developing and publishing additional noise metrics. In collaboration with the EIG and as part of their work program, it was decided to include 'Number Above' contour maps. By showing the number of times aircraft noise was louder than a given level, these contours give greater weight to frequency of operations and as such they will provide useful additional information.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP37: noise contours	We will continue to publish annual 'Number Above' contours within our suite of annual noise contours.	Retained

We also publish our flight-path maps biannually showing detailed arrival and departure tracks into and out of London Stansted and the numbers or aircraft flying them. The maps are produced for each runway end as the tracks can be markedly different and the associated aircraft noise experienced depending on your location. These maps are produced independently by the Civil Aviation Authority.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP38: arrival and departure maps	We will continue to publish detailed arrival and departure maps on a biannual basis.	Retained

London Stansted has a long established community noise monitoring program. This involves siting one of our mobile noise monitors in a community location that is usually further away from the airport than our fixed noise monitors. The locations of community noise monitoring are discussed at our NTKWG, where feedback from complaints, local residents and any contact though the Environmental Health Officers, who are members of the NTKWG, or directly to the airport. The reports generated from the data gathered are prepared independently, the report published on the airport website and sent to the local community where the monitoring was undertaken. The monitoring period is usually during the peak summer noise contour season, mid-June to mid-September and consists of one or two locations per year.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP39: community noise monitoring	We will maintain our community noise monitoring program and continue to seek feedback as to appropriate locations for future monitoring.	Retained

15. EFFECTIVE COMMUNICATION

We pride ourselves on being responsible considerate members of our local community and are committed to supporting and listening to local residents and other stakeholders. We are delighted to be one of only a handful of UK companies to have been awarded the prestigious Business in the Community 'Community Mark' excellence standard in recognition of our work to engage local stakeholders and address community needs. We fully recognise the importance of carefully listening and discussing any noise concerns with our stakeholders.

We believe that supporting local and regional groups and charities is important to our long-term success. In 2015 we published our Community Plan as part of our Sustainable Development Plan[23]. The plan sets out in detail where we focus our Community Relations activity to support the future growth and development of the airport.

In addition to meeting representatives from parish councillors to Members of Parliament, the airport holds regular community outreach events across the local area and publishes news on our work via the airport website.

Where individuals are specifically disturbed by noise from airport operations, we have invested in a dedicated noise complaint system where every complaint is recorded and investigated. This data is regularly with the Noise and Track Keeping Working Group which includes members of the Stansted Airport Consultative Committee, Department for Transport and environmental health teams from neighbouring Local Authorities. This provides a valuable forum to explore noise concerns and discuss potential solutions.

For further information on any of this work please contact our Community Relations Team:

Community Relations
London Stansted Airport
Bassingbourn Road
Stansted CM24 1QW

Email: stn_communityrelations@stanstedairport.com

We will continue to publish details of the location, number and nature of the noise-related complaints that we receive, and we will report them through the Noise and Track Keeping Working Group and the Airport Consultative Committee. We will use this information to help us develop our policies on managing noise and communicating with local people.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP40: recording and investigating complaints	We will continue to record and investigate all complaints relating to aircraft operations and publish statistics in line with agreed complaints handling policy.	Retained
NAP41: responding to complaints	Regularly report on our complaints response times, aiming to respond to at least 90% of complaints within eight working days.	Retained
NAP42: complaints process	We will continue to offer a range of contact options for complaints and enquiries regarding aircraft noise including email, website and telephone contact options.	Retained

[23] See https://www.stanstedairport.com/about-us/developmentplan

We believe that we can respond to many of the noise complaints that we receive by giving people a better insight into the way we work, what we do and why we do it. Where we feel that there would be a benefit, we invite local residents and complainants to the airport so they can see first-hand how the airport operates, the work of the flight evaluation unit, the noise and track keeping system, mitigation schemes and how we monitor compliance with aviation rules and regulations.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP43: complaints and enquiries	We will continue to invite local residents and complainants to the airport to demonstrate our noise and track keeping system and explain our noise mitigation schemes, where we perceive there to be a benefit.	Retained
NAP44: complaints and enquiries	We will continue to publish an annual noise complaints report and seek feedback through the NTKWG to develop the report and its contents.	Retained

We are committed to providing transparency of our operation. Stansted Airport has previously invested in an online flight tracking tool called WebTrak. This enables residents to view the Stansted arriving and departing aircraft heights and tracks. This now includes our fixed noise monitors and the noise levels of aircraft operations, but the data in the system is delayed by 24-hours.

Since our development of our online system and in response to community concerns about helicopter operations, the radar feed has recently been upgraded to enable WebTrak to show helicopter operations at London Stansted. We feel it is necessary to upgrade the system once again and more specifically to remove the delay in flight track data appearing in WebTrak.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP45: flight tracking information	We will continue to provide public access to flight track tracking information via WebTrak and will reduce the current 24-hour delay to bring this closer to real time.	Modified
NAP46: flight tracking development	We will explore opportunities to introduce additional online tools to benefit local residents understanding of our operation.	New

Complaints about aircraft noise provide valuable information that helps us to work with airlines, air traffic control and pilots to keep disturbance to a minimum. Complaint data is regularly shared with the Noise and Track Keeping Working Group and additional specific data is shared at their request. Additionally, we seek feedback from these groups on our regular data reporting and this will continue to evolve during this Noise Action Plan.

It is important to track how we are performing against this Noise Action Plan and we will report regularly to the NTKWG and EIG. We will also report against targets in our annual Corporate Social Responsibility report.

CONTROL	ACTION	STATUS – NEW, RETAINED, MODIFIED
NAP47: engagement with stakeholder groups	We will continue to routinely work with our NTKWG and EIG to develop and facilitate solutions to community concerns where possible.	Retained
NAP48: feedback from stakeholder groups	We will continue to seek feedback on our noise management performance from the NTKWG and EIG.	Retained
NAP49: review and develop our communications materials	We will annually review our communication materials and website to ensure ease of understanding and continue to develop the information available to local residents.	Retained
NAP50: reporting on our progress	We will continue to publish our progress against this Noise Action Plan on an annual basis through our CSR report.	Retained

16. NOISE COMPLAINTS

Complaints about noise provide us with an invaluable insight into the things that people find most intrusive. Our annual noise complaints summary report gives insight into the locations and concerns raised by these residents and we have a good understanding of the noise issues that affect our local communities as a result.

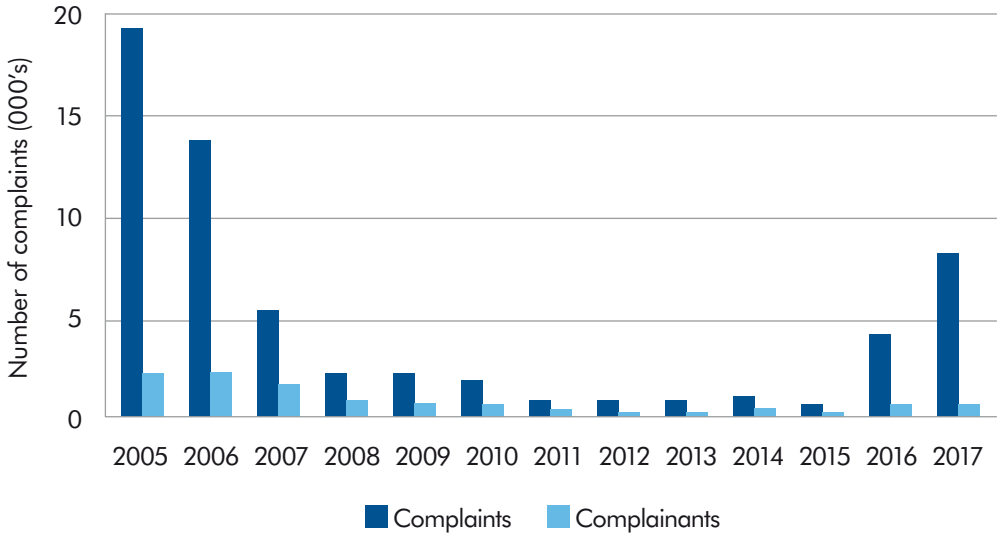
Implementation of the first phase of LAMP was in February 2016, where daytime departures for destinations to the south, including mainland Europe are now routed to the east.

Whilst this change has enabled improvements in the way aircraft operate including continuous climb and reducing fuel burn and emissions, it has led to changes in the pattern of flight with some communities experiencing increased frequency of flights and some a corresponding reduction.

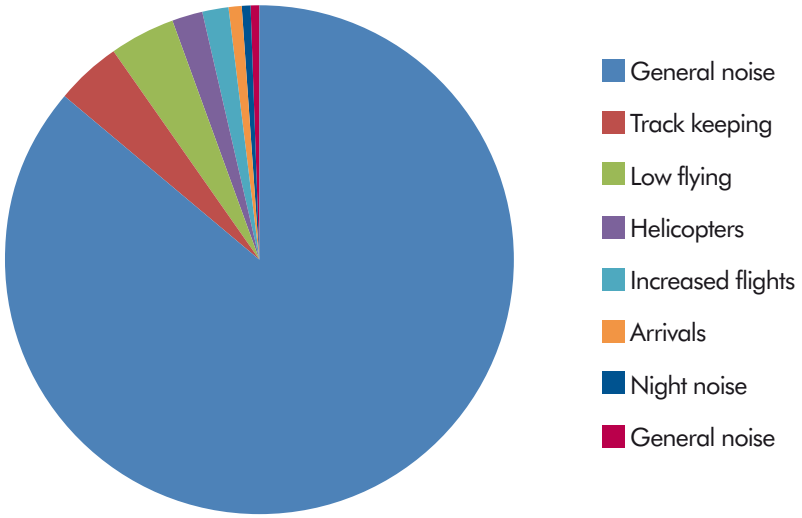
For those communities near the easterly Clacton departure route(s) this has meant, in practical terms, a doubling of departure traffic during the day, but for those near the southerly Detling departure route(s) overflights during the daytime have almost ceased. Where noise levels change gradually over time, there is poor correlation between the number of complaints and the number of movements or levels of aircraft noise. Noise level or aircraft movement changes that occur quickly or unexpectedly can to lead to a surge in complaints and this has been the case in this instance following the introduction of LAMP phase1a in February 2016 where London Stansted saw a large increase in noise complaints from residents that were impacted by this change.

During 2016 we received 4,170 complaints from 670 individuals and in 2017, a total of 8,395 complaints were received from 633 individuals. Within these complaint totals, 6,618 complaints (79%) were received from 10 people. This is a significant increase on the previous two years where 10 people accounted for 50% of the total in 2015 and 59% in 2016.

COMPLAINTS AND COMPLAINANTS 2005-2017



NATURE OF COMPLAINTS IN 2017



17. CONSULTATION RESPONSES

London Stansted Airport has undertaken a full public consultation to seek, consider and incorporate views on the development of this latest revision of its Noise Action Plan. Details of consultations on previous versions of the airport's Noise Action Plan are provided in Appendix A.

Ahead of this public consultation, at the request of the Airport Consultative Committee and its sub-group, the Environmental Issues Group (EIG), a short period of consultation was undertaken with that group which commented on the then draft Noise Action Plan.

Where appropriate the comments from EIG were included in a revised draft Noise Action Plan for public consultation and the views expressed by the EIG have also been considered further in this submission draft. This period of consultation with the EIG was undertaken between 25th July 2018 and 15th August 2018.

The full public consultation was undertaken from 15th August 2018 to 17th October 2018 and was preceded by the issue of a press statement to inform members of the public. Section 2 of this Noise Action Plan details the list of formal consultees, with over 70 councils, 6 MPs and a variety of industry bodies who all received a covering letter with a link to the draft Noise Action Plan. Formal consultation on the draft NAP, follows extensive consultation with local communities to inform the Airport's proposal to grow beyond its current capacity limit of 35 million passengers per annum. This separate consultation also helped to inform the development and content of the draft NAP.

It is important to receive feedback from our stakeholders and the public to this latest plan. The public consultation process included:

- Feedback from recent community consultation associated with developments at the Airport
- Engagement and discussions with key stakeholders including airlines, regulators and the airport Consultative Committee during the drafting of the Noise Action Plan
- Communication with stakeholders when the draft Noise Action Plan is published for consultation
- Online public consultation to enable stakeholder comments to be made
- An offer of meetings and briefings with key local stakeholders including County Councils, District Councils, Town Councils, Parish Councils and Members of Parliament
- Use of existing communication channels to promote the consultation on the draft Noise Action Plan
- Encouraging comments from a wide range of stakeholders across the areas around London Stansted Airport
- Considering comments and including a response to consultation within the final version of the Noise Action Plan
- Notifying stakeholders and consultees when the final Noise Action Plan is adopted and published.

A dedicated email address was provided for people to share their views with us – **noiseactionplanSTN@stanstedairport.com** and a PDF questionnaire form provided to make responding easier.

A summary of those who responded and from where (when stated) and how they responded is shown below. Nine of the 17 responses were submitted via the PDF questionnaire form.

RESPONDENTS	No OF RESPONSES
Individuals	11
Town / Parish Councils	4
EIG / others	2
Total	17

LOCATION OF RESPONDENT	No OF RESPONSES
Saffron Walden	3
Dunmow	2
Thaxted	2
Stansted Mountfitchet	2
Bishop's Stortford	1
Ware	1
High Easter	1
Furneux Pelham	1
Felsted	1
Hampshire	1

SUMMARY OF RESPONSES

In reviewing the individual responses to the consultation, we found similar comments or areas of overlap in comments on specific topics. The comments received on these topics have been grouped and summarised below and include comments from the EIG.

NAP/GENERAL

- The plan would benefit from having an executive summary.
- Actions in the plan should have clear measurable targets and improved community reporting and timings where necessary.
- Develop a set of noise reporting standards.
- NAP is a waste of time as the airport does what it want.
- Document is rather technical and not particularly easy for residents to understand.
- Compared to the 2011 NAP, the number of people within the noise contours has increased and this proves the 2011 NAP has failed to achieve its END objective.
- Time-scaled quantified outcomes that reduce noise impacts and evidence where noise reduction measures need the support and active participation of other parties must be provided in the 2019-2023 NAP as required by Defra.
- Number of people within noise contours compared with historic figures is skewed by economic downturn. No evidence provided that reduction in contours is due to quieter aircraft. Too much reliance on technological developments. Suggests compensation for local communities.
- Reporting takes too long and unhappy with responses to complaints.
- Vary runway more often.
- No mitigation schemes.
- Airport monitors its own plan.
- Frequency based metrics should be developed in consultation with the local community.
- Off track fines are derisory and should be 10 times higher.
- 1,000ft rule is meaningless and should be revisited.
- Ensure all flights are flown in the most noise efficient way.
- The NAP has superseded national targets and sets high goals.

HELICOPTERS

- Helicopters do not have to follow air corridor regulations and Councillors would like this to alter so that they do have to follow regulations, as they are also noisy.
- Further action should be taken to ensure Helicopter operators observe the rules.

NIGHT FLIGHTS

- The Airport should consider night flight ban as these are a serious issue for local communities.
- Issues with volume of flights particularly cargo and night flights.
- Keen to ban night flights.
- Night noise, restrictions on aircraft permitted at night, easier reporting.
- Night flights have increased and desire to reduce night flights.
- Proposal to reduce night noise limit is welcomed.
- Ban reverse thrust.
- Ban larger noisier planes, especially at night.

DAYTIME

- Concerns about increased daytime flights noise and pollution.
- Proposal to reduce departure noise limit is welcomed.
- Members of the public have noticed there appear to be more flights over Ware, which is increasing traffic noise and they are also concerned about very low flying over Ware, which could result in an accident.
- The new types of quieter aircraft appear to occupy the middle of the day slots, with older and noisier planes using the earlier and later slots. Councillors urged Stansted Airport to maximise their business opportunity to have flights operating throughout the day, with consideration given to cargo planes for morning and evening slots.
- Councillors were in agreement that if the increasing noise is not challenged there will be no improvement and urged Stansted Airport to do all it can to minimise the noise for Bishop's Stortford residents.
- There are concerns about circling over Ware at busy times.

AIRSPACE

- Impact of LAMP Phase 1A changes. Would like to see a reversal of this. Flight path changes should be communicated to all residents directly.
- Reduction of the noise impact on people who now live under concentrated flight paths as a consequence of PBN routes must be introduced. This might be resolved by introducing alternative or multiple routes in consultation with local communities.
- Support for PBN implemented so far.

WHO REPORT

- WHO Report – NAP should be amended in line with new WHO thresholds and until it is, council don't feel they can comment on whether it is acceptable or not.
- The new lower WHO thresholds announced on 10th October 2018 of 45dB for 24-hour (L_{den}) and 40dB for night (L_{night}) effectively nullify the noise mapping results.
- The information on areas and numbers of people affected by the new WHO thresholds on which to base NAPs to manage and reduce the adverse impacts is not available.
- The mapping must be recalculated using the new WHO thresholds.

RESPONSE TO THE COMMENTS RAISED IN THE CONSULTATION

Many of the detailed comments provided by the EIG had already been included ahead of the public consultation. Notably, this included the provision of a separate executive summary and revised timescales against some of the proposed actions. We have written to the EIG and provided a detailed response to their comments, outlining where they have been included in the draft Noise Action Plan.

The EIG was keen to promote transparency through the Noise Action Planning process and the ongoing reporting during the lifetime of the plan. We welcome its commitment to shape our public reporting along with the NTKWG to provide clear and meaningful data enabling our local communities to be better informed. This was also reflected in a number of other responses received to the consultation.

This process is already underway at the recent NTKWG meeting, where early discussion is taking place to provide a framework for more effective and transparent monitoring and reporting against this Noise Action Plan.

Stansted Airport has provided all previous contour data to show how the contour area changes over time. We are committed to improving our response to enquiries and as stated above, we are committed to working with the NTKWG and EIG to improve our public reporting and providing assurance that our commitments are being met.

We will discuss the 1,000ft rule with our NTKWG and revisit this through the ANMAC forum. As part of our annual noise contour reporting, there has already been much discussion about Number Above contours. These revised set of metrics have been developed with the EIG as part of our previous Noise Action Plan. We are committed to continue producing a suite of noise metrics as part of this Noise Action Plan and we have added a number of additional target dates as suggested.

The recent helicopter project has been a great success. Since our ability to track helicopters more accurately, our monitoring shows that there is an improvement in their tracking close to the airport as a result of the inclusion of the Hazelend Wood reference point, reducing the overflight of local communities. We continue to monitor Helicopter traffic on a daily basis and raise any issues with those operators concerned.

We are pleased to see that the commitment to reduce the daytime and night time departure noise limit has been welcomed and we have added a target date for implementation. Following this, we will seek to revise our surcharge structure. Night operations are a very sensitive issue for some local communities and our proposed action to further restrict the noisier types of aircraft operating will be maintained during this Noise Action Plan. We are bound by the Government's Night Noise Restrictions regime and our QC2 ban prevents additional operations by QC2 rated aircraft, the noisiest permitted operations at night.

There were a number of responses reflecting the recent growth of the airport since the economic downturn, the current planning application and concerns about low flying aircraft. The planning application seeks to increase permitted passenger numbers without any increase in overall numbers of aircraft operating. The comments relating to the Ware community and the height or aircraft on arrival are well known and are a reflection of the present outdated airspace structure. We are likely to see plans develop for improvement in airspace and it remains fundamental to have a published Continuous Descent Approach for runway 04, which would substantially improve the height of aircraft and reduce noise near this community. As airspace develops, any changes will fall under the CAA's CAP1616 process.

A number of comments were received towards the end of the consultation relating to the recently published WHO report. This report is an important contribution to knowledge in this area and we will give it our close attention. We will also be working with Government to support their consideration of these findings so that they may be incorporated into policy, specifically in the forthcoming Aviation Strategy.

18. CONCLUSION

This Noise Action Plan has been developed to meet the long term aims of Stansted Airport to 'limit and reduce where possible, the number of people affected by noise because of the airport's operation and development'.

Under the regulations we must assess how effectively we are controlling the effect of noise arising from aircraft landing and taking off. The effect of our work has been presented in the form of noise maps, along with the number of people and homes experiencing a range of noise levels.

In 2006 – the year for which our first noise maps were produced – 23.5 million passengers travelled through Stansted Airport and the total aircraft movements were 206,000. By 2016, having recovered from the economic downturn passenger numbers had reached 24.4 million, but the number of Air Traffic Movements was only 180,000, which highlights that aircraft load factors had increased dramatically. Over the same period, the noise contour (55dB L_{den}) has reduced from 73.3km² to 64.4km² (12%) during the same period. Likewise, the size of the night noise contour (48dB L_{night}) has also reduced, from 57.5km² to 50.2km² (13%).

Since our last Noise Action Plan there are a number of opportunities which have developed such as Performance Based Navigation and improvements to Helicopter operations, both of which significantly reduce direct overflight and noise for our local communities. To capitalise on further opportunities, changes to how the airspace around the airport is used will be required and detailed discussion with the communities likely to be affected by this will be central to this process of airspace modernisation.

Supporting these actions, we are committed to maintaining our well-established noise monitoring and reporting and our community relations programme. We also acknowledge and welcome the invaluable support we receive from our consultative committees.

As the airport continues to develop we are committed to continually reviewing our performance, to meet our noise objectives and to deliver many of the social and economic benefits to the region that are described and set out in our Sustainable Development Plan.

GLOSSARY OF TERMS

AAL	Above Aerodrome level
A-CDM	Airport Collaborative Decision Making
ACP	Airspace Change Proposal. This process is regulated under CAP1616
AIP	Aeronautical Information Publication
ANMAC	Aircraft Noise Management Advisory Committee. The committee is chaired by the Department for Transport and comprises, among others, representatives of the airlines, Heathrow, Gatwick and Stansted airports and airport consultative committees
ANMAC TWG	A subcommittee that provides technical information to ANMAC
ANOMS	Airport Noise Operations Monitoring System, Stansted Airport's NTK system
APF	Aviation Policy Framework
APU	Auxiliary Power Unit. A power unit located on the aircraft to provide power to essential systems whilst on the ground
ATC	Air Traffic Control
ATM	Air Transport Movement
CAA	Civil Aviation Authority
CCO	Continuous Climb Operation
CDA/CDO	Continuous Descent Approach/Continuous Descent Operation
DAP	Directorate of Airspace Policy. The CAAs Airspace Regulator
dB(A)	A unit of sound pressure level, adjusted in accordance with the A weighting scale, which takes into account the increased sensitivity of the human ear at some frequencies
DEFRA	Department for Environment Food and Rural Affairs (UK Government)
DfT	Department for Transport (UK Government)

DN	Directors Notice, local rules and regulations of Stansted Airport
EIG	Environmental Issues Group – sub group of the Stansted Airport Consultative Committee
END	Environment Noise Directive
EPNdB	Effective Perceived Noise measured in Decibels
ERCD	Environmental Research and Consultancy Department of the Civil Aviation Authority
FEGP	Fixed Electrical Ground Power
FEU	Flight Evaluation Unit
FOC	Flight Operations Committee
GBAS	Ground Based Augmentation System
GPU	Ground Power Unit
ICAO	International Civil Aviation Organisation
ICCAN	Independent Commission on Civil Aviation Noise
ILS	Instrument Landing System – London Stansted has a Category 3B system at each end of the runway allowing equipped aircraft to land in lower visibility
LAeq 16-hour	The A-weighted average sound level over the 16-hour period of 07:00 to 23:00
Lday	The A-weighted average sound level over the 12-hour day period of 07:00 to 19:00 hours
Lden	The day, evening, night level, Lden is a logarithmic composite of the Lday, Levening, and Lnight levels but with 5dB(A) being added to the Levening value and 10dB(A) being added to the Lnight value
LAeq	Equivalent sound level of aircraft noise in dB(A), often called equivalent continuous sound level. For conventional historical contours this is based on the daily average movements that take place in the 16-hour period (07:00 to 23:00 LT) during the 92-day period 16 June to 15 September inclusive
Levening	The A-weighted average sound level over the 4-hour evening period of 19:00 to 23:00 hours.

Lmax	Maximum A-weighted sound level
Lnight	The A-weighted average sound level over the 8-hour night period of 23:00 to 07:00 hours.
LP/LD	Low Power/Low Drag
LTMA	London Terminal Manoeuvring Area
LOAEL	Lowest observed adverse effect level (in this plan this relates to aircraft noise). This is the level above which adverse effects on health and quality of life can be detected
MAG	Manchester Airports Group
NAP	Noise Action Plan
NATS	Formerly known as National Air Traffic Services Ltd. NATS is licensed to provide en-route air traffic control for the UK and the Eastern part of the North Atlantic, and also provides air traffic control services at several major UK airports, including Heathrow, Gatwick and Stansted
NM	Nautical Mile
Noise Contour	Map contour line indicating noise exposure in dB for the area that it encloses
NPR	Noise Preferential Route
NTK	Noise and Track Keeping monitoring system. The NTK system associates radar data from air traffic control radar with related data from both fixed (permanent) and mobile noise monitors at prescribed positions on the ground
NTKWG	Noise and Track Keeping Working Group
PBN	Performance Based Navigation
QC	Quota Count – the basis of the London airports Night Restrictions regime
RNP1	Required Navigational Performance of 1 Nautical Mile
SEL	Sound Exposure Level. The level generated by a single aircraft at the monitoring point. This is normalised to a 1 second burst of sound and takes account of the duration of the sound as well as its intensity

SID	Standard Instrument Departure route
SOAEL	The Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur
STACC	Stansted Airport Consultative Committee
STAL	Stansted Airport Limited
Sustainable Aviation	A UK aviation industry initiative aiming to set out a long-term strategy for the industry to address its sustainability issues
UDC	Uttlesford District Council
VFR	Visual Flight Rules


MAG
London Stansted
Airport
MODLIN JEST OK!
RYANAIR
RYANAIR
63
63

Designed and produced by threesixtymedia.net August 2018