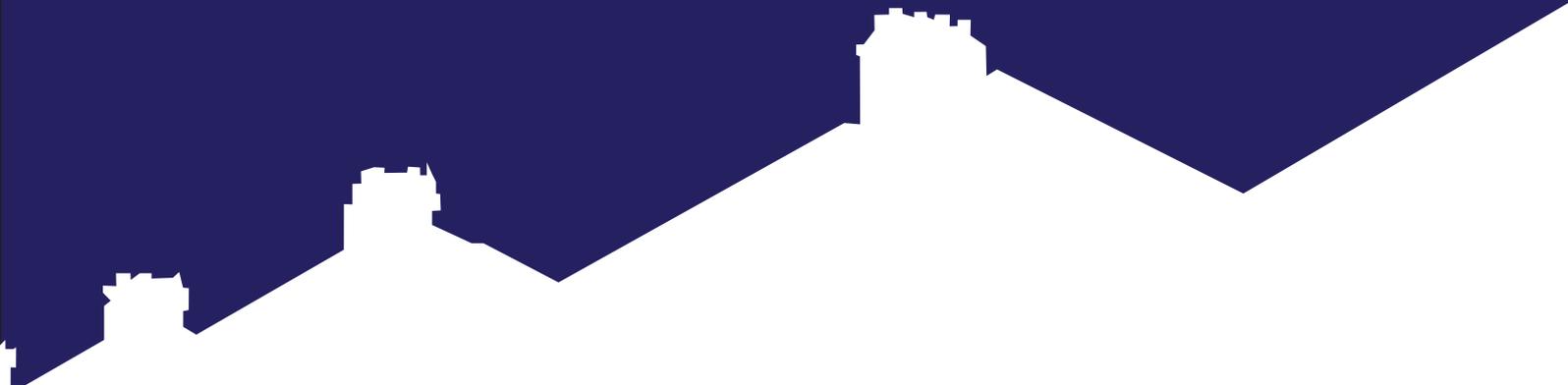


FLIGHT PATH TO GROWTH

MORE FLIGHTS, LESS NOISE: A MANIFESTO
FOR BALANCING AVIATION GROWTH AND
AIRCRAFT NOISE



London First

Foreword

London First is committed to ensuring that the capital retains its status as the world's best city in which to do business.

To do so, London must strengthen its long-standing air links with the key cities of the developed world, and, in parallel, establish a comprehensive new network of routes connecting it to the cities at the heart of rapid economic growth in the developing world.



But it's not enough simply to focus on ensuring outstanding access to the rest of the world. No less important is creating equally good quality of life for London's people. So, just as London First is committed to increasing London's runway capacity, we believe that more must continue to be done to reduce, mitigate and manage aircraft noise. This paper attempts to demonstrate why there are good grounds for thinking that the right balance can be struck between the concerns of residents and the pressing need to increase flights from the capital's airports.

I would like to thank the many individuals, representing a wide range of views, who gave their valuable time to help inform our thinking in preparing this report. Not all will agree with our final analysis. All views expressed are, therefore, our own and not necessarily representative of any of our valued contributors.

[Jo Valentine, Chief Executive, London First](#)

6th November 2013

Introduction

London First has long been a champion of strengthening London's air links with the rest of the world. We also care passionately about the quality of life in London. To succeed as a world city, London must continue to improve both.

Through our participation in the debate on the complex, and often emotive, issue of how to improve London's air links, we recognise that noise is, by some distance, the primary concern for local residents and communities. Any debate about aviation policy must take account of the legitimate and considerable concern over aircraft noise of populations close to airports.

Managing aircraft noise is of particular relevance to the UK debate about the future of air travel because of population densities in South East England and because of the emerging consensus that, as the Chair of the independent Airports Commission put it recently, net additional runway capacity will be needed in the south east of England in the coming decades.

While communities near to airports undoubtedly benefit considerably from the employment that an airport generates – both directly and indirectly – and other economic factors, there will always be concern over noise. However, we believe it is possible for the UK to raise its game on managing aircraft noise and allow our air links to be enhanced, while at the same time reducing overall impacts.

Given London's distinctive aircraft noise circumstances, it is therefore essential that the issue should be a major consideration for policymakers.

Quieter planes

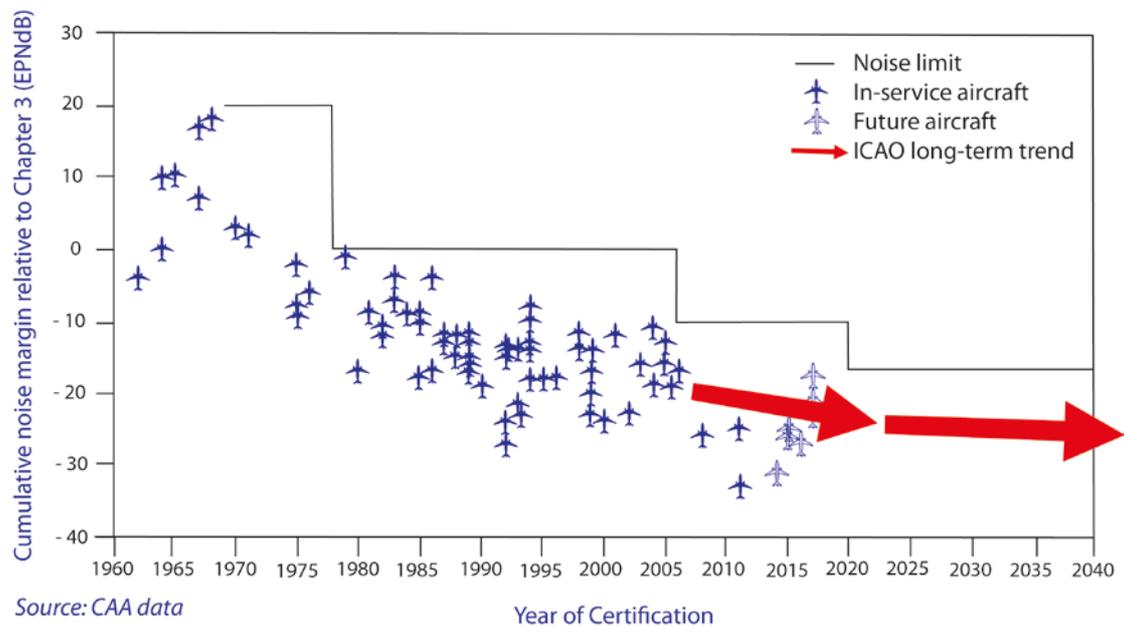
A sensible starting point is to acknowledge the long-standing and marked downward trend in the level of noise emitted by planes.

Technological advances have steadily and significantly reduced the level of noise emitted by aircraft engines. There is no reason to suppose that trend will not continue during the coming decades, although predicting the development and uptake of new technology is inherently difficult.

Commercial aircraft of a given size have become quieter with every successive generation. Since commercial jet aircraft entered service, the noise emitted by an aircraft of a given size for a given flight has reduced by more than 90%. Figure 1, overleaf, illustrates the significant progress made in reducing source noise since the introduction of jet transport aircraft in the late 1950s, and projections for the coming two decades or so.

The impact of these trends in the UK can be illustrated by looking at noise impacts at our busiest airport, Heathrow. Since 1980, the number of people affected by an average noise level of 57dB (the equivalent of light car traffic from a distance of around 15 metres) or more from aircraft noise, has fallen from two million to around 250,000, despite a 75% growth in flights (and significant new housing development near the airport). This is primarily because aircraft manufactured today are much quieter than they were 20 to 30 years ago (a trend illustrated in Figure 1).

Figure 1: Historic and Future Trends in Cumulative Certified Aircraft Noise Levels



Source: CAA data

These aircraft will, in turn, be replaced by even quieter aircraft in the future. Plans by International Airlines Group – which includes Heathrow’s largest airline, British Airways – for a multi-billion pound order for Boeing and Airbus planes and retirement of its Boeing 747-400 fleet by the early 2020’s exemplifies the scale of change underway. The Boeing 787, for example, is 40% quieter than today’s similar-sized aircraft. It has been suggested that making information about the relative noise emissions of individual aircraft or fleets might be helpful in demonstrating these improvements. Heathrow, for example, has recently begun publishing “league tables” to benchmark how quiet individual airline fleets are, and how quietly they are flown.

One live question is whether incentives to use even quieter aircraft could be strengthened further. This is a complex issue as aircraft are expensive and have long asset lives – fleet lifecycles are typically 20 years or more. Much of the regulatory framework for noise is set at the international level, through the International Civil Aviation Organisation (ICAO), which is the specialist United Nations agency setting technical and policy standards, or through the

European Union. There is therefore a limited amount that individual airports, or even countries, can do to incentivise the faster take-up of quieter aircraft.

Within this international framework, the Government's Aviation Policy Framework, published in March this year, suggested that airports should consider extending the use of differential landing charges to incentivise quieter aircraft. In response, the Civil Aviation Authority undertook a review of noise and emission charges at six UK airports (including Heathrow, Gatwick and Stansted).

The CAA's report found significantly varying practice across airports (Heathrow, as an example, has well-established policies) and concluded that a clearer and more consistent approach to landing charges could strengthen incentives for more environmentally friendly operations. In particular, it suggested that increasing differentials in landing charges could incentivise airports and airlines to use aircraft that are best in class, particularly at sensitive times. It could be argued that punitive measures such as this are counterproductive as they reduce an airline's ability to access finance for fleet replacement or upgrades, or that, for example, the Noise Quota Count system is far more effective as an incentive to change behaviour; but we would encourage the Airports Commission and Government to continue to explore these and other ideas with all parties to assess their potential effectiveness.

More efficient operational procedures

Over the years, airports, airlines and air traffic control have done a considerable amount to develop and deploy procedures to reduce and manage aircraft noise. There is potential for continued progress to be made. ICAO identifies three distinct categories of operational procedure with further opportunities to reduce noise:

- The use of noise preferential routes to divert aircraft flight paths away from populated areas (or to provide respite at certain times of day);

- The use of specific take-off or landing procedures (such as Continuous Descent Operations, displaced thresholds or steeper landing trajectories); and
- Limited engine ground running and reduced engine power/drag

As the Airports Commission has observed in its discussion paper on noise, the first and second of these procedures are already widely used in the UK. It is the third category which shows greatest future potential.

Recent developments in air traffic control and navigation technology offer potential for planes to follow carefully defined flight paths much more tightly and safely than was possible before. In principle this should offer scope to reduce the number of people affected by aircraft noise, or spread noise between different areas more effectively. Gatwick, for example, will shortly begin a new method of navigation (P-RNAV) that concentrates departing aircraft tracks along a narrower corridor rather than, as now, a 3km swathe. These narrower corridors could in turn be alternated to allow communities around the airport regular periods of respite from noise. Heathrow has worked with its airlines on improved departure routings, as well as early morning respite periods, and plans further trials towards the end of this year.

In an attempt to realise this potential, the CAA has been working with the aviation sector to develop a Future Airspace Strategy. In tandem, the National Air Traffic Control Service (NATS) recently launched a consultation on possible changes to airspace use and management in the skies around Gatwick and London City Airport. There may also be scope to move conventional stacking systems (where aircraft circle awaiting a landing slot) away from land and place them over the sea. The net effect of the NATS proposals would be less noise overall (although, of course, there will be both winners and losers in particular places). We therefore welcome the consultation and look forward to innovative proposals emerging for all South East airports.

Better community engagement

Clearly, airports have every incentive to communicate effectively with residents and communities affected by flights, and we believe there have been significant improvements in recent years in the way airports engage with their local communities. However, such improvements will not by themselves be sufficient fully to dispel concerns within those communities. In order to establish greater trust and transparency, local people - as well as national policy makers - need greater comfort and assurance in the information being presented to them about the noise impacts of current and future operations. They also need confidence that airports will be held to account for any commitments made.

While the continual improvement in airports' efforts to work with communities is recognised, in London First's view, the creation of a new and independent noise regulator could bring both new levels of trust and transparency to local concerns and to national policy-making. It could, with a proportionate remit and appropriate governance, strengthen the development, implementation and regulation of policy on noise as it relates to current operations and plans for growth.

Independent Noise Ombudsman

We advocate the establishment of an independent Noise Ombudsman with a robust and water-tight mandate to protect the interests of the people beneath the flight path and a set of teeth to penalise, if necessary, airlines that break defined noise limits.

The Government's responsibility in respect of regulations should be to define, and thereafter keep under review, the acceptable 'noise envelope' for individual airports, and to set the penalties that may be applied when the terms of that envelope are breached. In doing so, it would need to have regard for the strategic economic contribution made by aviation as well as

individual planning conditions in respect of noise that may already be in place for each airport.

The Ombudsman's primary responsibility should be to ensure that the noise envelope set by Government is enforced. In discharging this duty, it would: (i) monitor all aircraft noise emissions; (ii) levy penalties where breaches of regulations occur; and (iii) report on noise in a manner that is transparent and intelligible to local communities.

Penalties for breaches should be greatest in relation to those practices which have the most damaging impact on affected communities, for example night flights. Such penalties should also be proportionate, not only to act as a real deterrent to airlines but also to take account of the degree of 'preventability' in relation to the transgression in question. Ideally, violations should be dealt with through investigation of their root causes, and working with airports and airlines to prevent their reoccurrence, rather than automatically applying a penalty. A risk of the 'parking ticket' approach is that penalties come to be seen simply as a cost of doing business when their objective should be to deter. The Ombudsman should monitor closely the tariff of penalties and be able to recommend changes to Government where it is clear that the existing measures do not act as sufficient deterrent.

Notwithstanding the need for clear separation between the roles of Government and the Ombudsman in the management of aircraft noise, the Government should be able to seek advice from the Ombudsman in setting the noise envelope. This might cover expert advice on: the appropriate metrics for any envelope; how best to take account of the concept of so-called 'community tolerance' (a measure of the relationship between the rate of growth of annoyance over aircraft noise and the rate of change of loudness of aircraft); the merits and de-merits of concentrating and diffusing aircraft noise; and the value of predictable respite to local communities.

The Ombudsman must be independent of the aviation industry, though whether or not it should be within, or separate from, the Civil Aviation

Authority remains open to debate. We believe that the benefits of such a new body would outweigh the costs of regulation and help the government to establish the optimal balance between the need to maintain the UK's competitiveness and the legitimate concerns of those living within an airport's noise envelope.

Further work should quantify both costs and potential benefits. In doing so, it should assess the scope for streamlining current processes by which noise information is gathered, plans made and then regulated. It is worth noting, for example, that certain airports are directed by the European Commission to produce Noise Action Plans, which are in turn overseen by Department for Transport, Department for Environment, Food and Rural Affairs and the CAA. However, there is no clear guidance from Government on how these plans should be enforced or communicated. The Ombudsman's remit should be informed by, and tailored to, the work already underway at airports, with intervention ranging from a light-touch verification of plans to a full enforcement regime.

The UK has a good record in establishing effective authorities (in utilities, for example) that develop their own standards within frameworks set by other bodies or already in place. And some existing bodies, such as the French regulator, ACNUSA (described in Annexe) encompass noise as part of their remit, while there are various mechanisms in operation at a range of international airports that are likely to be applicable. Some of these are outlined below and annexed.

- In Amsterdam, Frankfurt and Brussels, regional and local authorities play a contributory role in establishing local environmental limits and levels of compensation. In addition, in Amsterdam the representative panel of residents and municipalities (the Alders Platform), in conjunction with Schiphol airport, advises the Government on the balance it should strike between increasing the number of flights and measures to limit / reduce their local environmental impact.

- In other parts of Europe and in North America, airports have established transparent mechanisms for tracking the impact of measures to limit / reduce noise and communicating the findings of this work. Zurich Airport monitors departure flight paths and publishes the number of deviations, the proportion of these deviations investigated, the number of cautions issued and the number of cases reported to the aviation regulator. San Francisco runs a fleet noise quality assurance programme, evaluating and publishing the noise contribution of each airline. Chicago O'Hare publishes hourly noise monitoring site reports with statistics presented in easily understood diagrammatic form alongside noise contours and the number of aircraft noise events greater than 85dB and 65dB.

Compensation

Even if progress is made in all areas outlined above, some individuals and communities around airports will continue to be affected and require mitigation measures. Notwithstanding the compensation regimes already operated by London's airports, there is merit in considering whether lessons can be learned from schemes operated at airports elsewhere.

For instance, in France, Holland, the USA and Australia, charges are levied on airlines or passengers, according to airport and noise levels. Revenues are hypothecated and fund sound insulation programmes. Around Paris Charles de Gaulle, for example, over 15,000 homes and public buildings have been insulated since 1995 at a cost of €151 million. Around Amsterdam Schiphol, approximately 12,000 homes have been insulated in the last 30 years, at a cost of more than €500 million. In Chicago, the Midway Noise Compatibility Commission, established by the Mayor, oversees the insulation programme, funded by the federal Passenger Facility Charge. Each such measure is geared to specific local requirements; a similarly bespoke approach would need to be taken to the differing conditions and concerns around London's three main airports and, indeed, other UK sites.

Conclusion

Expansion of London and the UK's air capacity cannot be achieved unless well-founded public concern about the impact of noise from increased air traffic is addressed. This is an emotive subject but, in our view, a combination of some or all of the measures discussed in this paper should be sufficient to demonstrate that the actual impact of aviation noise can be reduced even with an increase in flights and that a framework for effective and proportionate noise regulation could be established that would give confidence to affected communities.

6 November 2013

Annex – Case studies of noise management

Case study 1 – France

ACNUSA (Autorité de contrôle des nuisances aéroportuaires) was established in 1999 as an independent authority with specific powers over France's 10 largest airports. It has the power to impose sanctions on individuals and airlines for non-compliance with a variety of requirements, including noise limits.

Since 2000, more than 1,500 sanctions have been issued, corresponding to more than €10 million in fines collected.

The effectiveness of the sanctions has recently been strengthened by the power to ground aircraft of airlines that do not pay the fines imposed.

Case Study 2 – The Netherlands

The Alders Platform was created in 2006 to advise the Dutch Government on issues relating to the development of Amsterdam's Schiphol Airport and its surrounding area until 2020. It comprised representatives from national and local government, the aviation sector and adjacent communities. Its mandate was to devise policy proposals via consensus among all participants and to inform local communities of all relevant developments.

In 2008, the Platform published a comprehensive package of noise abatement proposals, focusing on: new departure procedures; extension of the CDA period; revised operational restrictions and fees; insulation of noise-sensitive objects; reduction of ground noise; and information for airport communities.

Among the measures adopted were:

New departure procedures, including fixed radius turns to concentrate air traffic between residential areas

New routes designed, tested and implemented

Night cap lowered from 32,000 to 29,000 movements

Use of quieter Continuous Descent approaches between 11pm and 6am

Fee differentiation, for example landing charge supplements for the noisiest aircraft and discounts for the quietest

Noise insulation of affected buildings

Noise absorption mechanisms at ground level in and around the airport

Information provided to Adjacent Communities on flight path use and anticipated numbers of flights

Noise and flight path monitoring