

# 2013-2018 Noise Action Plan Summary

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# Introduction

The EU Noise Directive 2002/49/EU and Environmental Noise (Scotland) Regulations 2006 requires airports with over 50,000 movements a year to produce a noise action plan (NAP) every five years. As part of this we produce noise maps along with detail of the number of people and homes exposed to a range of noise levels and metrics.

We believe that the impact of noise should be considered holistically and whilst noise from the landing and take-off cycle affects specific communities more than others we will also propose actions to mitigate the impact of noise from aircraft taxiing and engine running on the airfield.

Our 2008-2013 NAP set out clear actions to mitigate noise associated with aircraft at Edinburgh Airport and we have reported annually on the progress in achieving these actions in our Corporate Responsibility Report (CRR). As part of our new NAP we proposed to update and continue the relevant actions as appropriate. The new actions are listed below. The following key themes identified in our previous NAP are still relevant:

- a) demonstrating our continuing commitment to managing aircraft noise impacts associated with Edinburgh airport's operations:
  - (i) the quietest fleet practicable.
  - (ii) the quietest practicable aircraft operations, balanced against NOx and CO<sup>2</sup> emissions.
  - (iii) effective and credible noise mitigation schemes.
- b) allowing us to engage with our communities affected by aircraft noise and better understand their concerns and priorities.
- c) influencing planning policy to minimise the number of noise sensitive properties around our airports.
- d) organising ourselves to continue to efficiently and effectively manage aircraft noise.
- e) building on our extensive understanding of aircraft noise to further inform our priorities, strategies and targets.

The following table outlines what methods of mitigation we apply at Edinburgh Airport:

| Table 1            | <b>Vertical noise mitigation</b><br>(Noise reduction by creating<br>greater distance between the<br>noise source and receptor) | Horizontal noise mitigation<br>(Opportunity to share noise<br>when there is favourable<br>geographic distribution of<br>population)   | <b>Aircraft operational practice</b><br>(Noise reduction<br>at source)  |
|--------------------|--|---|---|
| Arrivals           | Continuous descents  | <ul> <li>Runway alternation</li> <li>Defined Standard Arrival<br/>Routes (STARS</li> <li>Runway directional<br/>preference</li> </ul>   | <ul> <li>Low power low drag</li> <li>Reduced landing flap</li> <li>Delayed deployment<br/>of landing gear</li> <li>Managed approach speeds</li> <li>Avoiding reverse thrust on<br/>landing</li> </ul> |
| Departures         | • Continuous climb   | <ul> <li>Runway alternation</li> <li>Defined standard<br/>instrument departures<br/>(SIDs)</li> <li>Noise Preferential Routes<br/>(NPRs)</li> <li>Runway directional<br/>preference</li> </ul>  |   |
| Airspace structure | <ul> <li>Single European Sky ATM<br/>Research Programme<br/>(SESAR)</li> </ul>   | <ul> <li>SESAR</li> <li>Flexible use of airspace<br/>between civil aviation,<br/>military and general<br/>aviation and airspace users</li> <li>Route availability<br/>improvements, conditional<br/>routes through military<br/>air zones and procedural<br/>improvements.</li> </ul> |   |
| Ground noise       |  |   | Reduced engine taxi   |

Where we don't have direct control over potential mitigation we work in partnership with others, such as airlines and air traffic control services to implement an appropriate solution. By prioritising noise management activities on the most effective actions, we believe we can ensure maximum benefits for noise affected communities. As a result since 2006 the number of noise complaints and complainants has gone down and the contours have contracted. However, we have used the 2011 census results to calculate the number of people within the noise contours and this shows an increase in people living within the contours. This reflects the substantial house building in settlements such as Livingston since the 2001 census.

## **Noise Mapping**

One of the key outputs of the NAP is dB Lden noise contours for 2011 along with detail of the area, population and number of households within the contour banding. As with the previous NAP this work was undertaken by the Civil Aviation Authority (CAA) who use and maintain a civil aviation noise model known as ANCON. The model estimates the average noise on the ground through taking account of the type and number of aircraft operating to and from Edinburgh Airport and the time of day or night that they are flying.

The noise contours produced under the EU Noise Directive use a different noise metric to the contour maps in the recent airport

masterplan. The NAP uses dB Lden noise contours and the masterplan dBLAeq. The difference between the two metrics is explained below:

#### dB Lden Contours

The dB Lden contours are based on air traffic movements over the entire year and require a different range of noise parameters: Lday, Levening, Lnight, LAeq16hr, and dB Lden. In addition, an arbitrary weighting of 5 dB is applied to each of the evening (19:00-23:00) movements and 10 dB for each of the night (23:00-07:00) movements, to take into account the greater disturbance at night. Contours for strategic noise mapping are presented in 5 dB steps from 55 dBA to 75 dBA except for Lnight where the contours are presented between 50 dBA and 70 dBA.

#### dB LAeq Contours

Under UK legislation the most common method for measuring noise at airports is the Equivalent Continuous Sound Level, dB LAeq which predicts average noise levels for the busiest 16 hours of the day, between 0700 – 2300 over the busiest three months of the year, from mid-June to mid-September.

The UK Government says that communities become significantly annoyed by aircraft noise above 57dB LAeq. This is why contours are presented from 57 to 72 dB LAeq in steps of 3 dB. It is difficult to compare the two noise metrics due to the different methods of calculating them, however in general terms, the area of the dB Lden contours tends to be larger than those for dB LAeq due to the weightings for evening and night flights. Although the weightings do not directly accord with perceptions, it is clear from community engagement and surveys that flights at night time and evenings tend to cause greater annoyance and disturbance than flights during the daytime.

#### **Noise Mapping Results**

The following tables detail the population and households within contours associated with various noise levels. The tables should be read alongside the maps below.

#### Estimated areas, populations and households within Edinburgh Airport year 2011 Lday noise contours

| Contour Level<br>dB (A) | Area km² | Population | Households |
|-------------------------|----------|------------|------------|
| > 55                    | 20.5     | 5,100      | 2,200      |
| > 60                    | 7.1      | 650        | 250        |
| > 65                    | 2.6      | 100        | 50         |
| > 70                    | 1.0      | 0          | 0          |
| > 75                    | 0.5      | 0          | 0          |

#### Estimated areas, populations and households within Edinburgh Airport year 2011 Levening noise contours

| Contour Level<br>dB (A) | Area km² | Population | Households |
|-------------------------|----------|------------|------------|
| > 55                    | 18.1     | 4,050      | 1,750      |
| > 60                    | 6.1      | 750        | 300        |
| > 65                    | 2.1      | 100        | 50         |
| > 70                    | 0.8      | 0          | 0          |
| > 75                    | 0.4      | 0          | 0          |

#### Estimated areas, populations and households within Edinburgh Airport year 2011 Lnight noise contours

| Contour Level<br>dB (A) | Area km² | Population | Households |
|-------------------------|----------|------------|------------|
| > 55                    | 20.2     | 4,900      | 2,150      |
| > 60                    | 7.4      | 700        | 300        |
| > 65                    | 2.9      | 200        | 100        |
| > 70                    | 1.2      | 0          | 0          |
| > 75                    | 0.6      | 0          | 0          |

#### Estimated areas, populations and households within Edinburgh Airport year 2011 Lden noise contours

| Contour Level<br>dB (A) | Area km² | Population | Households |
|-------------------------|----------|------------|------------|
| > 55                    | 37.0     | 16,850     | 7,100      |
| > 60                    | 13.6     | 3,300      | 1,450      |
| > 65                    | 4.9      | 450        | 200        |
| > 70                    | 1.9      | 50         | <50        |
| > 75                    | 0.8      | 0          | 0          |

#### Estimated areas, populations and households within Edinburgh Airport year 2011 LAeq, 16h noise contours

| Contour Level<br>dB (A) | Area km <sup>2</sup> | Population | Households |
|-------------------------|----------------------|------------|------------|
| > 57                    | 13.0                 | 3,300      | 1,450      |
| > 60                    | 6.8                  | 650        | 250        |
| > 63                    | 3.7                  | 350        | 150        |
| > 66                    | 2.0                  | 100        | 50         |
| > 69                    | 1.2                  | 0          | 0          |
| > 72                    | 0.7                  | 0          | 0          |

### 24 hours Lden contours



EDINBURGH AIRPORT Year 2011 L<sub>den</sub> Contours Actual Modal Split 73% W / 27% E

Night-time (23:00 - 07:00) - Lnight contours



EDINBURGH AIRPORT Year 2011 L<sub>night</sub> Contours Actual Modal Split 76% W / 24% E

# Noise Actions for 2013-18

The long-term objective is where possible to limit and reduce the number of people affected by noise from activities at Edinburgh Airport. The following actions detail how we will achieve this.

| Action   | Impact   | Timescale                     | Performance<br>indicator  | Approx.<br>estimate<br>of people<br>affected |
|--|--|-------------------------------|---|--|
| 1. Demonstrate we are doing all that is reasonably pra-  | cticable to minimise                                   | noise impacts                 | 5   |  |
| 1a. Quietest Fleet Practicable   |  |                               |   |  |
| We will continue to work with airlines to promote<br>the most efficient aircraft when introducing new<br>business to Edinburgh.  | Arrivals (A)<br>Departures (D)<br>Ground noise<br>(GN) | On-going                      | Track the annual<br>percentage<br>of Chapter 4<br>operations.<br>Contours changes.  | 16,850                                       |
| We will continue to review the landing fee<br>differential at least every year.  | A, D, GN   | 2014-18                       | Conditions of use<br>document changes<br>in charging.<br>Change to<br>contours.<br>Track percentage<br>within different<br>charging<br>categories | N/A  |
| 1b. Quietest practicable aircraft operations, balanced a   | gainst NOX and CO2                                     | emissions.                    |   |  |
| We will continue to promote a best practice guide<br>for departures to airlines operating at Edinburgh<br>Airport.   | D  | On-going                      | Contour changes.  | 16,850                                       |
| We will continue to promote Continuous Descents<br>and Continuous Climbs to airlines operating at<br>Edinburgh Airport.  | A  | On-going                      | Percentage of<br>CDAs achieved.<br>Contour changes.   | 16,850                                       |
| We will continue to fine aircraft in breach of noise<br>limits and increase the fine level if appropriate.   | D  | Review in<br>2014 and<br>2017 | Number of infringements   | 16,850                                       |
| We will continue to work with our partners in<br>Sustainable Aviation to develop and promote low<br>noise flight procedures through evaluation of future<br>operational methods and implementation of best<br>practice.  | A, D, GN   | Annual                        | Website.<br>Annual CSR  | 16,850                                       |
| We will continue to engage with our aviation partners to seek to improve adherence to the standard airport procedures.   | A, D   | On-going                      | Update the airport<br>consultative<br>committee   | N/A  |
| We will control ground running of aircraft engines.<br>To ensure that the environmental impact of aircraft<br>engine running on the local community is kept to<br>a minimum, aircraft operators with maintenance<br>commitments at the airport are expected to plan<br>their schedule to avoid the need for ground running<br>of engines at night from between 2300-0600<br>during weekdays and 2300-0900 at the weekend.<br>Only during exceptional circumstances is engine<br>running allowed between these times. | GN   | On-going                      | Number, location<br>and duration  | 100  |

| Action   | Impact                              | Timescale      | Performance<br>indicator   | Approx.<br>estimate<br>of people<br>affected |
|--|-------------------------------------|----------------|--|--|
| We will continue to prioritise stand allocation so as to minimise ground noise impacts.  | GN                                  | On-going       | Number of<br>aircraft on ground<br>noise sensitive<br>stands during<br>noise sensitive<br>periods. | 100  |
| In conjunction with our partners in Sustainable<br>Aviation we will continue to lobby for and seek<br>to support continual improvements in technology<br>and operations towards the ACARE goal of 65%<br>reduction in perceived external noise by flying<br>aircraft by 2050 relative to equivalent new aircraft<br>in 2000. | A, D, GN                            | On-going       | N/A  |  |
| 1c. Effective and credible noise mitigation schemes  |                                     |                |  |  |
| We will continue to offer a relocation assistance<br>scheme for those households within the airports<br>69db Leq noise contour, in line with Government<br>policy.   | A, D                                | On-going       | Number of requests made  | 0  |
| We will continue to benchmark our noise mitigation<br>and compensation measures with other comparable<br>airports  | Perceived<br>impacts                | 2015           | Publish a table  | N/A  |
| We propose to compare noise contours and the<br>number of people exposed with other airports<br>to understand if other noise mitigation schemes<br>have been more successful. We will then seek to<br>understand if this can be applied to Edinburgh   | A, D, GN                            | 2015           | Publish a table,<br>Take reasonable<br>action  | 16,850                                       |
| We will continue to honour the Edinburgh Airport vortex scheme.  | Perceived<br>impacts                | On-going       | Number of<br>properties<br>subjected to<br>vortex damage   | N/A  |
| 2. Engage with communities affected by noise impacts far as possible in airport noise strategies and communi   | to better understan<br>cation plans | d their concer | ns and priorities, refle   | ecting them as                               |
| We will continue to offer a free phone number for<br>complaints and enquires regarding aircraft noise.<br>Complaint data will be published in our CRR.   | Community<br>trust and<br>awareness | On-going       | Number of<br>contacts and<br>method of contact   | 16,850                                       |
| We will annually review our communication material to ensure relevance and ease of understanding.  | Community<br>trust and<br>awareness | Annually       |  | N/A  |
| We will continue to log all complaints relating<br>to aircraft operations and publish the statistics<br>quarterly.   | Community<br>trust and<br>awareness | Quarterly      | Number of callers,<br>events, month and<br>area  | N/A  |
| We will seek to acknowledge 100% of all complaints<br>and enquiries within 2 working days and respond<br>within 5 working days. Performance against this<br>will be published at the Airport Consultative<br>Committee*  | Community<br>trust and<br>awareness | On-going       | Response rate<br>tracker   | N/A  |

| Action   | Impact   | Timescale | Performance<br>indicator   | Approx.<br>estimate<br>of people<br>affected |  |
|--|--|-----------|--|--|--|
| We will publish a summary of consultation responses within 6 months of the close of this consultation.   | Community<br>trust and<br>awareness                          | 2014      | Publication of feedback report   | N/A  |  |
| We will publish our progress against the action plan<br>on an annual basis.  | Community<br>trust and<br>awareness                          | Annually  | CRR and % of actions complete  | N/A  |  |
| We will continue to direct all money raised by<br>noise infringements to the Edinburgh Airport<br>Community Board.   | Community<br>trust and<br>awareness                          | On-going  | Number of<br>infringements<br>and fines raised<br>published in the<br>CRR  | N/A  |  |
| In our newsletter to the local community we will report on engine running frequency and times  | Community<br>trust and<br>awareness                          | On-going  | Number of engine<br>ground runs  | N/A  |  |
| 3. Influence planning policy to minimise the number of noise sensitive properties around our airport   |  |           |  |  |  |
| We will continue to engage with the local<br>planning authority to ensure awareness of aircraft<br>operations is considered in the development of<br>sensitive land use.   | Land use<br>planning,<br>community<br>trust and<br>awareness | On-going  | Number of<br>interactions with<br>the local planning<br>authority          | N/A  |  |
| We will continue to commission and publish forecast Leq contours for aircraft noise in future masterplans.   | Land use<br>planning,<br>community<br>trust and<br>awareness |           | Publication of<br>forecast contours  |  |  |
| 4. Manage noise efficiently and effectively  |  |           |  |  |  |
| We will continue to operate and enhance our noise<br>management systems by various means such as<br>holding quarterly management system reviews,<br>analysing noise data periodically and reviewing<br>noise complaint trends. | Consistent<br>and effective<br>management                    | On-going  |  | N/A  |  |
| 5. Achieve a full understanding of aircraft noise to inform our priorities, strategies and targets   |  |           |  |  |  |
| We will continue to work with Sustainable Aviation<br>and local stakeholders to understand and address<br>the interdependencies of aircraft operations<br>management and noise.  | A, D, GN   | On-going  | Group<br>participation,<br>research<br>funding and trial<br>participation. | N/A  |  |