



**DEVELOPMENT OF LONDON CITY AIRPORT TO ACCOMMODATE 9 MILLION PASSENGERS  
PER ANNUM**

**Planning Application Reference: 22/03045/VAR**

**Local Planning Authority Reference: 23/00059/REF**

**Planning Inspectorate Reference: APP/G5750/W/23/3326646**

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**PROOF OF EVIDENCE OF JOHN STEWART**

**NOISE IMPACTS**

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# 1. Introduction

## Qualifications and Experience

- 1.1 I am the current Chair of HACAN East, the UK Noise Association, and the Campaign for Better Transport. I formerly chaired HACAN and AirportWatch (a national alliance of local groups opposing airport expansion). I am the Vice President of UECNA (Union Européenne Contre les Nuisances Aériennes / European Union Against Aircraft Nuisance).
- 1.2 I have decades of experience campaigning on noise issues, and have won awards from the Independent on Sunday, Green List, the Sheila McKechnie Foundation, and the Noise Abatement Society
- 1.3 I am the lead author on *Why Noise Matters: A Worldwide Perspective on the Problems, Policies and Solutions*, John Stewart, Francis McManus, Nigel Rodgers, Val Weedon, Arline Bronzaft (Routledge, 29 Apr 2016); *Location, Location, Location: An investigation into wind farms and noise*, (The Noise Association, 2006); *Roads for People: Policies for liveable streets*, (Fabian Society, 2001).

## Reason for Refusal

- 1.4 The reason for refusal is set out at paragraph 2.2 of HACAN East's Statement of Case.

## Scope of evidence

- 1.5 My evidence covers specific aspects of the noise impacts associated with the proposed expansion of London City Airport, concerning:
  - 1.5.1 The choice of noise contours by the Appellant in Volume 1, Chapter 8: Noise and Volume 2, Appendix 8.3: Air Noise of the Environmental Statement (December 2022).
  - 1.5.2 Developments in local circumstances since the date of the original application (planning permission 13/01228/FUL, allowed on appeal APP/G5750/W/15/3035673 dated 26th July 2016 to which the current section 73 application relates.

- 1.1 My evidence complements the evidence to be given by Dr Christian Nold, based on his expertise in Citizen Science and referring to his paper: 'Citizen Science Study of

Overflight Noise from New and Old Generation Aircraft at London City Airport', Dr C Nold et al (forthcoming).<sup>1</sup> I will not address that topic, which I leave wholly to him.

- 1.6 The planning evidence on behalf of HACAN East is being given by Jake Farmer of DLP Group. I am familiar with the planning policy relevant to airport development and to noise, but I do not have planning expertise and am not giving evidence on planning matters.
- 1.7 I am providing evidence on behalf of HACAN East. The evidence which I have prepared and provide for this appeal in this proof of evidence is true to the best of my knowledge and belief. I am aware that I must assist the inquiry and the Inspector, and I confirm that the opinions expressed are my true and professional opinions based on the facts I regard as relevant in connection with the appeal.

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<sup>1</sup> The official paper pre-print can be found here: <https://doi.org/10.21954/mtkx-h460>.

## 2. Noise contours

### Noise contouring methodology

- 2.1 Noise contour maps are one way of modelling the current or anticipated aviation noise impacts from a specific source. They make it possible to identify how many people live in areas where there is significant annoyance from noise and are used to measure progress against the Government's stated aim to limit and where possible reduce the number of people affected by noise. They allow planning decision makers to consider noise or projected noise from the relevant airport or other site within the likely affected area.
- 2.2 Noise impacts from fluctuating noise sources are represented as a single number through the LAeq,16h noise index. The history of LAeq,16h noise index is set out at paras 2.4 – 2.8 of the Civil Aviation Authority's ("CAA") 'Survey of Noise Attitudes 2014: Aircraft Noise and Annoyance' ("SoNA") [CD3.7.4]. At para 1.3, this report states that "The current UK civil aircraft noise exposure index, LAeq,16h was adopted in 1990, based on an aircraft noise attitude survey undertaken in 1982 and reported as the UK Aircraft Noise Index Study (ANIS) in 19853. The 57 dB LAeq,16h contour was chosen as the threshold of community annoyance because it 'indicated a marked increase in some reported measures of disturbance', with 63 and 69 dB LAeq,16h representing medium and high annoyance and subsequently incorporated into planning policy guidance." This was streamlined with the 2003 Air Transport White Paper which provided one figure: the 57 dB LAeq,16h contour [CD3.7.4, p. 77].
- 2.3 The figure of 57 dB LAeq,16h for the approximate "onset of significant community annoyance" was re-affirmed in the Government's 2013 Aviation Policy Framework [CD3.5.1, pp. 57–58]. This is an average measurement taken over a 16-hour day. The readings are taken over a period of a few months. From that, an annual average is produced. However, 57dBLAeq has now been revised downwards, following the publication of the SoNA in 2014 [CD3.7.4, p. 18]. The Government now expects airports to assess the number of people impacted at 54 dB LAeq and 51 dB LAeq. SoNA did not look at areas below 51dBLAeq.
- 2.4 There is another metric sometimes used called Lden. This is the one favoured by the European Union and has been used by UK airports when drawing up their Noise Action Plans which, prior to Brexit, had to be approved by the European Commission. Lden averages the noise out over an 8-hour day, a 4-hour evening and an 8-hour night, with 5 and 10 decibels added to the evening and night figures respectively to account for generally lower background noise

levels at those times. London City Airport has used both LAeq and Lden throughout its most recent draft Noise Action Plan [CD3.7.33] Lden is possibly less relevant to London City Airport, as it has no night flights.

2.5 The latest World Health Organisation Guidelines (2018) argue that the onset of community noise annoyance starts at 45Lden [CD3.7.6]. While these guidelines are not Government policy, they are clearly relevant because of the large body of evidence underpinning the recommendations and the rigorous evidence-based methodology. The 2018 guidelines update the guidelines produced by WHO in 1999 and night guidelines it published in 2009. The guidelines apply to all European countries (not just those within the European Union). It was published by the WHO European office, but they hope and expect it will influence noise policy across the world. The report was peer reviewed. It used 'benchmarking' when deciding which guidelines to recommend. When 10% of people said they were annoyed by a particular noise source (during the day) at a given level, that level became the benchmark in terms of the recommended guideline for acceptable noise levels from a public health perspective. The report found that 10% of people were annoyed by daytime aviation noise at 45Lden. This, therefore, became the benchmark and informed WHO's conclusion that "For average noise exposure, the GDG strongly recommends reducing noise levels produced by aircraft below 45 dB Lden, as aircraft noise above this level is associated with adverse health effects" [CD3.7.6, p. xvii].

2.6 Metrics are used to define contours. So, for example, if LAeq is used as the metric, the 57-decibel contour includes everybody who experiences noise at 57 dB LAeq or higher. A 57-decibel contour map is drawn up. The metric used can significantly impact the size of the contour. As an illustrative example, a 2010 analysis of the British Airports Authority's Noise Strategy for Heathrow Airport carried out by the Aviation Environment Federation, found that approximately 258,000 people lived within Heathrow's 57 decibel contour (as measured by LAeq) but that this rose to around 720,000 if the 55Lden metric was used [CD3.7.35, p.12].

## **2.7 Issues with the Appellant's approach**

2.8 The Appellant's noise consultants, Bickerdike Allen, showed the noise impact of the 51 and 54 contours, as well as the Lden [CD1.39]. It also assessed the impact using additional metrics.

2.9 However, the Appellant presents the impact on people outside the smaller contours simply as background information rather than a basis on which to take action. There is evidence that people outside the 51 dB LAeq contour are

annoyed by noise from London City aircraft. It is reflected in the Citizen Science Study produced by HACAN East with Doctor Christian Nold, in the fact that most of the London boroughs which initially objected to the proposals lie outside the contour and that the majority of HACAN East's supporters, who directly experience impacts, live beyond it. Almost 100% of those who support us do so because they are disturbed by the noise of the aircraft.

- 2.10 Complementary metrics are required to be used to capture the full noise impact. When the LAeq metric averages out the noise it includes the days when there are no planes and the times of the day when there are no planes. A 'single-mode contour' would more accurately capture the noise experienced by people overflown. This only measures the noise during the days when planes are flying over a particular community. This is especially relevant for areas such as South East London, which only get planes (on easterly arrivals) about 30% of the year but, when they do, the impact is significant (particularly given London City's concentrated flight paths).
- 2.11 The second complementary metric required is the 'N' contour. This measures the number of planes going over above a chosen decibel level. So, for example, the N65 decibel contour indicates the number of planes above 65 decibels which pass over a property on any given day.
- 2.12 These two metrics have been tested in the study done for the airport by Bickerdike Allen [CD1.39]. They reveal a high number of people impacted by noise. The information on the N contour is found in tables 8.3.49 - 8.3.63. The information on the single mode contour is in tables 8.3.64 - 8.3.93.
- 2.13 A third complementary metric required is one which reflects the cumulative impact on areas which experience noise from two airports, such as Heathrow and London City. This is the case with many residents under the London City flight paths. It is not possible to put an exact figure on this because the work has not been done to measure and report on noise levels, but the majority of the areas overflown by London City aircraft are also overflown by Heathrow aircraft.
- 2.14 Unless these three complementary metrics are applied in practice, an accurate picture of the numbers impacted, and the extent to which they are impacted, cannot be built up and appropriate action taken.
- 2.15 The current unwillingness to look beyond the 51DbLAeq contour means that the mitigation proposed by the airport – that planes flown in the additional seven hours on Saturdays will be new generation aircraft, which the airport deems to be quieter during take-off and landing – will in practice offer little or no mitigation to people impacted by noise nuisance outside the contour, who

will be overflowed by a greater number of aircraft than at present, during weekend hours when none are seen at present.<sup>2</sup>

### **Impact on overflowed residents**

- 2.16 In its recent draft Noise Action Plan, London City estimates that 75,200 people are within the 55Lden contour and 88,300 within the 54LAeq contour. However, more people than this are impacted by noise. The CAA estimated in 2016 (after all the London City flights were concentrated), that 331,00 people were directly overflowed by arriving aircraft at less than 4,000ft and 403,000 people at less than 7,000ft. 416,000 were directly overflowed by departing aircraft at less than 4,000ft and 531,000 at less than 7,000ft [**CD3.7.44 p. 24**]. The CAA acknowledged that some people would be overflowed by both arrivals and departures but did not make a calculation or estimate the numbers of people overflowed.
- 2.17 These are high figures. A sizeable majority of these people live outside the official contours. Not all will, of course, be disturbed by the noise, but the spread of HACAN East's supporter base, the number of boroughs, some many miles from the airport, who have objected to the application as well as the findings of our Citizen Science Report [**CD3.7.20**], suggest that a sizeable number are.

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<sup>2</sup> Dr Christian Nold will give further evidence on the extent to which these new generation aircraft can truly be said to be quieter.

### 3. Local conditions

- 3.1 This section will focus on some of the specific local conditions that HACAN East have identified that mean that the noise impacts of London City Airport are unusual and that they will be more severe now than they would have been at the time when the original application, to which the current section 73 application relates, was refused (May 2015), or when it was allowed on appeal (July 2016).

#### **Density of population**

- 3.2 London City Airport is unique among airports serving London, in being very close to residential properties. Moreover, 11 of the 20 most densely populated local authority areas in England are overflown by London City aircraft. The 'Mid-Year Population Estimates, UK, June 2021' [CD3.7.31, Sheet MYE5], produced by the Office for National Statistics, show very high population densities in some of these overflown boroughs. Sheet MYE5 showing 'Population density for local authorities in the UK, mid-2001, mid-2011 and mid-2021' indicates that the most densely populated borough, Tower Hamlets has 15,794 people per km<sup>2</sup>. Lambeth, in fourth place, has 11,844, Southwark, in seventh place, has 10,609, and Newham in eighth place, has 9,687. All these boroughs are heavily overflown by London City aircraft.
- 3.3 Thus, although a relatively small airport, London City overflies and potentially disturbs a considerable number of people. Table 8.3.36 of Appendix 8.3 to the Appellant's Environmental statement indicates that some 93,500 people lived within the 55Lden contour in 2019 [CD1.39, p.25]. This is more than the numbers of people who lived within the 55Lden contours for Brussels, Amsterdam and Madrid airports in 2013, according to Airports Commission data [CD3.7.37, p.9]. The closeness of the residential properties and the population density of the areas overflown make the noise impacts of London City unlike those of any other airport in the UK, with the possible exception of Belfast City Airport.
- 3.4 Since 1998 no flights have been permitted after 12.30pm on Saturdays. But our understanding is that, although technically permitted, flights did not routinely take place on Saturday afternoon and evening in the preceding years [CD3.7.36]. The proposed change is, therefore, significant for this densely populated area.
- 3.5 Inside the noise contour area, which is close to the runway, the mitigation proposed is only 5dB (on departure). This needs to be balanced against the

proposed increase in early morning flights and the extended flying time on Saturdays.

- 3.6 There has been no attempt to monetarise the noise impacts of the proposals on the population. HACAN East's economic evidence as presented by Dr Alex Chapman, will expand on this.

### **Concentration of flight paths**

- 3.7 London City Airport concentrated its flight paths in February 2016. This was after the original application was submitted but before it was allowed on appeal (July 2016). The concentration of the flight paths resulted in at least a four-fold increase in complaints to London City Airport.<sup>3</sup> Although the total number of people overflown fell, the impact on those under the concentrated flight paths increased. Concentration was a seismic change. Many people who had been previously unbothered by the aircraft became disturbed by them. They found themselves living under a narrow flight path. Except on the days the wind direction changed, every aircraft landing or taking off went over them. The only predictable respite was the 24 hours during the weekend. The concentration of the flight paths is a major reason why this respite period is so valued.

- 3.8 Since the evidence from our Citizen Science Study is that the new generation of planes are not noticeably quieter than old generation planes, the only noise mitigation that would be truly impactful for residential amenity would be the complete redesign of flight paths to enable respite through the alternation of flight paths. The proposal to fly an extra seven hours on Saturday diminishes the existing respite.

### **Development within and outside the noise contour**

- 3.9 There has been substantial residential development in the vicinity of the airport since the 2016 appeal decision and the building of new homes, particularly in the Royal Docks area, continues apace. A significant amount of new residential development is planned within and close to the noise contour over the coming years. Specifically, £8bn is being invested in major regeneration projects in the Royal Docks area over the next 20 years.<sup>4</sup> This will include 30,000 new homes expected to be built by 2038. This will increase the numbers of people who will be affected by noise from the aircraft.

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<sup>3</sup> Question from Caroline Russell during Mayor's Question Time, 13 July 2017, (Ref: 2017/2794) <https://www.london.gov.uk/who-we-are/what-london-assembly-does/questions-mayor/find-an-answer/london-city-airport-noise-complaints>.

<sup>4</sup> 'Royal Docks: Opportunity' homepage, <https://www.royaldocks.london/opportunity>.

## 4. Summary and conclusion

- 4.1 LCA's choice of noise contours has significant limitations in terms of accurately reflecting the noise impacts of the appeal proposal on overflowed residents. The contours chosen by the Appellant to take action on noise do not adequately reflect the true noise impact of the airport. There is evidence that people outside the 51dB LAeq contour are annoyed by noise from London City aircraft. It is reflected in our Citizen Science Study, in the fact that most of the London boroughs which initially objected to the proposals lie outside the contour and that the majority of our supporters live beyond it.
- 4.2 We suggest three complementary metrics are required to provide a more accurate picture: a single-mode contour; the use of the N contour; and a contour which captures the impact of being overflowed by more than one airport. We suggest, further, that the airport should use this information when considering current and future plans.
- 4.3 Specific local circumstances make this airport's impact unlike others of comparable or even greater size. London City is situated very close to residential properties. Moreover, 11 of the 20 most densely populated local authority areas in England are overflowed by London City aircraft. The closeness of the residential properties and the population density of the areas overflowed make the noise impacts on London City unlike any other airport in the UK, with the possible exception of Belfast City. It means that, although a relatively small airport, more people live within its 55Lden contour than live within the same contour for Brussels, Amsterdam, or Madrid airports.
- 4.4 Changes in circumstances on the ground have made restrictions on flight times and numbers *more* not less essential since the original application was submitted in 2015 and allowed on appeal in 2016. First, the concentration of flight paths in February 2016 led to affected residents being overflowed more intensively and resulted in a four-fold increase in complaints to London City Airport. Although the total number of people overflowed fell, the impact on those under the concentrated flight paths increased. Second, substantial new residential development of upwards of 30,000 new homes is anticipated in the Royal Docks area by 2038, increasing the number of people who will be affected by noise from the airport.
- 4.5 The only predictable respite for overflowed residents is the 24 hours during the weekend. This is why the respite period is so deeply valued by local communities.