

## Departure Report from the CAA

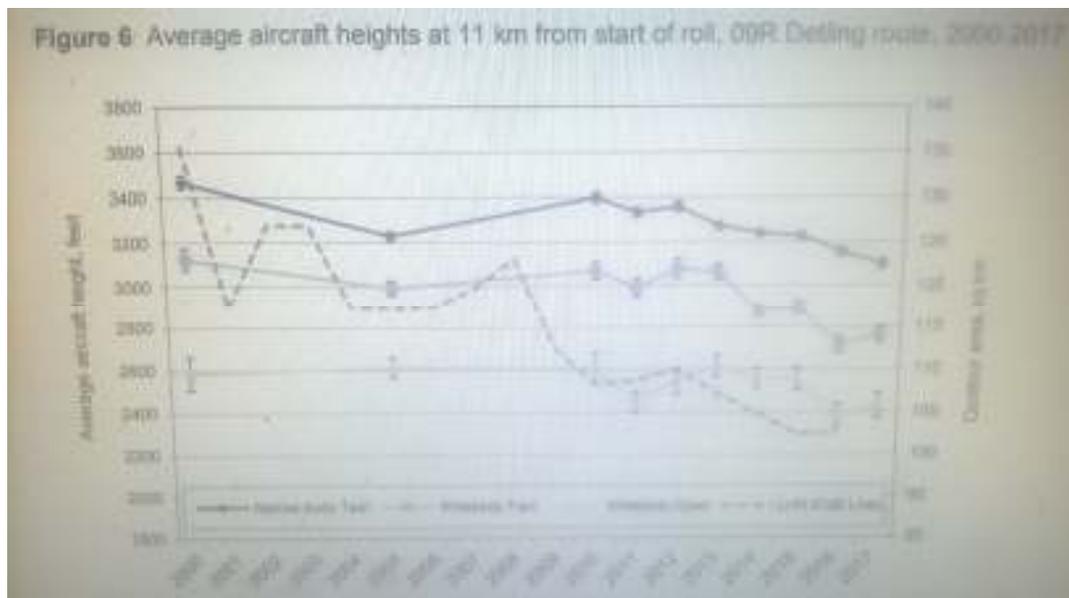
When I tweeted, without comment, some of the key findings of this report last Friday, the day it was published, it caused an almost instant flurry of outraged tweets in response. What particularly annoyed people was the report's finding that, although planes on average are lower on departure than they were, they are making less noise.

I want to have a look at that claim in detail but first it is worth putting the report in context. It is a major report by the Civil Aviation Authority (CAA), 100 pages in length, and covering many of the questions communities have been asking over the last few years. And, indeed, a number of community groups had pressed for this work to be done.

It has a fairly narrow remit. It looks at departures from Heathrow; what heights they are at; and what noise they are creating. It touches on one or two related topics but doesn't stray far from its remit. So it doesn't assess the impact on communities of the increased concentration of aircraft along the centre-line of the Noise Preference Routes which has been happening over the last decade or so and has accelerated in recent years. Nor does it deal directly with departures beyond about 11kms from the airport. And of course it is not about arrivals.

The report came up with five key findings:

### 1. Planes are lower



It studied the heights of different planes from 2000 - 2017. It shows that, typically, they are flying lower than they were. They can be anything from 200ft to in some cases 400ft lower. On average they are about 300ft lower than they were in 2000, though in the intervening years there has literally been 'ups and downs'. For example average heights fell in 2011 and but rose again in 2012. There was no one point when planes became lower. (The dotted line represents the average fall in noise levels – which I'll deal with shortly – the other lines represent different types of planes).

The report identifies three reasons for fall in average heights:

- There are a greater number of larger planes which can struggle to climb as rapidly as the typical smaller plane
- The planes are fuller and heavier than they were
- New technology gives the airlines “more scope for the optimisation of thrust to minimize stress, noise, emissions and costs”, i.e. it can be cheaper for the airlines to climb more slowly and technology allows it.

## **2. Planes have become quieter**

This is the bit that got everybody going! So let's try and unpack what the report is saying. A plane flying 200-400ft lower will be *typically* 2/3 decibels noisier. But since 2000 the typical plane using Heathrow has become more than 2/3 decibels quieter. It is this which enables the report to say that planes, despite being lower, are on average quieter.

It is also worth noting that the CAA has used the 57dbLAeq contour in its report (that is, the noise averaged out over 16 hours) as its preferred measurement. In 2000 the 57 contour at Heathrow covered 135.6 sq km and 275,000 people (this is arrivals and departures). By 2016 - the last year for which I could get figures - the area had fallen to 101.5 sq km and the population had dropped to 247,000. HACAN has been critical of the averaging out method but the fall in the contour size can be put down to quieter planes. The overall fleet using Heathrow is quieter than it was in 2000.

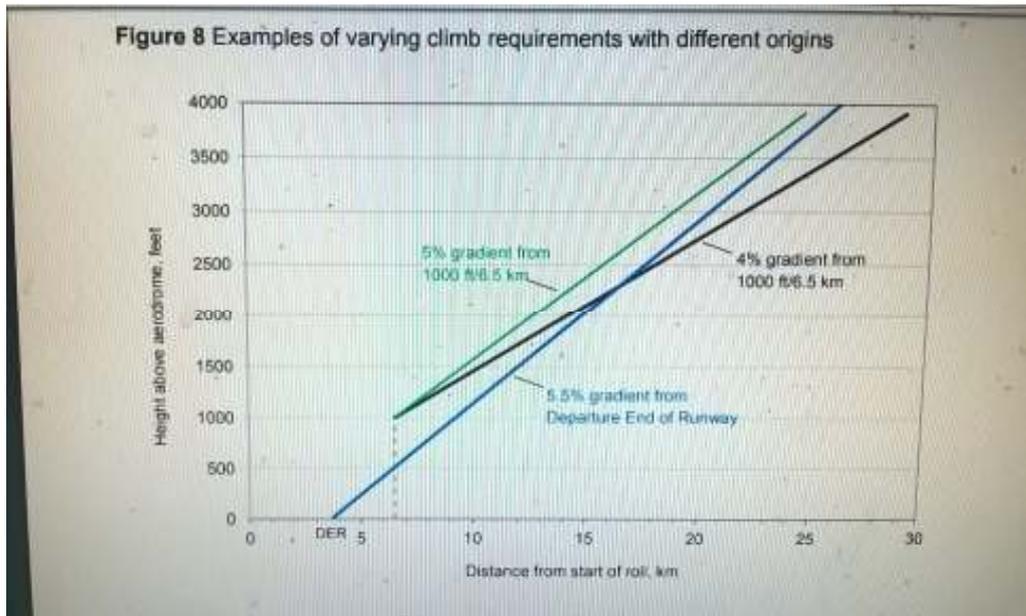
None of this is to say that living under the departure routes is quiet. In fact, the report might have been better to describe planes as 'less noisy' rather than 'quieter'. Even a 'quiet' plane is noisy! And, as already pointed out, the report didn't assess the impact of greater concentration on noise annoyance. That has undoubtedly increased noise over many communities. And the report has concentrated on average noise and the average plane. But, in my view, the report is correct in its finding the *typical* plane, although flying a few hundred feet lower than it was, is making less noise than it would have done in years gone by.

## **3. A steeper angle of ascent can have winners and losers**

Airlines have some choice about the angle of ascent they choose but it is quite limited by international regulations (which the report explains in some detail). But the report's essential finding is this: it found that if A380s use a steeper departure procedure they a) reduce the *loudness* of the noise for people right under the flight path and increase it for those to the side but b) increase the *duration* of the noise for everybody. It would be the same for other planes. HACAN takes the view that the priority should be people directly under the flight paths.

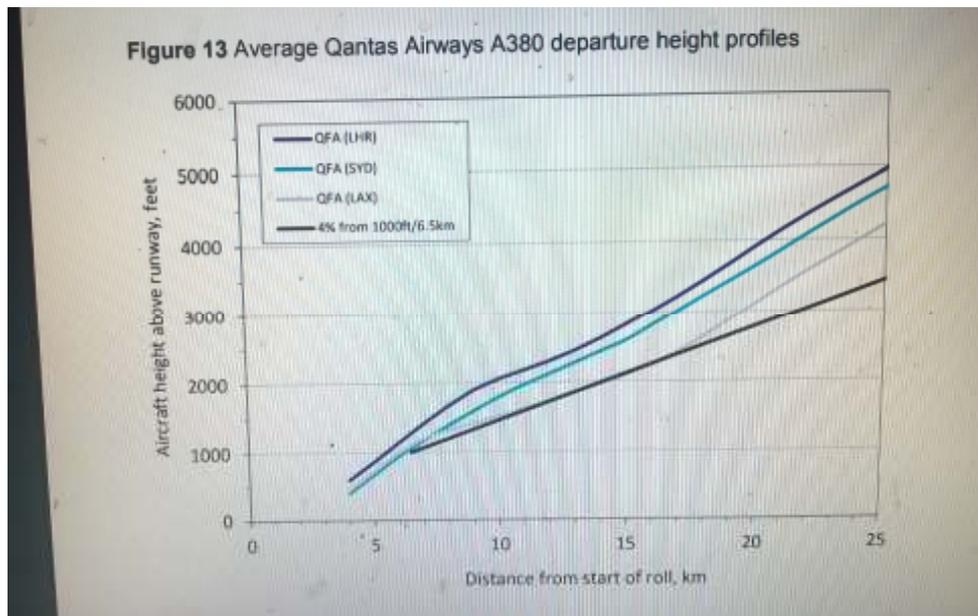
## **4. Heathrow's take off rates are no worse than other large airports**

On paper it can look as if Heathrow is lagging behind other comparable airports in respect of steeper ascents. The report suggests this is not the case. It gives the example of Paris – illustrated below. The Paris rate of ascent is 5.5% whereas Heathrow's is 4% but, because the start point is different, the impact on those on the ground is much the same.



**5. The rates of ascent of A380s are no worse than at other airports**

Communities expressed particular concern about the rate of ascent of A380s departing Heathrow; that it was lower than at other airports. The report found it is much the same as at other airports, as the example below shows:



**6. Other measures to cut departure noise over communities**

The report has a short but interesting section on the opportunities and limitations of Performance Based Technology (PBN), the new technology which is coming in. PBN routes, which will be more direct should avoid many of the current conflicts with flight paths from other airports and allow aircraft to take off more rapidly and remain high many miles from Heathrow.

### **Why I believe the report is important**

- It has provided important information about why planes are lower
- It confirms that individual aircraft are *typically* becoming less noisy (although sometimes the improvements are marginal). I stress 'typically' because some planes in operation are noisier than expected
- It lays out who the winners and losers will be if steeper descents are introduced
- It provides useful international comparisons on departure procedures

All this is useful information from, I believe, a credible source which can guide us in our campaigning. In the autumn HACAN will be mounting campaigns on a number of issues including pressing for steeper ascents on departure, less concentration down the centre-line of the NPRs and for the new PRN technology to be used to improve the quality of life for residents. I think this report provides important data we can use.

**John Stewart**