Heathrow Late Evening Departures Noise Impact – Corrective Remedial Action Steps

Regressive Realities - Planes are Flying Lower

Source: CAA

Figure 21 Average aircraft heights through easterly DET gate, 2000-2017

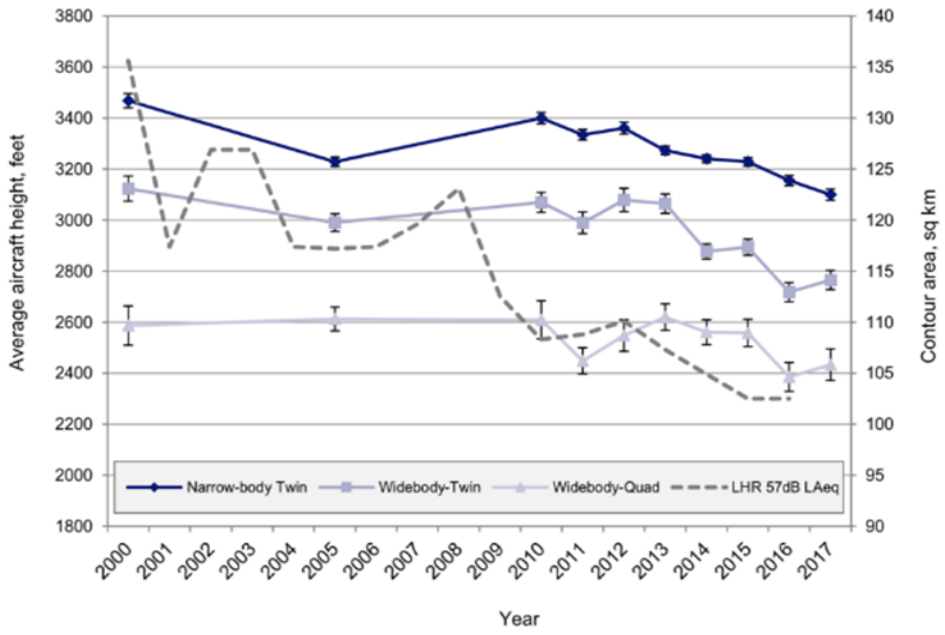
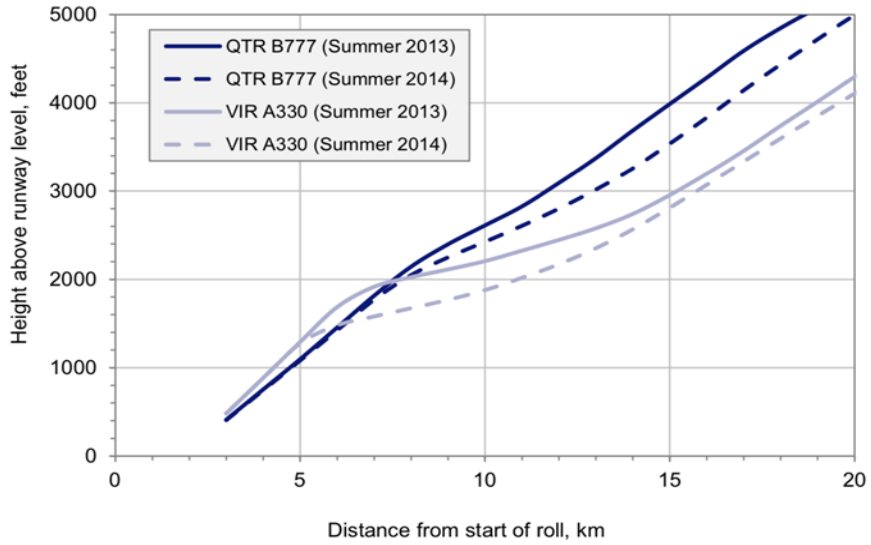


Figure 34 Average height profiles for Qatar B777-300ER and Virgin A330 departures on easterly Detling route



Likewise, the results for the Virgin Atlantic A330 in **Figure 34** show that at some point between 2013 and 2014 the airline operator modified its departure procedure for this type, possibly commencing the initial acceleration and flap retraction phase of the departure earlier than before, causing the aircraft to be lower further along the departure profile.

➢ **Communities are hearing more noise events much further out**

CNG Jan 2020

… and so plane noise is Louder

e.g. Virgin Atlantic VS 411 Departures scheduled at: 22.35

(measured at East Molesey i.e. approx. 12-14 km from start of roll)

Measurement	
Date	20190626
Time	22:54:27
Airplane	40683e VIR411Y
Country	United Kingdom
Decibels	80
Height (m)	488 = 1601 ft
Velocity (km/h)	401
Distance (km)	1.6
Vertical rate (m/s)	5.2
Your location and device	
Latitude	51.40
Longitude	-0.35
iPad5,3 / 12.3.1	
Serial# 638F443B-33C5-46BB-9A75-09864114543D	

Measurement	
Date	20190625
Time	23:04:09
Airplane	40675e VIR411Y
Country	United Kingdom
Decibels	75
Height (m)	617 = 2024 ft
Velocity (km/h)	487
Distance (km)	1.5
Vertical rate (m/s)	8.1
Your location and device	
Latitude	51.40
Longitude	-0.35
iPad5,3 / 12.3.1	
Serial# 638F443B-33C5-46BB-9A75-09864114543D	

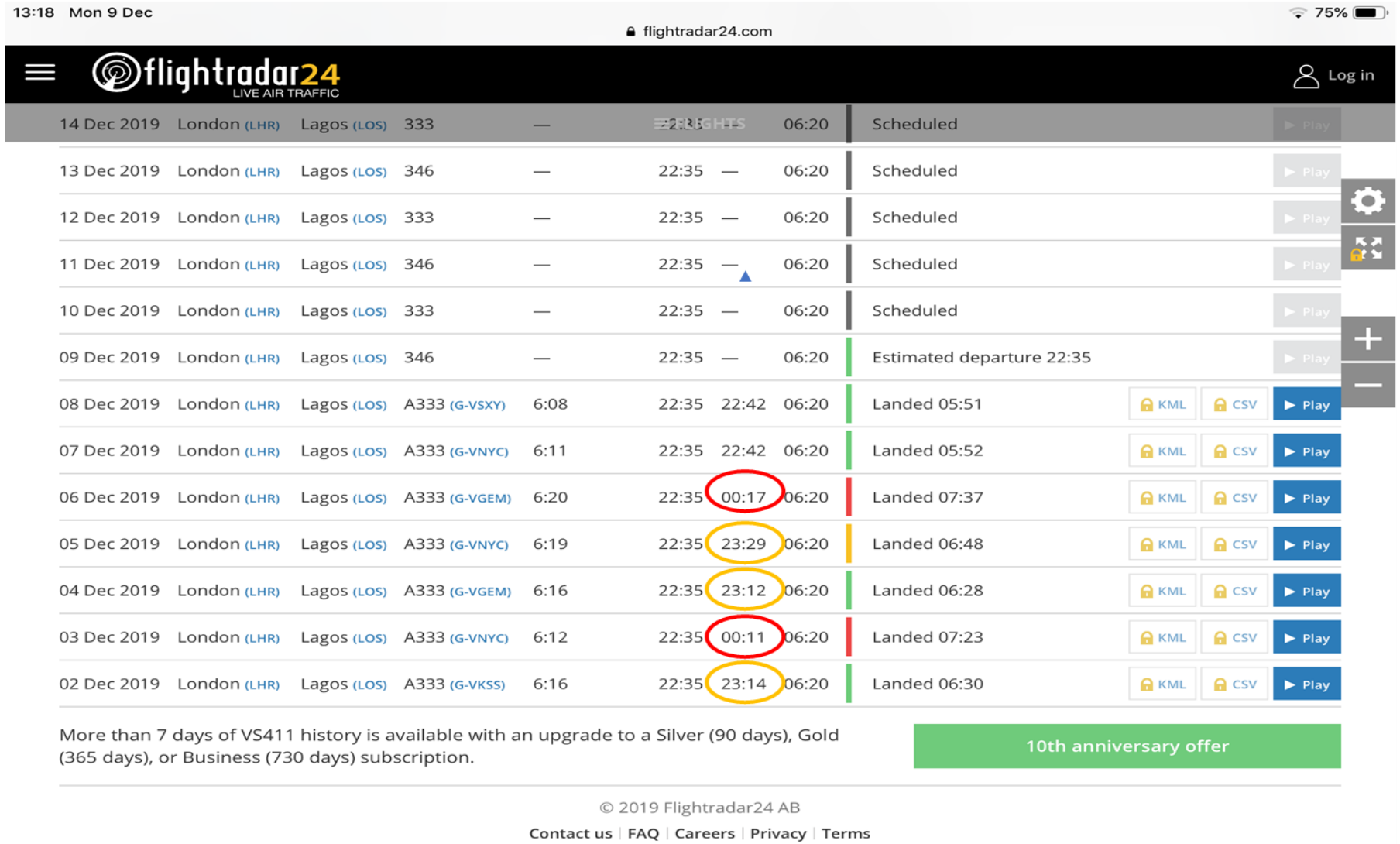
75-80 dB LAmax
around 23.00 and later

Measurement	
Date	20190913
Time	23:09:35
Airplane	400f0b VIR411Y
Country	United Kingdom
Decibels	77
Height (m)	488 = 1601 ft
Velocity (km/h)	480
Distance (km)	0.7
Vertical rate (m/s)	8.8
Your location and device	
Latitude	51.40
Longitude	-0.35
iPad5,3 / 12.4.1	
Serial# 638F443B-33C5-46BB-9A75-09864114543D	

Source: Explane (Note: dB readings match Heathrow Web Trak)

CNG Jan 2020

… and Late: beyond 23.00 … and beyond 23.30
e.g. Virgin VS 411 flights often miss departure scheduled slots



CNG Jan 2020

… Planes need to get higher with more thrust to get quieter

Table 3: Departure Lmax levels by aircraft grouping

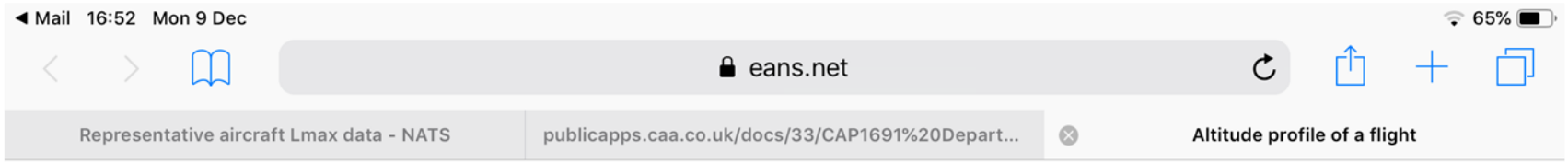
Height (ft)	Turbo-prop	50 seat regional jet	70-90 seat regional jet	125-180 seat single-aisle 2-eng jet	250 seat twin-aisle 2-eng jet	300-350 seat twin-aisle jet	400 seat 4-eng jet	500 seat 4-eng jet
				e.g. A320/737		e.g. 777 or A330		e.g. A380
1000-2000	78-71	78-70	85-75	85-75	92-83	90-81	92-84	91-84
2000-3000	71-67	70-65	75-68	75-70	83-77	81-75	84-79	84-80
3000-4000	67-64	65-60	68-64	70-66	77-73	75-71	79-75	80-76
4000-5000	64-62	60-57	64-61	66-63	73-69	71-67	75-72	76-73
5000-6000	62-60	57-55	61-58	63-60	69-66	67-64	72-69	73-71
6000-7000	60-58		58-56	60-59	66-64	64-62	69-67	71-68
7000-8000	58-56		56-56	59-58	64-61	62-60	67-64	68-66
8000-9000	56-56		56-55	58-57	61-59	60-58	64-62	66-65
9000-10000	56-55			57-56	59-58	58-57	62-60	65-63
10000-11000				56-56	58-57	57-56	60-60	63-62
11000-12000				56-56	57-56	56-55	60-59	62-60
12000-13000				56-55	56-56		59-58	60-59
13000-14000					56-55		58-58	59-58
14000-15000							58-57	58-55
15000-16000							57-57	
16000-17000							57-57	

Example - Less than 65dB day-time annoyance measure

- Narrow bodied twin 737/A320 type need to be above 4,500ft
- Wide Bodies Twin 777/A330 type need to be above 5,500ft
- Quad Engine A380 needs to be above 9,500ft

Source NATS/CAA Ancon Model

… Planes do not currently use operational capability to mitigate noise impact when departing from Heathrow

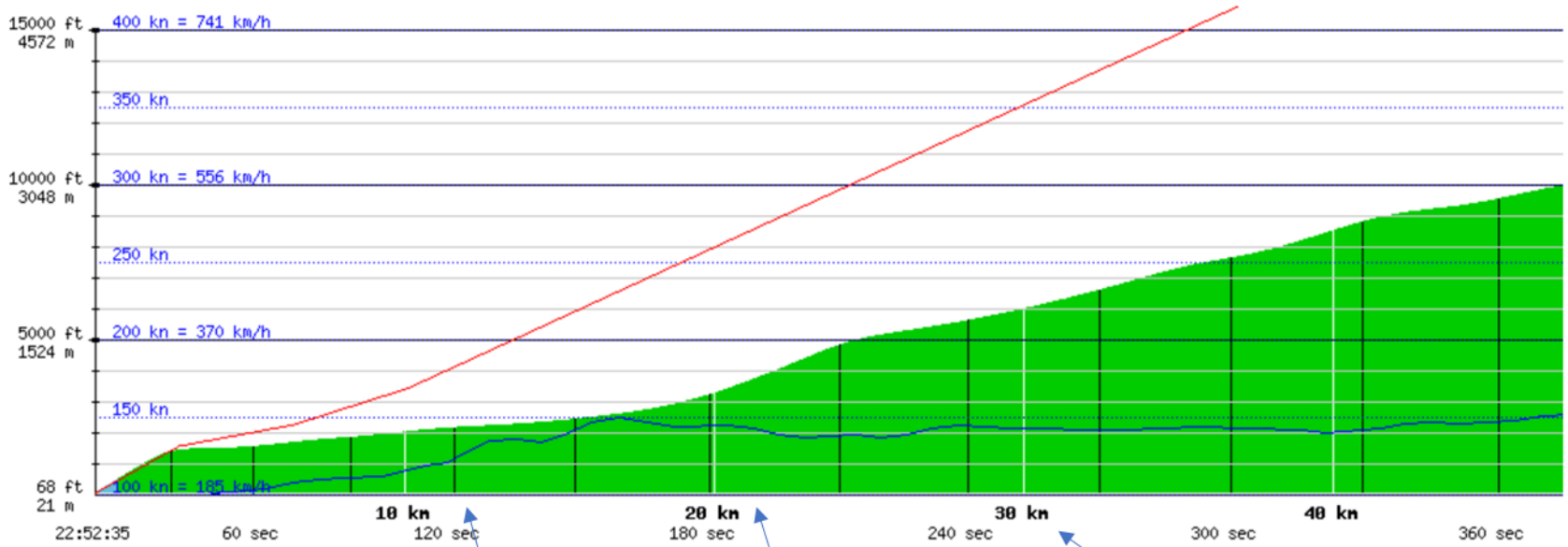


Altitude profile of a flight

Date: 26.06.2019/22:52:35 (Wednesday)

Details: A333 / AzB-Klasse: S6.1

Average Altitude Profile for class of plane



Measured Altitude Profile for flight VS411 out of LHR

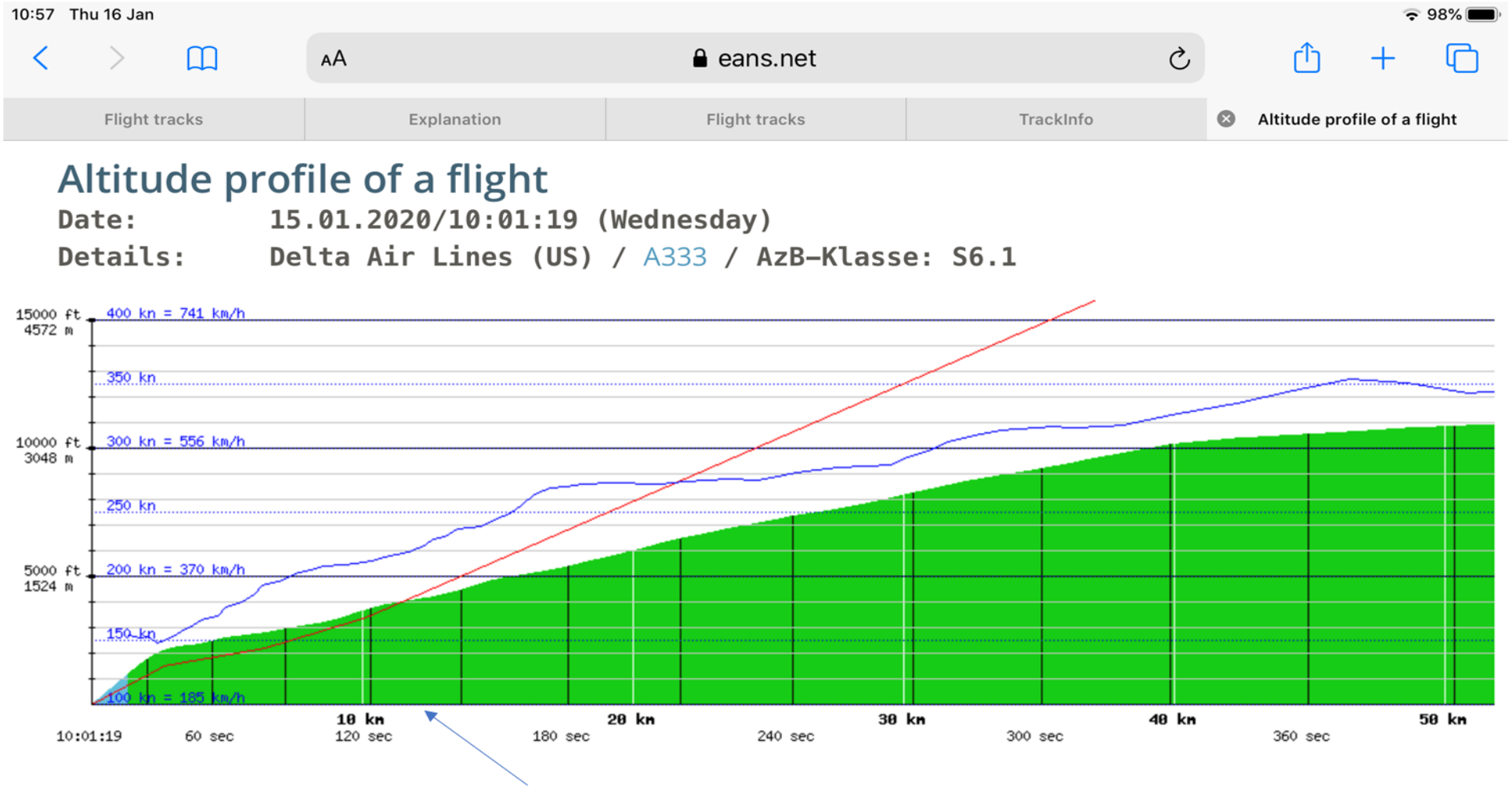
80dB East Molesey

71dB Cobham

~65dB 30km

CNG Jan 2020

The same class of plane regularly exhibits a steeper climb out of Amsterdam Schiphol showing capability…



At the equivalent distance of East Molesey, the plane is over 4,000ft i.e. double the height

CNG Jan 2020

… Exacerbated by a regression to tighter concentration within a SID (noise preferred route) e.g. an 800m deviation and 'PBN style' flight path tightening occurred in the MID SID in 2016, concentrating more flights over a highly densely populated area

14:30 Mon 9 Dec

publicapps.caa.co.uk

Figure D1 Heathrow easterly Midhurst departures
1 April to 30 June 2016

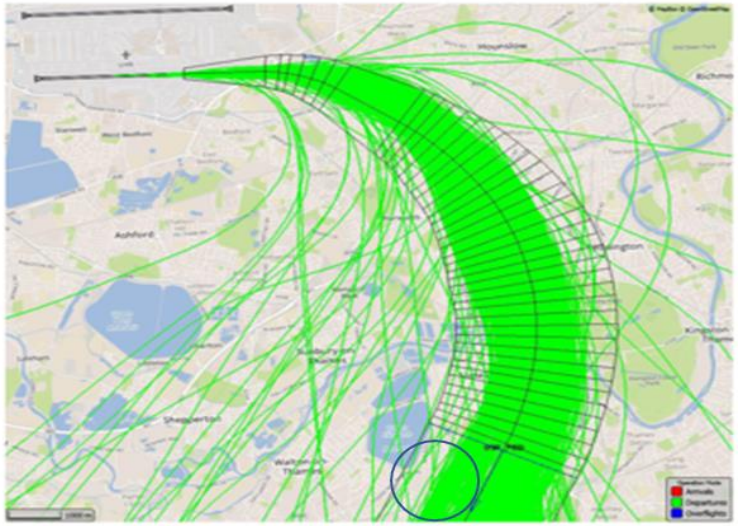


Figure D2 Gate plot of all easterly Midhurst departures
1 April to 30 June 2016

14:30 Mon 9 Dec

publicapps.caa.co.uk

71%

CAP 1691 Appendix D: Variation of departure tracks caused by different interpretations of conventional routes

Figure D3 Heathrow easterly Midhurst departures
1 July to 31 October 2016

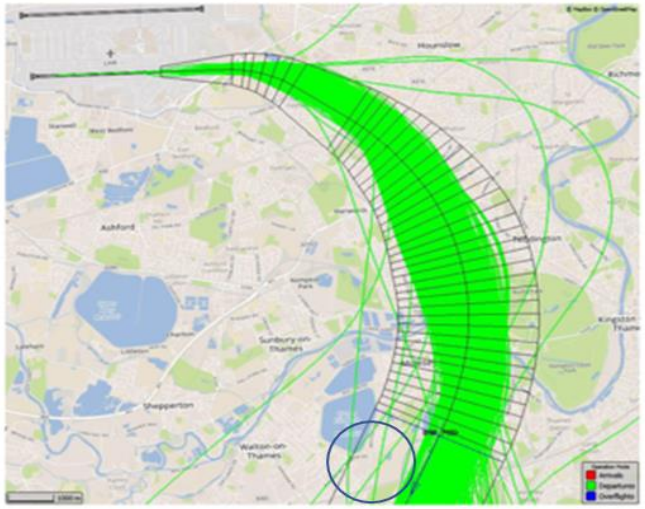


Figure D4 Gate plot of all easterly Midhurst departures

All these factors lead to a cumulative effect on local communities

CNG Jan 2020

Conclusions and Recommendations

Conclusions

- **Planes are flying lower, late and louder in 2019 than 5 years ago, to the detriment of communities**
- **Concentration of flight paths has occurred by 'creep'; unfairly impacting affected communities**
- **Planes have an operational capability to climb more steeply than is deployed in practice at Heathrow (unlike numerous other airports globally)**
- **The balance between costs and community impact is now skewed against communities**
  - ***The CAP 1691 report suggests that noise (dB) needs to be lower and existing controls and measurement protocols improved, with knowledge now in-hand, to address community concerns***
- **Regulation is outdated and poorly enforced (particularly against 'bad actor' airlines)**

CNG Jan 2020

Recommendations

- **Immediate return to pre 2014-16 flying envelopes (plane heights and dispersion) as baseline to address the 'creep'**

- **Department for Transport ("DfT") to evolve regulations to propose new legislation where necessary, to incorporate latest knowledge and capabilities (e.g. measurement protocol, aircraft capability) to better balance community noise concerns; and then apply disciplined enforcement**

    - **Note: DfT guidance says that noise is the first priority in all cases up to 4000ft and then up to 7000ft is equal priority with carbon emissions (Air Navigation 2017)**

    - **In terms of setting regulations, these should be underpinned by independent health studies overseen by the Dept of Health and DEFRA and implemented in regulations set by the DfT**

- **Fundamentally, authorities, Heathrow and airlines to ensure that planes utilise operational capabilities to climb much more steeply from Heathrow to mitigate noise impact across many affected communities, especially in the shoulder period**

CNG Jan 2020