

*Third annual review: July 2019*



# **Monitoring Gatwick's promises: Air traffic over West Tunbridge Wells**

Langton Green • Rusthall • Tunbridge Wells

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# Appeal to Gatwick Airport

- Gatwick, you appear to be walking away from the majority of key promises you made in 2016 (see our Report Card on slide 5).
- And now you plan to punish us even more.
- Please show us it isn't so.



# Three years and waiting



In June 2016, as a result of widespread protest (especially from newly constituted **Noise Campaign Groups** - see ref. 1, final slide) Gatwick Airport published an **Arrivals Review** (ref. 2). The **Review** promised changes in order to reduce noise impacting communities newly affected by the 2013 flightpath changes. To the east of the airport (served by Runway 26), exposed to overflights 7 days out of 10, these communities include **West Tunbridge Wells** as well others north and south, such as Penshurst, Tonbridge and Crowborough.

## Comments Year 3 (July 2019):

- Gatwick Airport has failed to make any significant progress in the majority of its key 2016 promises (see next slide).
- The only progress made so far has been on the Airbus 'whine' (actions taken by airlines and others).
- This year's report card shows no measurable improvements in: shift back to pre-2013 flightpaths, or descent angles, altitude or altitude variation.
- More than one in four flights arriving during the first hour of the 'night quota period' were spill-overs.
- The same airports of origin remain the most associated with spill-overs.

For all details related to background photographs used in this report, see slide 18.

For details regarding community noise groups , visit [www.twaang.org.uk](http://www.twaang.org.uk), [www.gatwickobviouslynot.org](http://www.gatwickobviouslynot.org), etc.

# Report card: three years on from Gatwick's 2016 Action Plan



Plan Ref.	Summary description	Slides	July 2017	July 2018	July 2019	Comments (July 2019)
Imm-01	<u>The Airbus A320 'whine'</u>	-	✓	✓	✓	Total elimination achieved.
Imm-06 Imm-07	<u>Continuous Descent Approach</u> Improved performance from 8,000 feet. [This implies <b>average descent angle</b> closer to 3° per international best practice.]	11-14	✗	✗	✗	<u>No measurable progress:</u> <b>Average altitude</b> is <u>1000 feet</u> too low. <b>Altitude variation</b> remains <u>excessive</u> . <b>Descent angles</b> at <u>half best practice</u> .
Imm-10	<u>Pre-2013 dispersal conditions</u> To more closely emulate pre-2013 conditions and 'support a fair and more equitable dispersal'.	15	✗	✗	✗	<u>No measurable change:</u> <u>No shift of average aircraft dispersion</u> towards the pre-2013 position. The <b>peak concentration</b> remains centred over a <u>built-up area</u> (Langton Green).
Imm-12	<u>Less spill-over into night hours.</u> Reducing unplanned night arrivals [i.e. from 23:30].	16-17	✗	✗	✗	<u>Still out of control:</u> <u>27% of arrivals</u> were <b>spill-overs</b> during the first hour of 'night quota period'. The worst <b>airport of origin</b> gave <u>65%</u> . The best <b>airport of origin</b> gave <u>0%</u> .



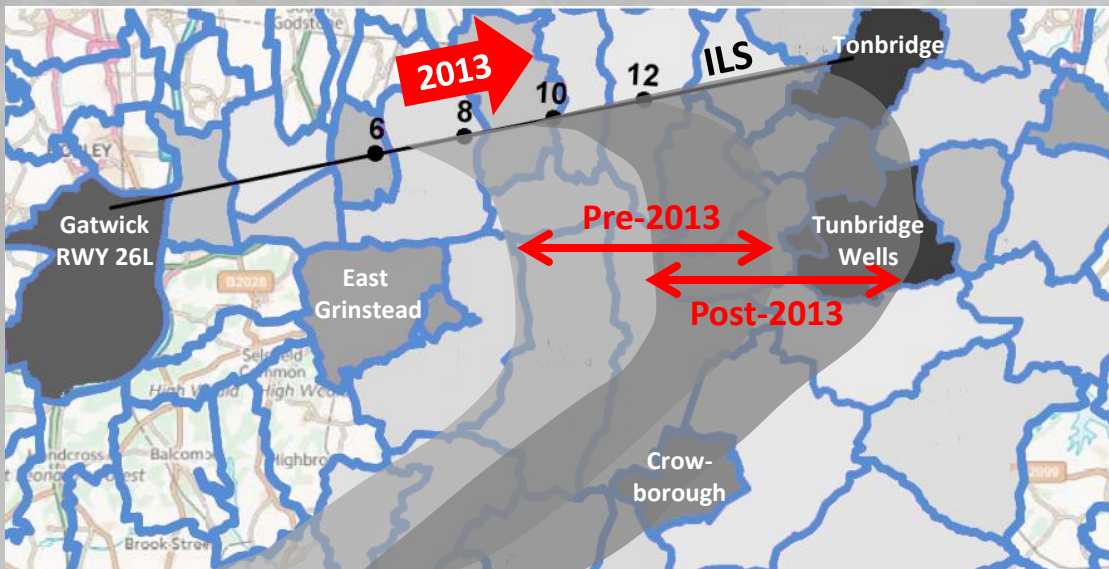
# Reminder: UK Government policy



*“ . . . limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise as part of a policy of sharing benefits of noise reduction between communities and industry in support of sustainable development . . . ”* [our emphasis]

## Comments:

This policy was ignored when, in 2013, Gatwick Airport moved flightpaths headed for the ILS (see below) three nautical miles eastwards. Crowborough, Tunbridge Wells, and Tonbridge saw their share of overflights dramatically increased. Langton Green, in West Tunbridge Wells, saw a fourfold increase (ref. 3). *A later adjustment to ILS join-point position has had no lasting effect whatsoever.*



Left: Population density map showing the approximate 2013 shift of the arrivals swathe.

# Night flights

## Comments:

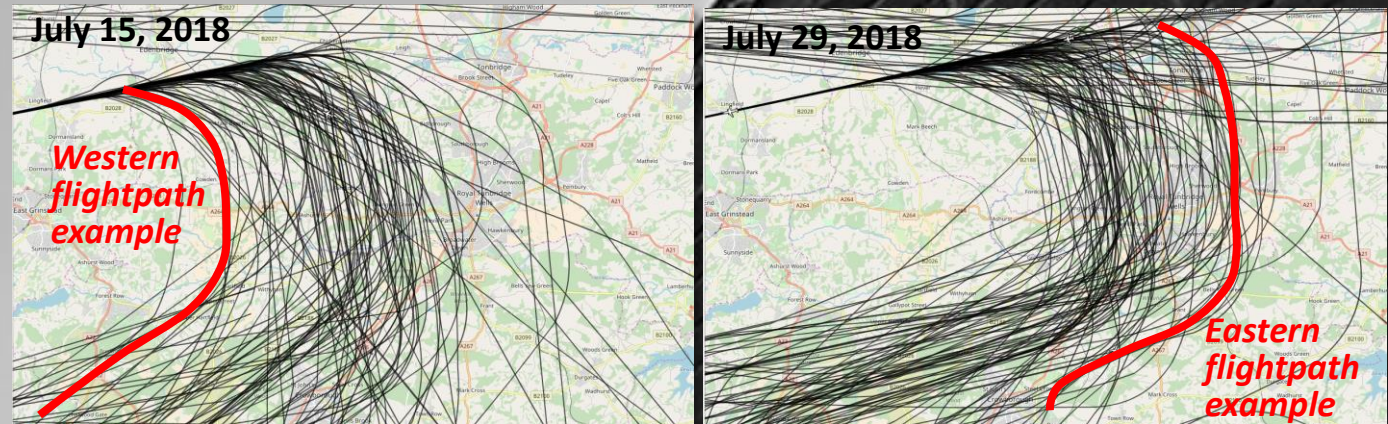
- During summertime around 25 aircraft\* cross West Tunbridge Wells between 23:30 and 05:59 (period defined as the 'night quota period').
- Flightpaths away from major population centres are available.
- At the altitudes involved, the width of a >60 decibel noise corridor for a typical Airbus A320 is about 1.3 km (ref. 4).
- The World Health Organisation recommends a MAXIMUM night noise level of *61 decibels* (ref. 5).
- *Therefore most of the mentioned noise corridor is above limits.*

## Sources:

\*Night overflight statistics derived from raw data collected for the graph on slide 15.

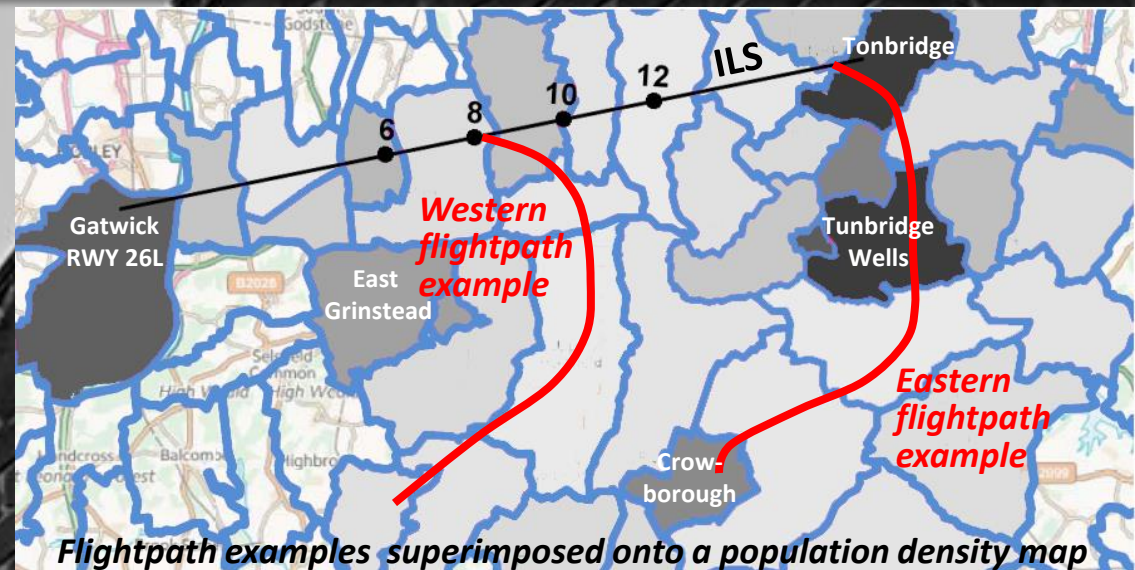


# West versus east: how to reduce the population affected



## Comments:

- Populations overflown within a corridor of >50% aircraft noise level (= 6 Km: see ref. 6):  
Western flightpath ex. = **24,244**  
Eastern flightpath ex. = **112,343**
- Therefore **88,000** more residents affected by eastern flightpaths.



## Sources:

4-hour CASPER screenshots, 10:00 to 14:00, Jul 15 and Jul 29, 2018.

Parish/ward populations, 2011 census, Crowborough and north, counted up to and along the ILS up to the Crawley boundary.



# The case of the proposed Ramslye housing development

## Comments:

270 new homes proposed at Ramslye would be exposed to noise from an average of 221 aircraft per day\* (i.e. more than 50% of all Gatwick arrivals traffic approaching from the south towards RWY 26).



Left: 3 km radius around the proposed Ramslye housing development in Tunbridge Wells. This represents the zone of at least 50% of noise level from aircraft flying at an average altitude of 5000 feet (ref. 6).

## **Sources:**

\*Recorded video from WEBTRAK (ref. 7) covering over 3000 flights spread across Jul-19, counting aircraft entering a 6 km circle around the proposed Ramslye site. This includes night flights (roughly 10% of the total during summer months).

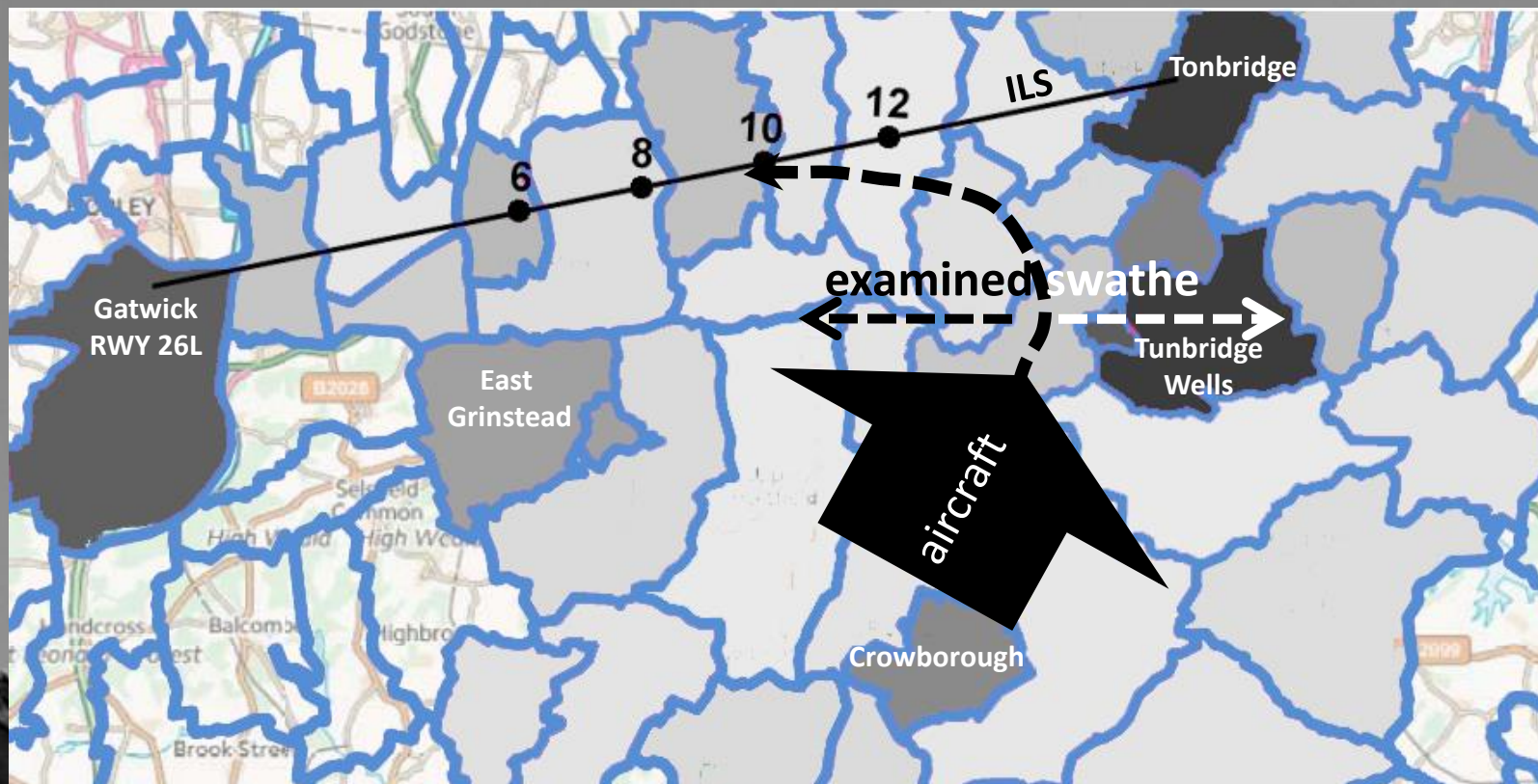
## **Sampling method:**

Only entire days when Runway 26 being used (i.e. wind from the west). Video captured from midnight to midnight

1st sample: 1st day of month when RWY26 being used. 2nd sample: 4 days later, or 1st day after that when RWY26 being used.

3rd sample: 4 days later, or 1st day after that when RWY26 being used. 4th sample: 4 days later, or 1st day after that when RWY26 being used, etc.

# Where we have studied aircraft behaviour: the examined swathe



## Examined swathe:

We analysed flights crossing an east-west (15 km) line ('examined swathe') corresponding to the A264 running westwards from central Tunbridge Wells, CASPER, WEBTRAK and FLIGHTRADAR24 apps (refs. 7 and 8) providing flight data, screenshots and video.

## Average flightpath distance of examined swathe to runway 26L:

This calculates to be approximately 16 nautical miles. At a 3 degree descent angle (per international best practice: see refs. 9 and 10) altitude at the examined swathe, allowing for altitude difference with Gatwick, should be around 5400 feet.

# 1. Key metrics: studies along the central third of the examined swathe

(i.e. from central Tunbridge Wells to west of Langton Green)



Study date	Av. ground speed	Average descent angle	Average altitude	Average 1-hour altitude variation	Max. flights/hour*	Aircraft 2 min. or less (09:00-17:00)
	<i>knots</i>	<i>°</i>	<i>feet</i>	<i>feet</i>	<i>**</i>	<i>%</i>
Target	→	3.0	5400	<1000	4-5	
Dec-13	220	<b>1.6</b>	<b>4600</b>	<b>1700</b>	<b>12</b>	36%
Nov-14	220	<b>1.7</b>	<b>4900</b>	<b>1600</b>	<b>14</b>	28%
Jul-15	<b>240</b>	<b>1.7</b>	<b>4700</b>	<b>1600</b>	<b>17</b>	<b>45%</b>
Jul-16	210	<b>1.6</b>	<b>4500</b>	<b>1500</b>	<b>17</b>	<b>44%</b>
Jul-17	200	<b>1.7</b>	<b>4600</b>	<b>1700</b>	<b>18</b>	<b>61%</b>
Jul-18	210	<b>1.6</b>	<b>4400</b>	<b>1200</b>	<b>16</b>	<b>57%</b>
Jul-19	200	<b>1.7</b>	<b>4400</b>	<b>1400</b>	<b>21</b>	<b>48%</b>

\*Gatwick capacity is 27.5 (i.e. 55 total movements/hour.) \*\*In Jul-19 wide-bodied aircraft accounted for 13%, the highest yet.

## Comments:

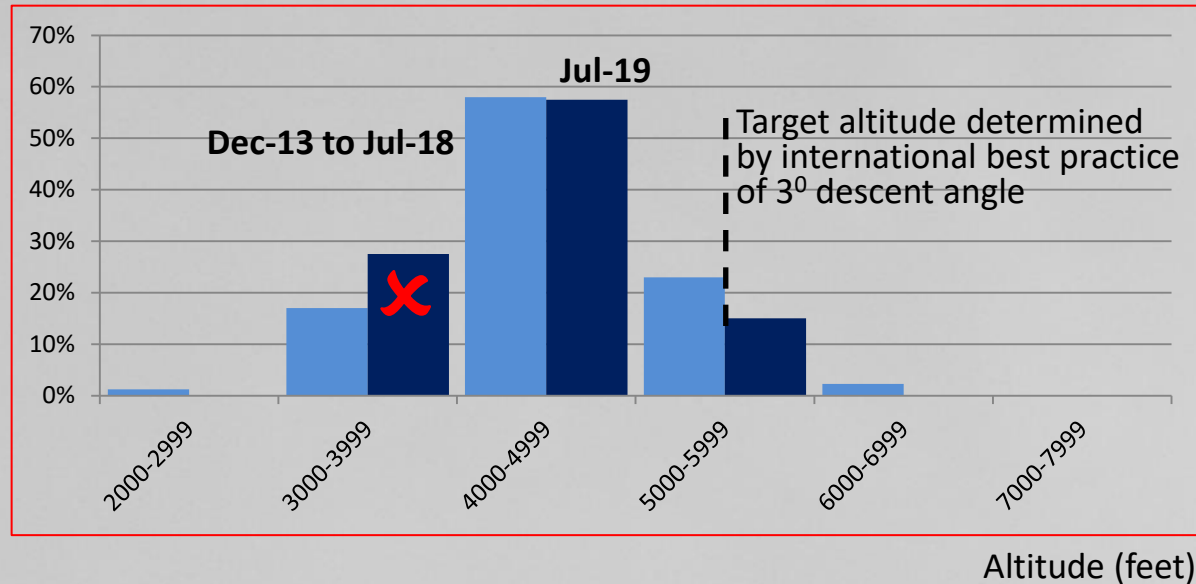
- No measurable improvement observed over 7 years, let alone since 2016.
- Figures in **red** indicate the least favourable results.
- The last column indicates the level of ‘bunching’ of successive aircraft in this part of the swathe.

### Sources:

FLIGHTRADAR24: Aircraft crossing a central 5 km stretch of the examined swathe: ≈70 flights from random 1-hour samples from each of: Dec-13, Nov-14, Jul-15, Jul-16, Jul-17, Jul-18, Jul-19.



## 2. Aircraft altitudes, central third of swathe



### Comments:

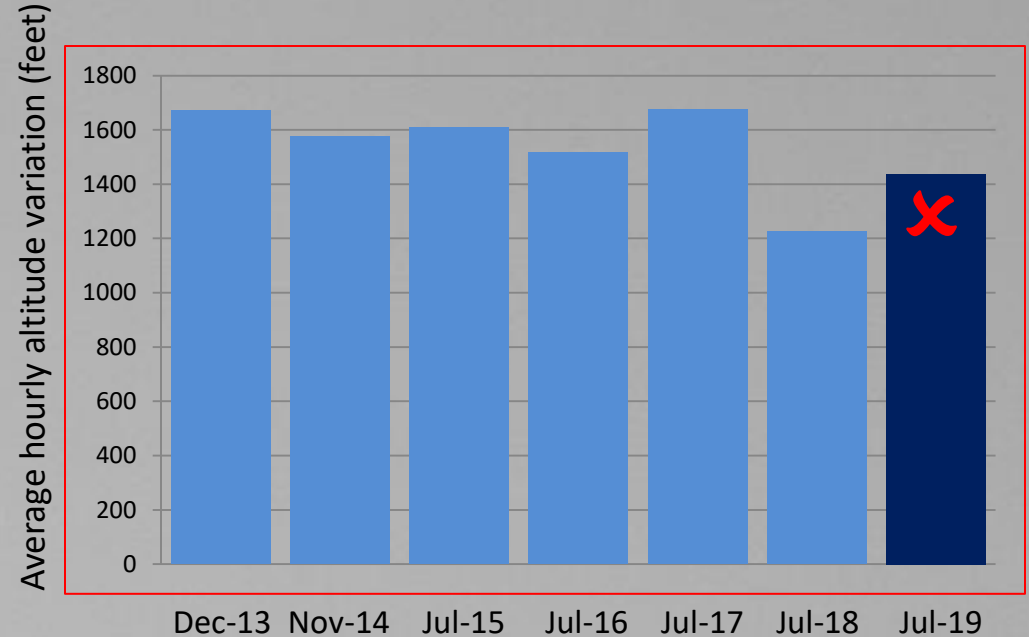
- Average aircraft altitude remains 1000 feet below international best practice (i.e. 20% too low).
- During the July 2019 study, more flights were below 4000 feet compared with the previous average.

### Sources:

FLIGHTRADAR24: Aircraft crossing a central 5 km stretch of the examined swathe: ≈70 flights from random 1-hour samples from each of: Dec-13, Nov-14, Jul-15, Jul-16, Jul-17, Jul-18, Jul-19.



### 3. Aircraft altitude variation, central third of swathe



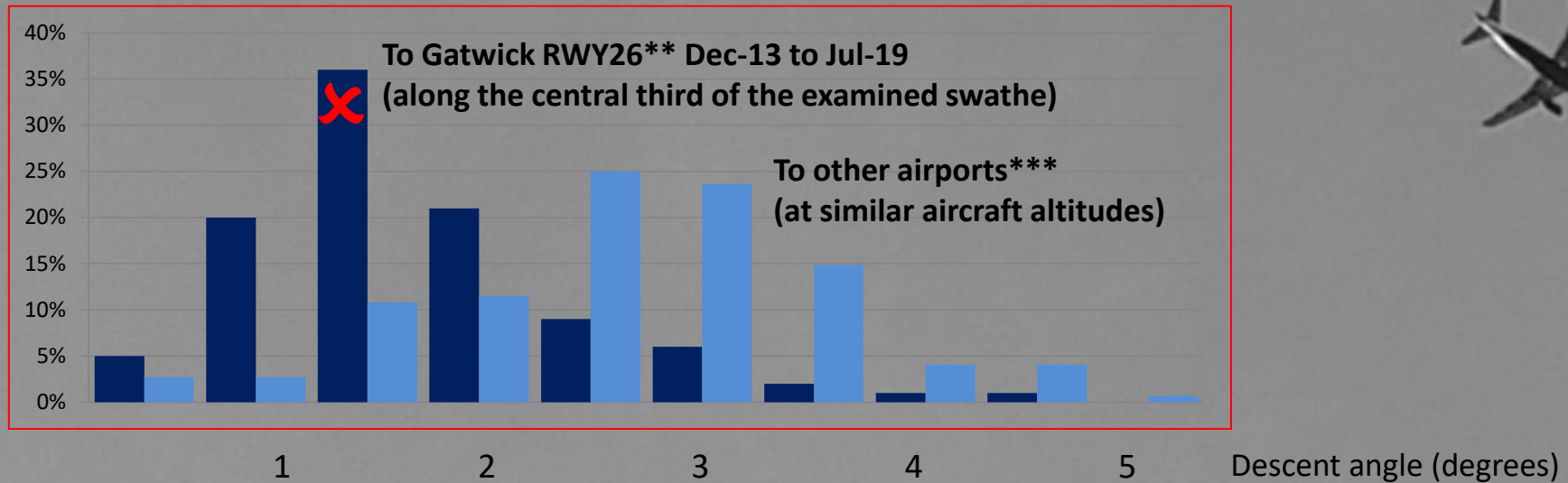
#### Comments:

- Average hourly aircraft altitude variation accounted for almost a third of total altitude.
- Frequent incidents of altitudes of at least 30% below target were the result.
- Lower altitudes imply more noise heard by communities below.

#### Sources:

FLIGHTRADAR24: Aircraft crossing a central 5 km stretch of the examined swathe: ≈70 flights from random 1-hour samples from each of: Dec-13, Nov-14, Jul-15, Jul-16, Jul-17, Jul-18, Jul-19.

## 4. How descent angles\* compare with other airports



### Comments:

- Average aircraft descent angle over West Tunbridge Wells (dark blue) remains unchanged at half what it should be according to international best practice (refs. 9 and 10).
- Shallower flight paths imply the need for more engine thrust, thus yielding more noise.

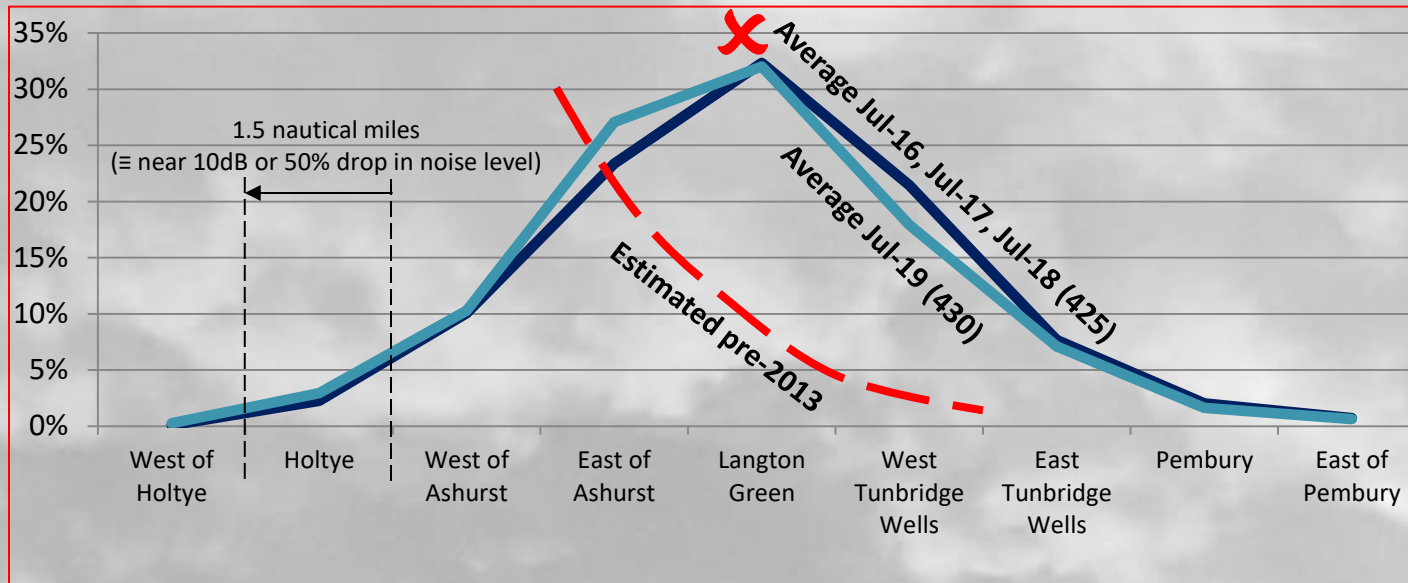
### Sources:

\*Calculated from horizontal and vertical speeds above the examined swathe.

\*\*FLIGHTRADAR24: Aircraft crossing a central 5 km stretch of the examined swathe: ~70 flights from random 1-hour samples from each of: Dec-13, Nov-14, Jul-15, Jul-16, Jul-17, Jul-18, Jul-19.

\*\*\* FLIGHTRADAR24: Jul 25-29, 2015. Readings taken at equivalent altitudes. 30 Airports: ADL; AMS; ARN; ATH; ATL; BCN; CDG; DOH; DUB; DXB; FCO; FRA; GVA; HLG; JFK; LAX; LHR; LIS; MDW; NRT; OSL; SAW; SCL; SHA; SIN; SYD; TLV; VIE; VKO; YUL.

## 5. Pre-2013 dispersal conditions: full swathe



Figures in brackets denote the average number of flights counted on sampling days (see below).

In all 3008 flightpaths were analysed across Jul-19.

### Comments:

- No significant shift of aircraft dispersion towards where it had been pre-2013.
- From 2013, peak concentration remains unnecessarily centred over a built-up area (Langton Green).

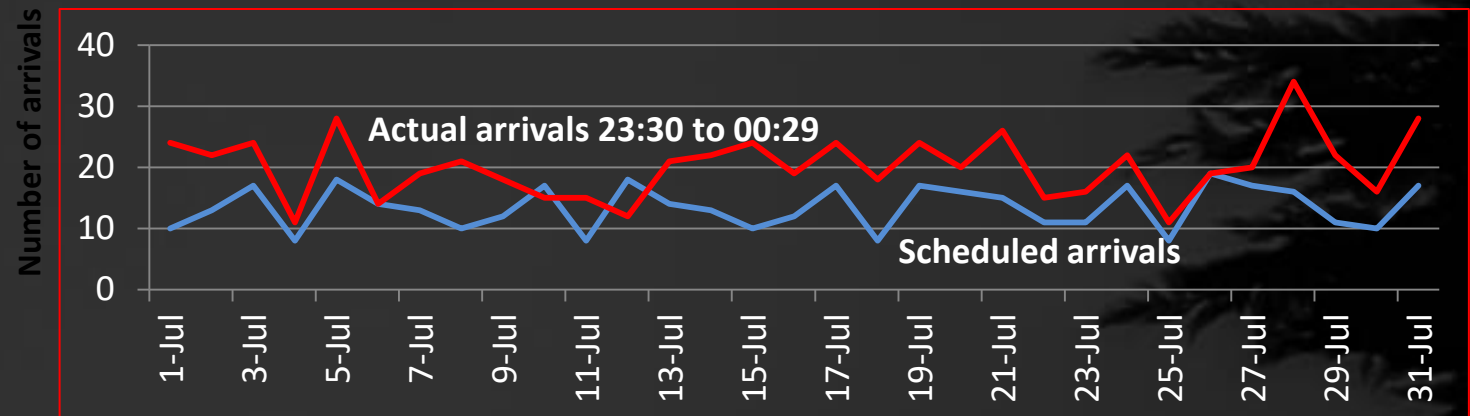
### Sources:

CASPER 1-hour screenshots, flightpath locations visually counted. Replaced in 2019 by WEBTRAK (ref. 7), visually counting accelerated recorded video. A superimposed grid marking the above 1.5 nm boundaries was used in both cases.

### Sampling method:

Only entire days when Runway 26 being used (i.e. wind from the west). 1-hour samples/video captured from midnight to midnight  
 1st sample: 1st day of month when RWY26 being used. 2nd sample: 4 days later, or 1st day after that when RWY26 being used.  
 3rd sample: 4 days later, or 1st day after that when RWY26 being used. 4th sample: 4 days later, or 1st day after that when RWY26 being used, etc.

## 6. Spill-over into the first hour of the 'night quota period' (23:30-00:29)



Focus on the 23:30 to 00:29 'rush hour'			
	Jul-17	Jul-18	Jul-19
Scheduled arrivals, average	13.2	12.0	13.5
Actual arrivals, average	23.7	20.2	20.1
Flights scheduled after 00:29 arriving 23:30-00:29	0.9	1.3	1.2
Spill-over as percentage of actual arrivals	40%	34%	27%
All scheduled arrivals 23:30 to 05:59, average	41.9	42.0	45.2

### Comments:

Situation still out of control: 27% of arrivals were spill-overs from earlier hours.

### Sources:

<https://www.flightradar24.com/data/airports/lgw/arrivals>, supported by airline websites where necessary.



## 7. Most common airports of origin for spill-overs into night period

### Comments:

Certain airports of origin remain linked with most spill-overs



Rank	Origin	Flights	Spill-overs	% Spill-overs	
				Jul-19	(Jul-18)
	*	**	***		
1	Athens	31	20	65% 	(36%)
2	Venice	40	22	55% 	(43%)
3	Malaga	84	33	39% 	(34%)
4	Toulouse	31	12	39% 	(39%)
5	Gibraltar	34	12	35% 	(27%)

\*Only airports with an average of at least 1 flight per day\*\* were counted.

\*\*Only arrivals scheduled from 21:00 to 23:29.

\*\*\*Spill-overs into the entire 'night quota period' (23:30-05:59).

The five best performing airports\*/\*\* during Jul-19 were:

Jersey (0%); Kiev (3%); Bucharest (3%); Barcelona (6%); Amsterdam (7%)

### Sources:

<https://www.flightradar24.com/data/airports/lgw/arrivals>, supported by airline websites.

# List of photographs and flight details

Slide	Date	Time	Aircraft	Flight ref.	Altitude	Comments	Camera setting
1	3 Nov	07:48	A332	NRS7044	3747	Very low	auto
2	9 Sep	07:10	A388	UAE9KC	4524	Low	auto
3	16 Jul	12:28	A388	UAE15	4700	Low	auto
4	5 Oct	07:13	B772	BAW2204	4119	Low	auto
5	5 Oct	07:17	A388	UAE9KC	4085	Low	auto
6	21 Jan	06:50	B772	BA3036	4307	Low	10 secs, ISO 50
7	17 Mar	18:21	A388	EK9	4234	Low	auto
8	8 Nov	08:22	B772	BAW2202	5062	Normal	auto
9	5 Jul	07:55	B772	BAW2166	3800	Very low	auto
10	3 Nov	07:53	B772	BAW61T	4067	Low	auto
11	30 Nov	13:33	B738	TOM463	4350	Low	auto
12	14 Nov	07:02	A319	EZS18KB	4327	Low	auto
13	25 Oct	07:15	A388	UAE9KC	4366	Low	auto
14	9 Nov	14:34	A319	BAW2623	4223	Low	auto
15	14 Nov	07:08	A320	EZY32QR	4680	Low	auto
16	29 Jan	06:49	A320	VLG8770	4797	Low	10 secs, ISO 50
17	13 Mar	18:40	B738	IBK7CW	4527	Low	10 secs, ISO 50
18	10 Nov	07:50	A320	AEE4220	4425	Low	auto
19	10 Nov	07:48	B738	NAX14X	5055	Normal	auto



## Note:

All photographs in this report were taken from Langton Green.

# References



1. TWAANG represents the Tunbridge Wells area and has an informative website. GON and GACC have also been leading campaigners. Other important groups include CAGNE, CAGNE-EAST, ESCCAN, HWCAAG, and PLANE WRONG. GREG CLARK, MP was instrumental in encouraging airlines to resolve their Airbus 'whine' problem, and all other local MPs have also made many contributions.
2. *Arrivals Review: Overview and Final Action Plan*. Gatwick Airport, June 2016.
3. Flight frequency above Langton Green rose from 0.5-1 overflights per hour in 2011 to 2-4 overflights per hour in 2015 (verbal communication, from GAL, reading from a chart, 29 November 2017).
4. Night flights restrictions consultation document. DOT, January 2017, page 70.
5. *Night Noise Guidelines for Europe*. WHO, 2009.
6. *Arrivals Revue*, page 51, Gatwick Airport, January 2016.
7. <http://flighttracking.casper.aero/lgw>, replaced by <https://webtrak.emsbk.com/lgw2> in 4/19.
8. <https://www.flightradar24.com>.
9. *Basic Principles of the Continuous Descent Approach (CDA) for the Non-Aviation community*. CAA, 2007.
10. *Noise from Arriving aircraft: An Industry Code of Practice*. NATS et al., 2001.

Note: More details and explanations are provided in our reports for 2015, 2016 and 2017. These were kindly posted on the [twaang.org.uk](http://twaang.org.uk) website which contains a considerable amount of useful information.