

Richmond Heathrow Campaign



Night Flights

Presentation to HCNF

Wednesday 20 November 2019

Night Noise Estimates

Night Flights. Peter Willan (Richmond Heathrow Campaign). Heathrow Community Noise Forum 20/11/2019.

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Exposure Levels

Master Plan 2019

Exposure category	Aircraft and ground noise, daytime	Aircraft and ground noise, night-time
Very Low	<51 dBL _{Aeq,16h}	<45 dBL _{Aeq,8h}
LOAEL		
Low	51 – 53 dBL _{Aeq,16h}	45 – 47 dBL _{Aeq,8h}
Medium	54 – 56 dBL _{Aeq,16h}	48 – 50 dBL _{Aeq,8h}
High	57 – 62 dBL _{Aeq,16h}	51 – 54 dBL _{Aeq,8h}
SOAEL		
Very High	>63 dBL _{Aeq,16h}	>54 dBL _{Aeq,8h}
UAEL		
Unacceptable	>71dBL _{Aeq,16h}	>66dBL _{Aeq,8h}

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Estimates of Population Exposed to Night Noise (A)

Night Quota Period Noise (6.5 hour 23:30-0600)

1. 2R trend 2006 - 2023: No improvement in night quota period noise (6.5 hour)
2. No reason to expect 2R improvement 2023-2035
3. No reason to expect improvement with 3R by 2035 even with night ban

Table 1: Population Exposed above 50 dBA Lnight 6.5hr (23:30-0600)

Population '000	Actual			Forecast	
	Year	2006	2011	2016	2023
2R	207	199	221	207	n/a
3R					n/a
Total 2R+3R					n/a

Source: HAL NAP 2019

Estimates of Population Exposed to Night Noise (B)

Night Noise (8 hour 23:00-0700)

1. 2R trend 2013 to 2025: Substantial improvement in night noise (8 hour).
2. 2R No statistics available for 2035 but some continuing improvement might be expected.
3. 3R probably largely offsets 2R improvement 2025 to 2035
4. Note inconsistencies between HAL's estimates
5. On a granular basis large areas experience more night noise compared to 2013 and to the 2R Do-minimum (see difference contours). Note: these area contours do not account for population growth between 2013 and 2035.

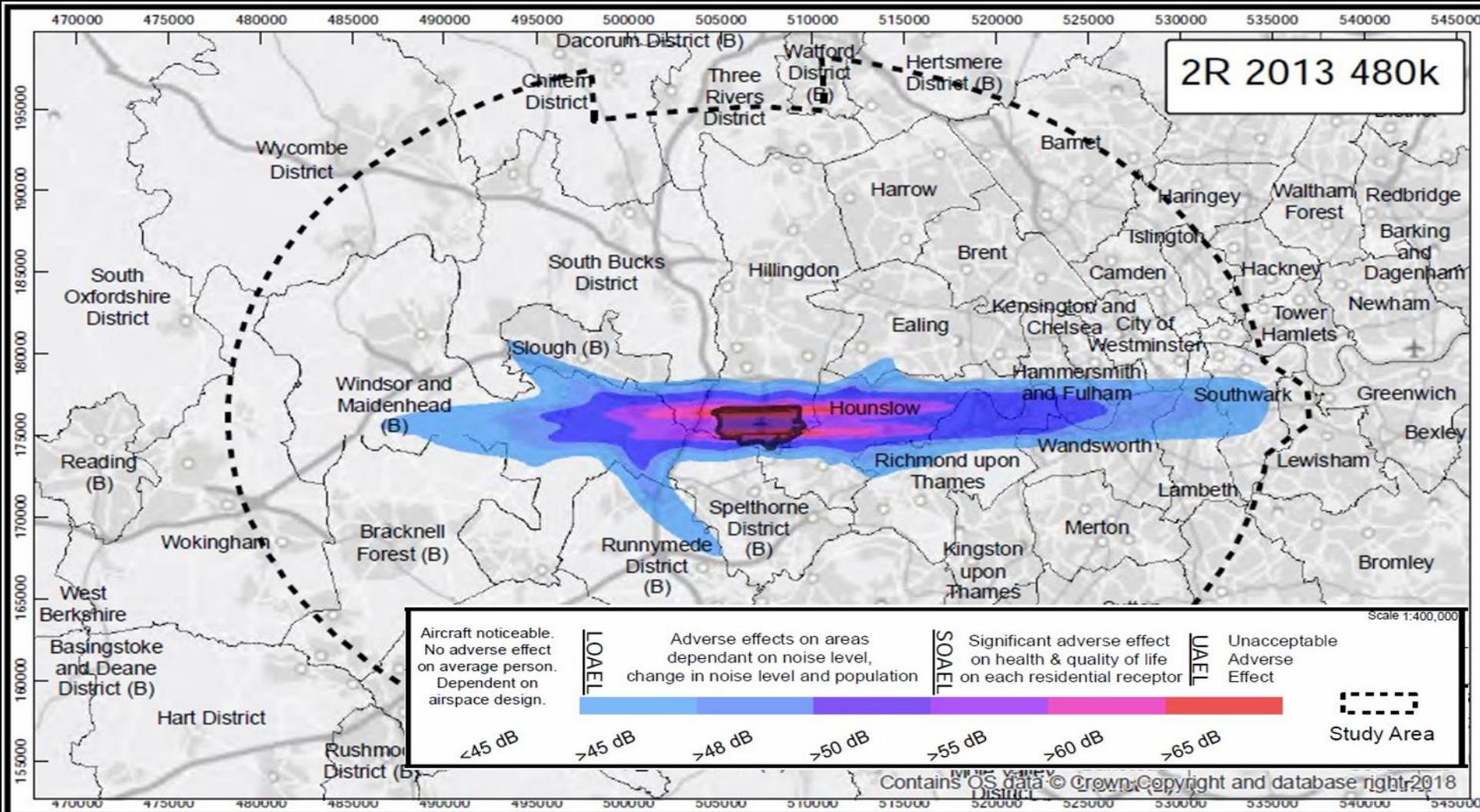
Table 2: Population Exposed above LOAEL 45 dB Laeq 8 hr (23:00-0700)

Population '000	Actual	Forecast (no early growth)	
Year	2013	2025	2035
2R	894 (998)	n/a (665)	n/a
3R	 	 	n/a
Total 2R+3R	 	 	588 to 689 (n/a)

Source: Heathrow Master Plan 2019 PEIR Vol 1 page 17.135;
 Figures in brackets PEIR Vol 1 page 17.131

Two Runway – Night – 2013

Master Plan 2019

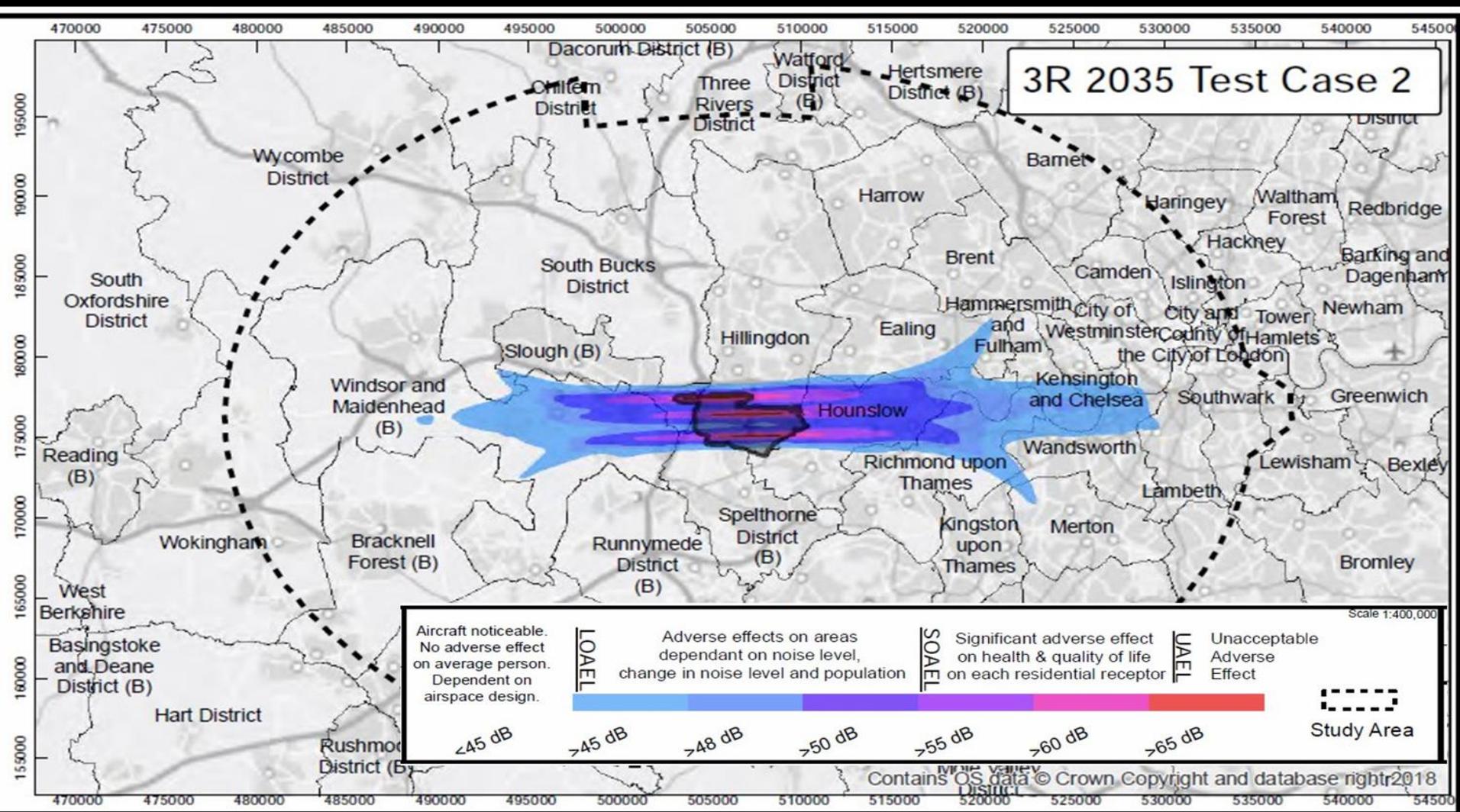


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Three Runway – Night – 2035

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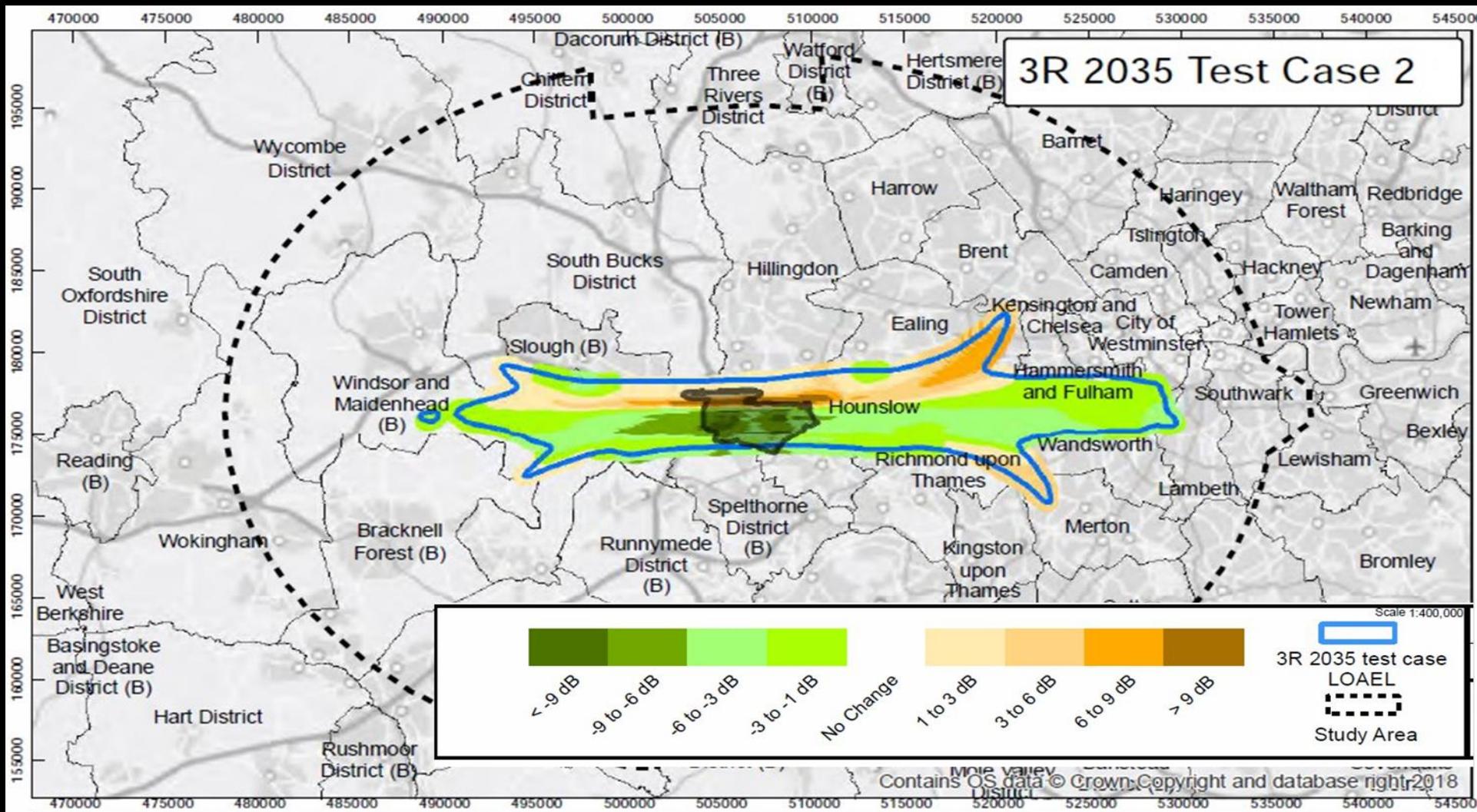


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Difference – Night – 2035 3R minus 2013 2R

Master Plan 2019

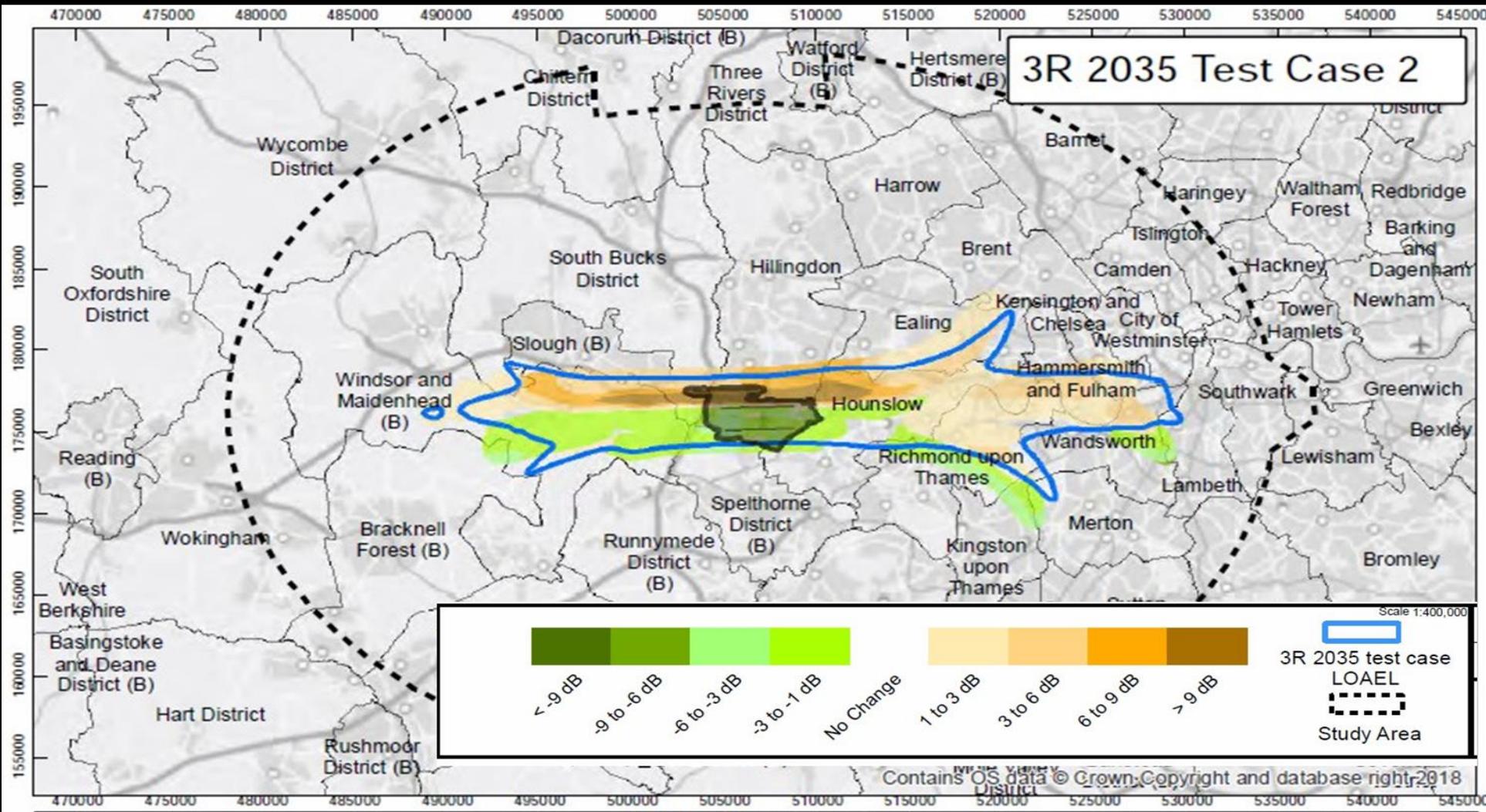


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Difference – Night – 2035 3R minus 2035 2R

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Immediate Action

Existing Night Flights

Night Flying Restrictions pre new regime 2017

TABLE 1	Late Evening Shoulder		Night Quota Period		Early Morning Shoulder	
	23:00-23:30		23:30-6:00		6:00-7:00	
Movement Limits ATMs	None		Winter 2011/12: 2,550 Summer 2012: 3,250 Unchanged during regime		None	
Noise Quota Points- Limit	None		Winter 2011/12: 4,080 Summer 2012: 5,100 Gradual decrease during current regime		None	
Carry-over between seasons - Movements			Yes			
Carry-over between seasons - NQ Points			Yes			
Ban on Noisiest Aircraft:	Scheduled	Operational	Scheduled	Operational	Scheduled	Operational
QC/16 & QC/8	Ban	Ban	Ban	Ban	Ban	Ban
QC/4	Ban	No Ban	Ban	No Ban	Ban	No ban
QC/2, QC/1, QC/0.5 & QC/0.25	No Ban	No Ban	No Ban	No Ban	No Ban	No Ban
QC less than 0.25	Exempt	Exempt	Exempt	Exempt	Exempt	Exempt
Dispensations	Yes		Yes		Yes	
Runway preference	Westerly		No preference		Westerly	
Runway Rotation	Yes		Yes		No (TEAM)	

HEATHROW NIGHT FLIGHTS - ACTUALS 2018

TABLE A					TABLE B				
	Arrivals	Departures	Total Flights	Flights per nt	Scheduled	Not Sched excl dispen	Total quota count	Dispensation	Total Flights
23:00 -23:30 (evening shoulder)	619	2,304	2,923	8.0	66	2,857	na	na	2,923
23:30 -00:00	170	347	517	1.4					
00:00 -00:30	87	120	207	0.6					
00:30 -01:00	34	68	102	0.3					
01:00 -01:30	5	37	42	0.1					
01:30 -02:00	0	8	8	0.0					
02:00 -02:30	0	0	0	0.0					
02:30 -03:00	0	1	1	0.0					
03:00 -03:30	0	0	0	0.0					
03:30 -04:00	0	0	0	0.0					
04:00 -04:30	1	0	1	0.0					
23:30 -04:30 (1)	297	581	878	2.4	5	385	390	457	847
04:30 -05:00	1,839	0	1,839	5.0					
05:00 -05:30	2,086	0	2,086	5.7					
05:30 -06:00	1,436	0	1,436	3.9					
04:30 -06:00 (2)	5,361	0	5,361	14.7	5,064	96	5,160	197	5,357
Total Night Quota Period (1)+(2)	5,658	581	6,239	17.1	5,069	481	5,550	654	6,204
06:00 -07:00 (morning shoulder)	8,478	11,870	20,348	55.7	16,355	3,993	na	na	20,348
Total Night Period	14,755	14,755	29,510	80.8	21,490	7,331	na	654	29,475
Average per night, year 2018:									
23:00 -23:30	1.7	6.3	8.0		0.2	7.8	na	na	8.0
23:30 -04:30	0.8	1.6	2.4		0.0	1.1	1.1	1.3	2.3
04:30 -06:00	14.7	0.0	14.7		13.9	0.3	14.1	0.5	14.7
06:00 -07:00	23.2	32.5	55.7		44.8	10.9	na	na	55.7
Night Quota Period	15.5	1.6	17.1		13.9	1.3	15.2	1.8	17.0
Night Period	40.4	40.4	80.8		58.9	20.1	na	1.8	80.8
Standard deviation (nightly)									+/-10.6
Maximum flights in Night Period									187

TABLE A Source: Heathrow Reports: Heathrow Night Flight Report 2018 Q4 21 February 2019

TABLE B Source: Heathrow Daily Operational Data Report 2018

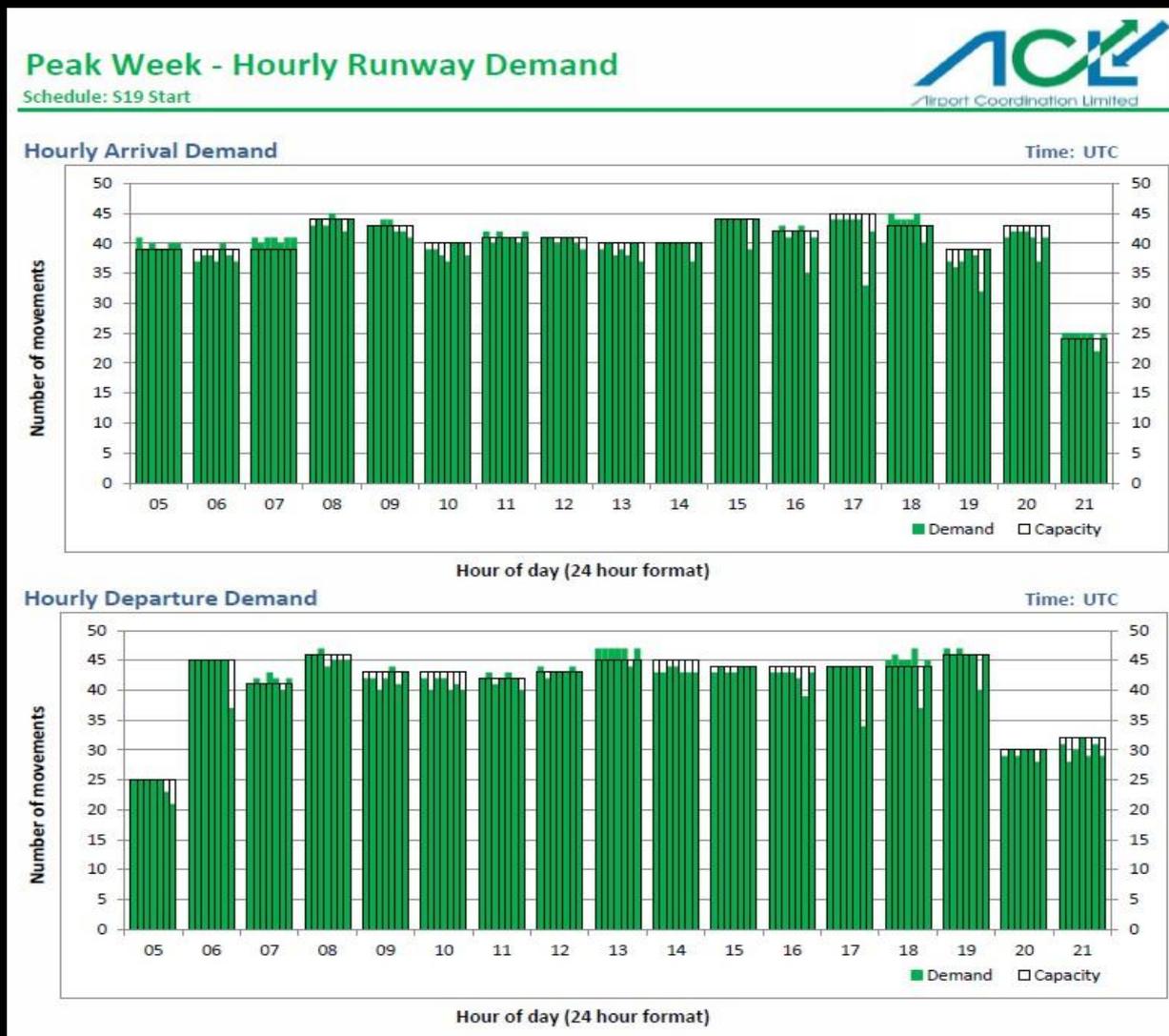
Note: Slightly different Dispensation numbers between reports

Note: Arrival and departure proportions in periods 23:00-23:30 and 06:00-07:00 estimated by Richmond Heathrow Campaign

Night Quota Period: 23:30-06:00

Night Period: 23:00-07:00

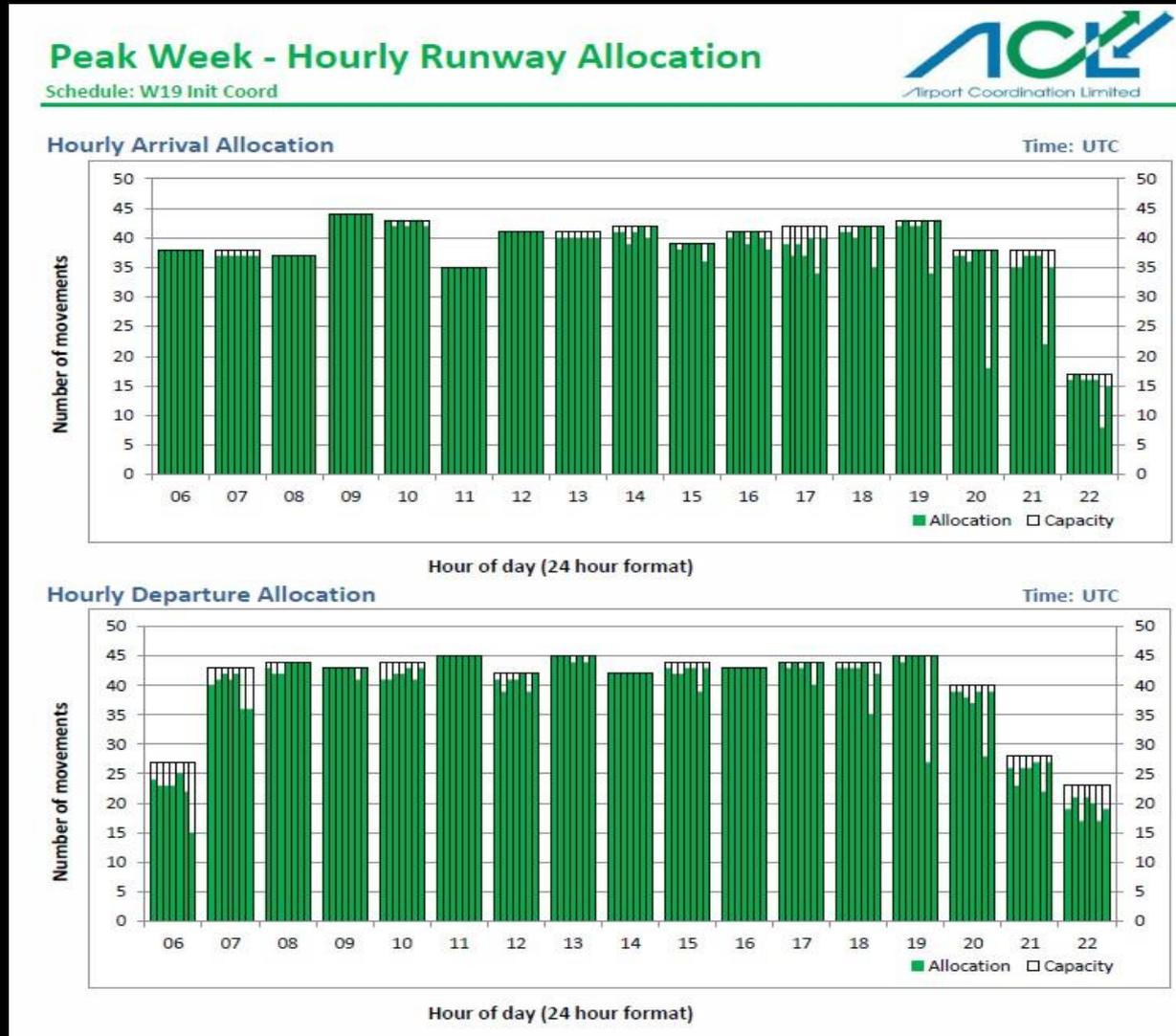
Peak Week Hourly Runway Demand – Summer 2019



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Peak Week Hourly Runway Demand – Winter 2019



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Immediate Action - Reduce Night Flight Noise

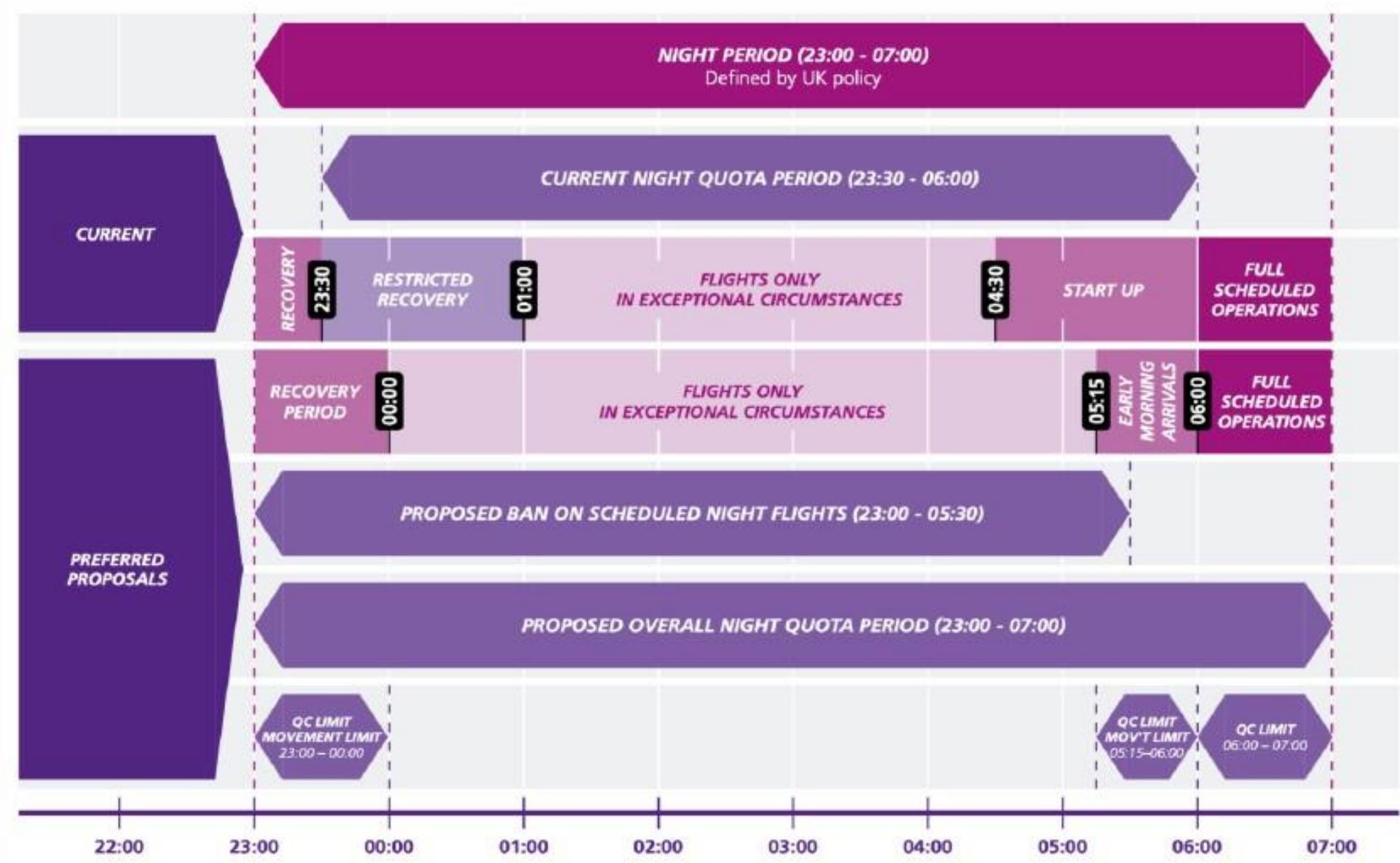
1. Reduce Late Runners and other unscheduled flights
2. Reduce flights in early morning shoulder
3. Reduce noisiest aircraft e.g. add ban of unscheduled QC4 aircraft to existing ban on scheduled QC4 aircraft 23:00 to 0700

Night Flight Ban

Scheduled and Unscheduled Flights

23:00 to 07:00

Figure 4.9: Preferred Proposals for Future Night Flight Operations



Night Flights. Peter Willan (Richmond Heathrow Campaign). Heathrow Community Noise Forum 20/11/2019.

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Night Flights – Summer 2018 Schedule

Master Plan 2019

Route	Airline										
	BA	CX	VS	QF	MH	SV	SQ	UA	WY	BI	10
Hong Kong	0450 0530	0540	0530								
Los Angeles	0525										
Singapore	0505 0550						0555				
Riyadh	0535										
Johannesburg	0530										
Kuala Lumpur	0525				0555						
Chicago								0555			
Dubai	0555 (1)									0555 (1)	
Perth				0505							
	9	9									

Note: numbers in brackets are flights per week - all others are 7 days Source SDR 5 page 45 Figure 7

Night Flights – Winter 2018 Schedule

Master Plan 2019

Route	BA	CX	VS	QF	Airline MH	SV	SQ	UA	WY	9
Hong Kong	0450		0455							
Hong Kong	0455	0500								
Cape Town	0445									
Lagos	0450									
Sydney	0455									
Melbourne				0505						
Singapore	0515						0555			
Riyadh	0525					0555 (1)				
Johannesburg	0525									
Accra	0530									
Kuala Lumpur	0535				0535					
Jeddah						0545 (3)				
Bahrain	0555 (1)									
Washington	0555 (1)									
Chicago							0555 (4)			
Muscat									0555	
	15	12								

Note: numbers in brackets are flights per week - all others are 7 days Source SDR 5 page 45 Figure 8

Winter only cities: Cape Town, Lagos, Sydney, Melbourne, Accra, Bahrain, Washington, Muscat
 Summer only cities: Perth and Dubai

8 Hour Ban on Scheduled and Unscheduled Night Flights 23:00 to 07:00 (A1)

1. Allowance for controlled dispensations
2. 15 arrivals before 0600 and 55 arrivals and departures between 0600 and 0700 can be retimed by 0900 within daytime capacity available with three runways or earlier if some passengers use existing flights in the day and thereby reduce the need for re-timing.
3. A loss of around 500,000 International-to-international (I-I) transfer passengers out of 1.84 million night flight passengers a year would have no negative impact on the UK.
 - Air Passenger Duty exemption on I-I transfers should be revoked without delay.
 - There are 300,000 I-I transfer passengers a year on thin long haul routes out of 23 million I-I transfers (CAA/DfT data for 2011 and 2016).
 - No routes would be unviable without I-I transfers.

8 Hour Ban on Scheduled and Unscheduled Night Flights 23:00 to 07:00 (A2)

4. The ban is based on 138 flights an hour and as such meets the APNS requirement of 740,000 flights a year.
5. The reduction of harm from the noise impact on sleep, health and productivity is an imperative, especially for the most vulnerable such as children and those nearest the airport with the highest noise exposure.
6. Any ban of less than 8 hours continues night noise into the night shoulder periods which is unacceptable.
7. HAL's proposal for a 6 1/2 hour ban from 23:00 to 05:30 double counts the respite that already should be available between 23:00 and 23:30 when there are no scheduled flights.

8 Hour Ban on Scheduled and Unscheduled Night Flights 23:00 to 0700 (B1)

1. The Airports Commission said in its Final Report 2015 (para 14.29): *“A review of existing schedules at Heathrow suggests that there would be no insurmountable demand or supply-side barriers to providing alternative overnight services to arrive after 6:00am.”*
2. What is so special about the 13 destinations that they require night flight arrivals in the 65 minutes between 04:50 and 05:55 whereas 179 destinations are without night flights?
3. Are late departure curfews the reason for some of the early arrivals at Heathrow? Curfews on late night departures are surely no good reason for night time arrivals at Heathrow. Furthermore, curfews do not explain the night arrivals from at least the US destinations and others which depart in the local daytime.

8 Hour Ban on Scheduled and Unscheduled Night Flights 23:00 to 0700 (B2)

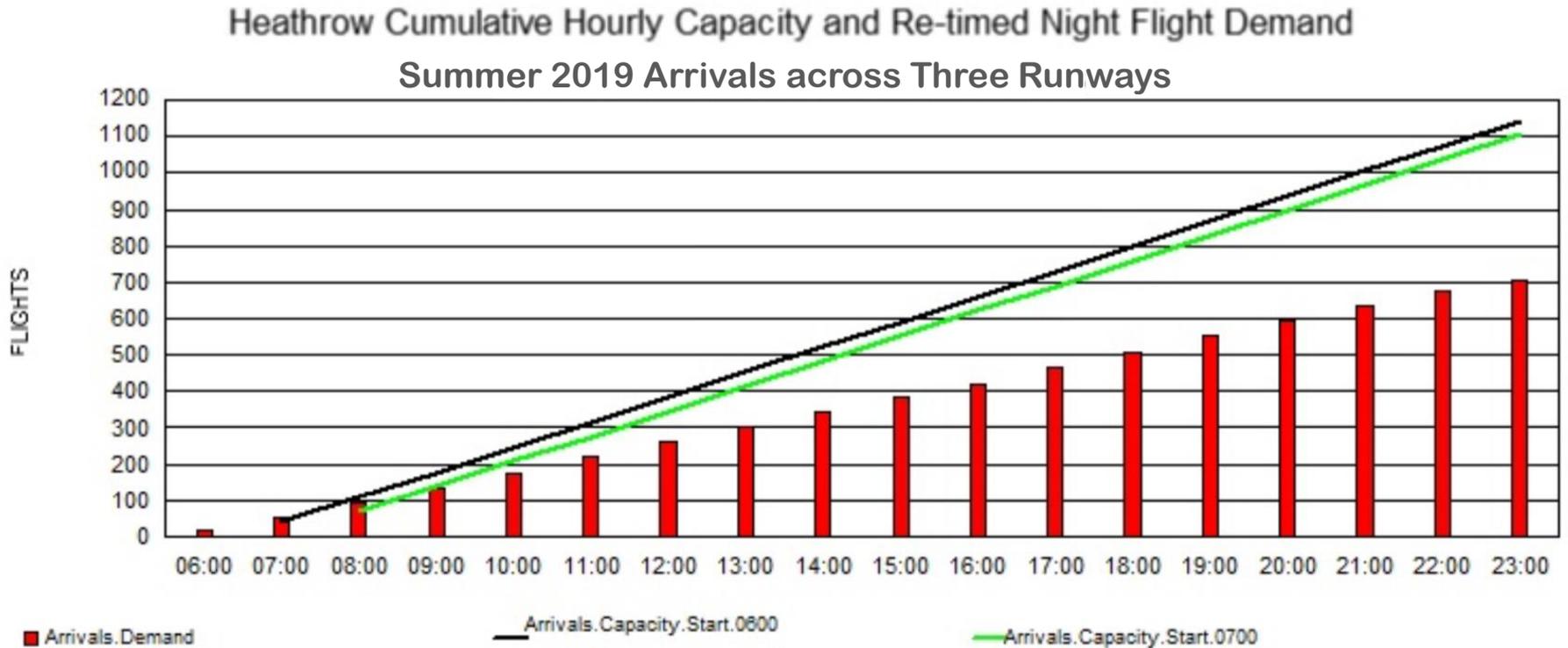
4. Heathrow is served by more than 30 destinations in the Far East. So why do only 6 need pre-06:00 access to Heathrow?
5. Why do not equally or more dense routes than the 13 destinations require night time arrivals?
6. There is really no good reason to justify night flights other than the DfT allows them.

8 Hour Ban on Scheduled and Unscheduled Night Flights 23:00 to 0700 (C)

1. Calculations show that using the expanded capacity, all 14.7 scheduled flights before 0600 could be re-timed between 0700 and 0800. Furthermore, all 70 flights before 0700 could be re-timed before 0900. In practice, most if not all the routes flown before 0700 have more than one flight later in the day.
2. Those airlines re-timing their night flights to later in the day could be given priority over choice of slots created by Heathrow's expansion.

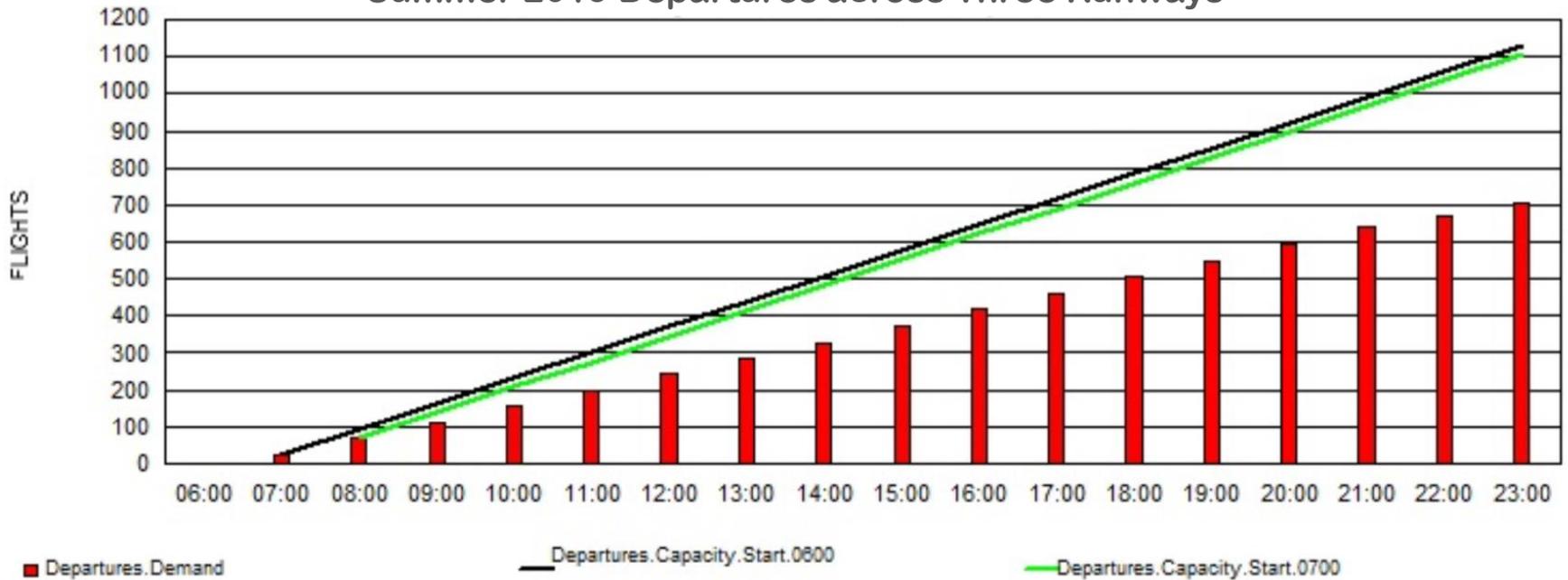
Heathrow Cumulative Hourly Capacity and Re-timed Night Flight Demand

Summer 2019 Arrivals across Three Runways



Source: Richmond Heathrow Campaign

Heathrow Cumulative Hourly Capacity and Re-timed Night Flight Demand Summer 2019 Departures across Three Runways



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Respite

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Night Flights - Runway Alternation Respite from Scheduled Flights – Existing 2 Runways

Prepared by RHC	Evening Shoulder 23:00 – 23:30	Night Quota 23:30-06:00	Morning Shoulder 06:00 – 07:00	
	All	Wind permitting	Westerlies	Easterlies

East of Airport

Arrivals	Respite	3 weeks respite out of 4 weeks 15.5 flights/night	1 week respite out of 2 weeks but with TEAM 23.2 flights/night	Respite
Departures	Respite	Respite	Respite	1 week respite out of 2 weeks but with TEAM 32.5 flights/night

West of Airport

Arrivals	Respite	3 weeks respite out of 4 weeks 15.5 flights/night	Respite	1 week respite out of 2 weeks but with TEAM 23.2 flights/night
Departures	Respite	Respite	1 week respite out of 2 weeks but with TEAM 32.5 flights/night	Respite

Night Flights - Runway Alternation Respite from Scheduled Flights – Proposed 3 Runways

Prepared by RHC

Night Ban
23:00 – 05:30

Early Morning Arrivals
23:30-06:00

Morning Shoulder
06:00 – 07:00

East of Airport

Arrivals	Respite	5 weeks respite out of 6 weeks or 2 in 6 if dual runway use	As per daytime pattern
Departures	Respite	Respite	As per daytime pattern

West of Airport

Arrivals	Respite	5 weeks respite out of 6 weeks or 2 in 6 if dual runway use	As per daytime pattern
Departures	Respite	Respite	As per daytime pattern

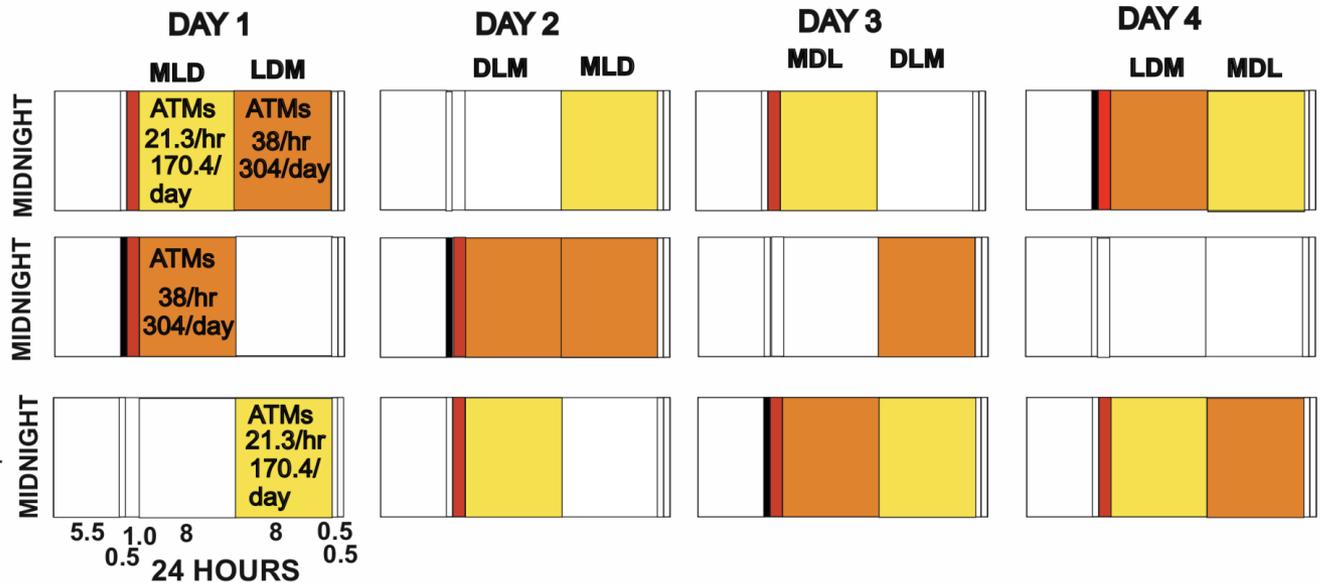
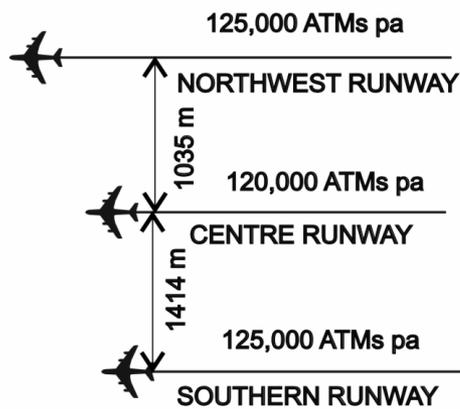
Day-Time runway use (hours) 4 Day Pattern

Prepared by RHC	2 runways 07:00 – 23:00		3 runways 06:00 – 23:00		
Average over four days	Northern	Southern	North-West	Middle	Southern
Respite	8 hours	8 hours	4 hours	8 hours	4 hours
Segregated mode 38 ATMs/hr	8 hours	8 hours	4 hours	8 hours	4 hours
Mixed mode 21 ATMs/hr	0 hours	0 hours	8 hours	0 hours	8 hours
Total	16 hours	16 hours	16 hours	16 hours	16 hours

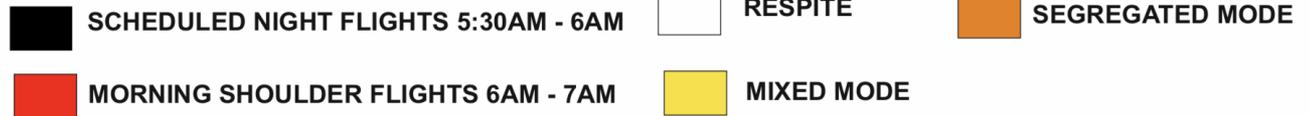
Westerly Arrivals

Proposed Northwest Runway from 2026

740,000 ATMs IN 2035
ex directional mode
e.g. 70% westerlies



Prepared by
Richmond Heathrow Campaign
July 2019
Source: HAL Future Runway
Operations June 19. Note different
to PEIR Vol 1 Ch 17



Key Issues

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Key Night Time Issues

1. LOAEL at >45 dB Laeq 8hr may be okay for structuring the Night Flight Regime but the WHO 40 dB Laeq 8hr should be established in law as the target.
2. HAL's projected noise levels/contours:
 - a. Lack evidence and assumptions and a Do-nothing 2R noise level in 2035
 - b. There are discrepancies between HAL sources
 - c. Historic trends raise doubts about future noise reduction

Recommendations

1. Immediate Action is needed to:
 - a. Reduce Late Runners
 - b. Reduce flights in the early morning shoulder
 - c. Reduce noisiest aircraft

2. A night time Ban 23:00 to 07:00 is a health imperative
 - a. HAL's proposed ban 23:00 to 5:30 double counts the 23:00 to 23:30 shoulder where there are already no shoulder flights. At the very least the ban should be 23:30 to 06:00 (runway times)
 - b. There is no economic or other reason for night flights
 - c. The 15 flights 23:30 to 06:00 plus the 55 flights 06:00 to 07:00 can and should all be time shifted to the available 3R capacity in the period 07:00 to 09:00

Richmond Heathrow Campaign



QUESTIONS?