

WRITTEN REPRESENTATION

Susan Carroll, [REDACTED]

RE: Application by RiverOak Strategic Partners Ltd for an Order Granting Development Consent for the upgrade and reopening of Manston Airport

I write as an individual; however, I ask that my Written Representation be given full consideration as I believe that it is potentially indicative of the views of many hundreds of Herne Bay residents, if they had been made appropriately aware of the RSP proposals for Manston Airport. The minimal awareness which does exist is of a plan to “re-open Manston” – which was a minor local passenger airport with a handful of freight flights per week. There is little or no awareness that RSP plans include 17-83000 freight flights per annum, nor that plans include a significant allowance for night flights.

CONSULTATION

The lack of awareness of RSP proposals in Herne Bay results from a failure to take adequate steps to inform residents of the consultation events in 2018. I therefore disagree that with the Application's statements that consultation with residents of Herne Bay was adequate:

- 1) RSP state that all households under the flight path received delivered postcards yet in all my discussions with fellow residents about Manston I have been unable to find a single person who received one. Only 0.225% of the town's population were identified as attending the consultation events. Yet this does not indicate a lack of interest or concern about Manston. Following the Planning Inspectorate's announcement on 4 September 2018 of the deadline for initial submissions in October 2018, in a single week I and one friend – by putting a simple A5 laser printed slip through our neighbourhood letterboxes and one mention on Facebook page Herne Bay Chatter – managed to assemble some 150 Herne Bay residents for a meeting on 11 September (**Docs 1 & 2 Meeting Herne Bay 11 September 2018 photographs A & B**).
- 2) An online petition by No Night Flights in September 2018 provides evidence of the opposition by Herne Bay residents to RSP proposals for Manston. (**Doc 3 NNF Petition Comments Herne Bay Sept 2018**)
- 3) Canterbury City Council expressed “concerns regarding the adequacy of the consultation process” including failures under PA 2008 (**see letter RSP Consultation Report Appendix 46 para 6.2**).
- 4) Misleading statements made by RSP at the consultations included repeated denials of plans for night flights, an allowance for which is included in the Application (**RSP 2.4 Noise Mitigation Plan para 1.6**). A survey by Canterbury City Council in 2012 found 80% of Herne Bay residents opposed night flights. (**Docs 4-6 Airport Watch Cant CC survey 2012**)

NOISE IMPACT ASSESSMENT

I disagree with Application statements re the noise impact of the airport, as follows:

- 1) That the Noise Mitigation Plan (Doc TR020002/APP/2.4) will avoid “significant adverse effects of noise” and its assessment that only a maximum of 225 properties will experience ‘significant annoyance’ from 17-83000 cargo flights p/a.
- 2) The Heathrow Environmental Noise Directive Noise Action Plan (2013-2018) (**Doc 7 Heathrow Noise Action Plan Supporting Annexes, item 9 p19**) - identifies Noise Mitigation Scheme boundary map identifies properties up to 10 miles from the centre of the airport as within the night-time 90dBA SEL footprint. A significant residential community of Herne Bay and district falls within this contour. 85dB is equivalent to a heavy diesel lorry 7m away, and 95dB a pneumatic drill at the same distance (**Docs 8 & 9 NATS statistics**). The World

Health Organisation statistics on aircraft noise describe 'moderate community annoyance' at a threshold of 50 dB and 'severe annoyance' at 55 dB.

- 3) RSP submit that a maximum of 225 will experience 'significant annoyance' and thereby qualify for noise insulation under the proposed noise mitigation plan. I submit that this is a massive underestimate of the noise impact and the number of properties which would require insulation. The qualification thresholds proposed at Stansted by the Airports Commission in 2013 for acoustic insulation at 90dBA SEL – whereby the airport operator will meet either the full cost of secondary glazing, or half the cost of double glazed replacement windows are:
 - daytime 66dB LAeq 16-hour noise contour (0700 hours to 2300 hours)
 - night 90dBA SEL noise footprint (2300 hours to 0700 hours).Even these are considered wholly inadequate by the authors of the attached report (**Doc 10 Stop Stansted Expansion doc para A8.6**).
- 4) I live under the flight path in Herne Bay. In 2004-5 some freight flights landed after 2330 hrs and at 0600 hrs – the sleep disturbance from which significantly contributed to my contracting a serious chronic illness (Myological Encephalopathy) and enforced retirement aged 52 (**Doc 11 Personal Statement**).
- 5) 5.2-2 Environmental Statement vol 2 chap 11-16 Table 12.3 I disagree that the three locations selected in Herne Bay gave an accurate assessment of baseline noise levels against which to measure the impact of aircraft noise, viz: (i) a 100m deep strip of land between the mainline railway and A299 dual carriageway; (ii) one of two main thoroughfares through the town; (iii) a main exit route from the town and adjacent to the mainline railway. In every case, residential (or shopping) areas close by would have given a far more accurate assessment of the true impact of aircraft noise on the community. (**Docs 12-14 location maps**)

ADDITIONAL POINTS

I have included the following points to add my views to the whole, but without attached documentation as I am aware they have been dealt with by other submissions which will include the relevant documents.

ENVIRONMENTAL IMPACT – TRAFFIC

I disagree with the Application's assessment of the impact on local road networks of the cargo hub (5.1 Environmental Statement 4.1.56).

- 1) Maximum HGV movements are estimated at maximum 64,906 p/a, whereas East Midlands Airport with less freight than that forecast for Manston by RSP has 182,500 HGV movements p/a.
- 2) The Application lacks detailed consideration for required road capacity beyond the immediate access to the airport. The A299 and M2 (the only fast access route to Manston) are only 2-lane and already busy with HGV traffic.

MARKET POTENTIAL AND ECONOMIC BENEFIT

I disagree with the Application's claims of Manston potential economic benefits:

- 1) No independent assessment identifies a market potential for a cargo airport Manston to reach operational levels required to qualify for national significance; previous attempts have failed.
- 2) 5.1 Environmental Statement para 4.1.50 states 3417 jobs at Manston by 2020 but the existing owners propose 2000+ jobs on the site.
- 3) Inadequate assessment of the negative impact on the East Kent economy whose tourism/leisure industry, and property values, have shown significant growth since Manston closed. Another failed attempt at an airport could reverse that growth with severe socio-economic impact.

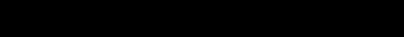




Comments from Herne Bay residents on RSP proposals for Manston Airport

from an online petition in response to a proposal for a limited number of night flights at:



Sig No.	Comment
128	Not only night flights are serious to our quality of life but what about how low the planes fly during the day and query the flight paths because Studd Hill, Tankerton, Whitstable are being constantly flown over at very low height. Why can't they come in from the sea - Manston in Thanet so keep the planes over Thanet. We were not consulted on the flight paths and have been told they are supposed to fly over the sea to Hampton Pier then turn in but they are not.
236	No Night flights the path is directly over my house as most of the rest of Herne Bay. Victorian houses do not have extra glazing the sound would be unacceptable
260	HAD I NOT READ ABOUT THIS CAMPAIGN IN THE FREE" HERNE BAY TIMES" I WOULD HAVE KNOWN NOTHING ABOUT THIS PROPOSED PLAN. I LIVE DIRECTLY UNDER THE FLIGHT PATH AND AM VERY AWARE OF THE NOISE FROM EXISTING FLIGHTS.THERE NEEDS TO BE A CAMPAIN WITH PEOPLE GETTING SIGNATURES ON THE STREETS OF HERNE BAY, I AM SURE SOME LOCAL SHOPS WOULD DISPLAY POSTERS AND BE HAPPY TO HAVE FOFMS FOR THE LOCAL PEOPLE TO SIGN
274	Why is it always Herne Bay
298	The flights over Herne Bay are so low I soon expect to be serving the pilots cups of tea. Why at night there is plenty of time during the day when there are no flights
300	I totally disagree with night flights, particularly the extremely noisy freight flights. We have very recently moved to Herne Bay and I did investigate the potential impact of Manston prior to purchasing our property, and at that time there was no suggestion of night flights. We would have seriously reconsidered the move if this has been mooted.
301	I do not consider night flights over Ramsgate are in the public interest, they should not be allowed. They will also affect areas of Herne Bay, & many rural villages.
315	My home is on the direct fly path in Herne Bay. If this were to be for holiday flights perhaps I could not be a NIMBY. But for commercial reasons I fail to see why I should be submitted to being woken up at night by these flights.
335	I did not buy my property in Beltinge to live under a flight path. Night flights should not be allowed to pollute our lives- Day flights should be kept away from populated areas as much as possible.
338	I moved from London 5 years ago to Studd Hill for the peace and quiet. I have been coming to Herne Bay since I was 14 so have seen some changes over the years. I feel very strongly against flights of any sort in and out of Manston, as the flight path seems to follow the coast line and planes fly directly over my back garden, on several occasions I phoned EU jet when they were operating to complain about the noise levels. If I wanted to live under a flight path I would have moved to Hounslow. I will try to get neighbours to sign the petition. Regards 
341	My House is directly under the flight path at Beltinge, and it would be very noisy at night and make it impossible to get the proper rest
344	Flights come in too low now over Herne Bay. If we have night flights we will not get any sleep, and if that happens we will sell up and move from the area
348	I am annoyed that so many flights come directly over Herne and Herne Bay instead of following the agreed flight path between Reculver and Manston during the day and night at present and I certainly do not wish to see the number of night flights increased.
350	we do not want the peace and quiet of Herne Bay to be spoiled by the noise of night flights
355	As a resident in Herne Bay I do not wish my peace of a night-time to be disturbed by night time flights from flights in and out of Manston
357	I THOUGHT THAT THE FLIGHT PATH TO MANSTON WAS TO BE OVER THE SEA TO RECVLVER, WHY DOES IT ALWAYS GO OVER HERNE BAY TOWN CENTER IS IT LACK OF PILOT KNOWLEDGE

Sig No.	Comment
363	I live in Beltinge and I actually find the current level of flight noise obtrusive
371	If we cannot trust them to take on-board and act on our comments about the flight path and that there is no need for them to fly directly over Herne Bay when there is an appropriate and acceptable alternative that does not harm local business or impact on its residents, how can we take their word that an increase in operating hours which includes night flights would not be abused. Businesses must work with all the communities around it and not just those closest to them ignoring all others which will be impacted on the basis that they are not within the immediate area and therefore of little consequence.
372	We definitely don't want night flights coming over our house in Herne Bay. We bought this as our retirement home and don't want the noise in our retirement.
385	We would not have moved to Herne Bay in 2000 (as we did) if there had been any possibility of night flights and will have to move. We would not be alone in moving away and this will blight the area. It is totally unfair to subject people to these flights when we are already living in the area.
396	We in Herne Bay already have enough noise and pollution with heavy traffic - more take off flights out to sea - none after 11pm overland as set out in the original agreement
417	Experienced the noise of late landings (past 23.30) of the previous failed operators EU Jet - their planes on landing decent path to Manston, descending over Herne Bay and Beltinge. Certainly NOT a happy bunny at the prospect, such joy as a late night cargo 747 jumbo lumbered overhead! ***** !
423	What about the extremely low flying aircraft during the day that pass over my house. They are so low sometimes that you could read the writing on the side and it is still some miles to Manston from Herne Bay!!! Surely this should also be looked at.
426	I am disabled and live in Linden Ave Herne Bay which is on the flight path. I can not move if I wanted to as it would need any new place adapted. So would be stuck with it noooooooooooooo I do not want night flights over my place. I note letters in press who are for people who are not under the flight path.
439	I do not feel that planes need to fly over Herne Bay at any time. When Kent International originally opened, they proposed a flight path further along the coast towards Thanet and away from built up areas. Now they appear to follow the railway through Herne Bay and Beltinge, which is unacceptable to thousands of people in residential areas.
452	Freight planes fly so low over my house in Bournemouth Drive that sometimes you can see the pilot's face. The noise is intolerable and if planes are allowed to fly at night then, despite, double glazing sleep will be deprived. The passenger flights are also noisy but they do fly at a slightly higher level. I have spoken to councillors about this problem but was told that the radar at Hampton was broken. If they wish to improve Manston then new radar systems would be needed so that planes can come in from the sea between Herne Bay and Birchington where there are no houses.
457	Totally opposed to all flights day or night from and to Manston, as currently flight path is directly and unnecessarily over Herne Bay!
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489	NO I DONT WANT MANSTON AIRPORT TO EXPAND/NIGHT FLIGHTS. I live right under the flight path in Herne Bay and the planes that come over are so low and loud. No one is thinking about the environmental impact and pollution over Herne bay. I will never use this airport!!!!!!!!!!
509	We are finding the existing flights over Beltinge too noisy and do not want any more, especially at night time.

Sig No.	Comment
520	Living in the centre/sea front of Herne Bay town centre the only quiet time we get is at night .
525	I have recently moved to Herne Bay and have become increasingly concerned over the number of extremely noisy low flying aircraft. The thought of this continuing at night is horrendous. I fear we could soon become a 'blighted zone' in terms of house prices and visitor numbers for who would buy a house in or visit an area for a day by the sea where aircraft noise is so intrusive?
536	Living on Studd Hill we are fed up with planes not keeping to the flight path which is over the sea via Hampton Jetty. They fly so low we can see the pilot sometimes when they are directly overhead where they should not be! We are woken some nights now with flights at 11pm onwards. God help us if they flew all through the night.
568	I do not want to be woken all night by these flights - although planes are meant to fly out and in over the sea - in practice they DO NOT and fly literally up Herne Bay High street with all the accompanying noise and pollution.
603	I live right under the main flight path in Herne Bay. Sometimes some of the large freight planes are that low you think you can almost touch them and the noise is deafening. How does anyone think that we will ever get a nights sleep with large 747's coming over, possibly, one every hour of the night. Climate change has shown an increase in day & night temperature, so with windows open the noise level of a 747 coming over at 2 am is very worrying. I see no reason at all why Manston Airport can not run its business under its current arrangements.
613	The current westerly approach routes aircraft directly over my house in Cecil Park, Herne Bay and current experience of daytime noise levels is disturbing when 'jet' aircraft are involved (throttle-back or extra power adjustments are often made above us) . Such eventualities at night will be unbearable!
627	The existing 3 flights per week are bad enough, flying directly above the estate over Beltinge at night are very loud and disturbing.
637	Current odd night time flight wakes us up, so what would 7 flights a night do? We live directly under the flight path in Herne Bay at the top end of Central Avenue, when EU Jets were going over during the day at half hour intervals we found them quite noisy with their wheels down, flaps down and throttle changes to the engines, these more modern engines supposedly quiet compared to the old freight planes currently in use.
648	I have just returned from a holiday in Turkey, flying wth Turkish Airlines out of Heathrow. We left at 7am & returned at 5pm. As much as I love flying, I do respect people's views on the ground. I would not fly before 7am or arrive after 7pm no matter what airport. I agree with all Herne Bay people who say NO NIGHT FLIGHTS! I think it only fair to say that Herne Bay Councillors on Canterbury City Council, all live beneath the Manston Flight Path, and all agree---NO NIGHT FLIGHTS!
655	My family do not want these night flights as it is, they come over my bungalow too low now. I can imagine what it will get like if more planes were to take off from Manston. I thought the one that come in to land were supposed to around the coast not over Herne Bay.
656	I object to any flights to or from Manston Airport between the hours of 11pm and 7am. We in our part of Herne Bay are directly under the flight path and the noise from low flying aircraft is bad enough during the day, without being kept awake at night.
657	What about the noise for Herne Bay residents? Present flights already fly directly over my property during the day. I dread to think of more broken nights sleep.
660	I say a definite no to night flights over Herne Bay. This town of ours should be left as it is and as it should be, a peaceful seaside place. In my opinion Manston airport is a no go situation and all the better for it.
669	It would be in their own interests to modify the current flight landing path so they are out over sea until past Reculver towers. If it could be then shown that landings could take place without disruptive noise throughout Herne Bay there would be no need to object.

Sig No.	Comment
685	I do not want night flights over Herne Bay .
690	We currently have a few flights going over our home in Herne Bay per week, despite the media stating that no flights actually go over the town. If this increases, life will be intolerable. We moved from Hertfordshire because of the increase in traffic to Stansted, only to find the peace of Herne Bay not being so peaceful. Whilst we are all for business ventures being successful, this should not be to the detriment of people's lives. If you visit villages around Stansted, it is almost like being on a film set for Close Encounters of the Third Kind.
694	On moving to Herne Bay 22 years ago, we had at no time anticipated finding ourselves under the flightpath of heavily laden antiquated noisy Jumbo Jets.
695	Surely allowing night flights between 11 pm and 7 am must be some infringement of the Human Rights of the residents of this area. Why should the profits of the owners of Manston Airport be put before the well being of the people who live here. It is also wrong that Thanet council only consult with their own residents and decide that they will allow this to happen as long as the flights are in a westerly direction, thus minimising the noise over Thanet but inflicting it instead on the residents of Herne Bay and areas.
697	Count me in, I'm in Herne Bay and can read the plane numbers as they fly over.
698	We already have night flights during the week. We do not want any more. Our house is three storeys and you really feel them when they come over,... and we live in Herne Bay central.
703	I reside in Beltinge which is under the 'West' flight-path. This area includes a new estate with many school children also elderly retired people live in Beltinge who will of course be disturbed by night flights. I believe this 'Change of use' will breach the rights of residents under The Human Rights Act in respect of Article 8 which covers the right to respect private and family life. Many persons such as myself moved to this area to retire for peace and quiet but with the intermittent Shoeburyness explosions during the day and now the impending night noise from aircraft it is now reminds me of the blitz of London in the last war. Will our council tax be suitably adjusted to compensate for this added nuisance and devaluation of property prices?
712	I strongly object to proposed changes to increase the number of flights over Herne Bay. I don't know how anyone can even suggest this number of flights per night and feel it acceptable and think the people of Herne Bay aren't going to protest.
714	It seems very unfair that all decisions about planning approval for this is with Thanet Council when a great deal of the noise also affects Herne Bay.
715	We live in Broomfield and night flights would be a major intrusion on our life, ruining sleep and impacting health
716	As a resident of Broomfield, Herne Bay the proposed night flights would be an absolute nightmare. It would be preferable for Manston Airport to close totally!! Short term commercial gains should not be allowed to ruin thousands of families' quality of life. This unfair and undemocratic proposal must be stopped.
725	Please move the flightpath over Reculver country park so as not to destroy the peace of Herne Bay
726	This is an imposition too far. My dog goes berserk at every plane that flies in over my property in Beltinge. Night flights would be intolerable.
727	Having lived in Herne Bay for the last 4 years and being pretty much under the flightpath, the occasional sound of a cargo plane coming into land is intrusive but bearable. I cannot begin to imagine the noise pollution that would occur with night flights. In my view the sound would be far more intrusive and with the potential of 6 flights per night every night life for everyone on the path would become intolerable. The NIMBYism shown by Thanet District Council is appalling and nothing short of arrogant. It cannot and must not happen.



Sig No.	Comment
728	I moved to Herne Bay because it was a quite and peaceful place to live. The flights that go over occasionally now vibrate the house. If that happens at night I will never be able to sleep!
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730	I moved to Herne Bay because it was a quite and peaceful place to live. The flights that go over occasionally now vibrate the house. If that happens at night I will never be able to sleep!
742	The commercial aircraft already generate very loud noise and vibration during the daytime hours. We have difficulty sleeping anyway and constant noise during the night time would seriously affect our health and well being. The current hours of flights are tolerable. There are caravans and tourist accommodation in the area which bring money to the Herne Bay area. The caravans in particular would be affected by night noise.
744	We definitely do not want any night flights from Manston. We moved to Herne Bay 3yrs ago and this home now is for our retirement, we don't want our retirement spoilt by being on a flight path.
747	Living in Herne Bay, in line with the water tower, we are currently disturbed by the few late flights that do occur. The planes use the water tower as a landmark to guide them into the airport. The noise can be startling, especially in the early evening. Adding night flights to this is unthinkable, especially as it is entirely possible for planes to approach the airport over the sea and bank round, thus avoiding residential areas completely. With two young children, I feel extending the flights to the entire night period is unthinkable. The airport must be made to re-think its development plans in a more innovative way that does not disturb any residents never mind those in Thanet!
748	Has anyone noticed that these night flights are already happening? For several weeks now there have been a series of aeroplanes flying over Herne. They start at just about 11 p.m. and can carry on until 12.45 a.m. Judging by the low pitched, extremely noisy engine sounds and the length of time it takes for each 'plane to pass over, I would imagine that they are indeed laden cargo 'planes. I have also been woken up at 03.15 a.m. and 4.15 a.m. The latter time there were three 'planes. It will be totally unbearable if this is allowed to happen every night! Why is it that the 'consultation' meetings are apparently happening in Margate, and not in Herne Bay? Why do these flights have to happen overnight when there are few flights from Manston during the day? To those who say that 'airports are noisy' or 'why move close to an airport?' I am sure I am not alone in pointing out that these shamefully noisy nocturnal flights are 'new.' NO NIGHT FLIGHTS FROM MANSTON. NO. NO. NO!
751	This will ruin the lives of people in Herne Bay, if we can't get any full sleep at night. Why do they have to do this? I guess it's all down to finances once again. Let's keep Herne Bay a peaceful place to be, it's also not a good green foot print is it. I'm speechless really, all society is in downward spiral. Who would want to holiday here if they are woken throughout the night with noisy old planes, it could end up with no holiday makers.
755	We are still trying to get compensation for unauthorised/unexpected night flights over Herne Bay for NCI Herne Bay - so far, no response!
764	I live in High View Avenue, Herne Bay and the planes fly directly overhead as they seem to line up with Herne Bay High Street. I fail to understand why they cannot approach from a different angle over the sea.
765	I live in Herne Bay very close to the sea front. These old 747's fly directly over my home and shake the windows. 7.7 flights per night will drive me mad.

Sig No.	Comment
767	Noise is magnified at night, it would be a nightmare trying to get a reasonable night's sleep. You are correct about the age of these freighters, once a 747 or any other aircraft is past its best it is either converted to carry freight, or scrapped. Herne Bay should also be aware that with the existing Flight Paths we will probably get a double whammy, one on the approach to the airport the other on departure when turning North and North East over the sea. Planes on the ground don't make any money, therefore they will be reloaded and dispatched as quickly as possible, has this been taken into consideration ?
768	Why fly over Herne Bay? Can't they land and take off with a flight path straight out to sea? Also if TDC approve this will they be compensating home owners in Herne Bay that will undoubtedly loose money on their house values as a result. This should be restricted to Thanet, and not spread any wider. There are already night flights that occur and ALWAYS wake us up, if 7 planes a night are approved then we will get no sleep at all. The planes are so loud when they go over us.
769	The flight path travels directly up the Beltinge Road right above us. I don't wish to sound like a nimby but given the fact that the prevailing wind is south west why don't the aircraft approach from the sea? Might this current arrangement be the brainchild of all those Thanet councillors that appear on the map I have just perused as part of this campaign? This 6 night flight proposal is the thin end of a considerable wedge! If this initiative succeeds look forward to ever increasing traffic, both day and night. City airport being a prime example of this!
772	I strongly object to the proposal of more flights day or night. My home will be exactly under the flight path in Herne Bay and I value the peace and quiet which is the reason I purchased the property in recent years. At the moment when flights pass overhead the roar is extremely loud, even when inside the house. The undercarriage is easily visible (and I don't have perfect eyesight). NO TO MORE FLIGHTS!!
774	The flightpath across Herne Bay follows the main railway line from west to east into Manston. That railway line is immediately behind my house, so low-flying aircraft travel directly over my property. Existing daytime air traffic is already extremely noisy and intrusive, especially the large 747 aircraft. I am against any increase in existing air traffic from west to east at any time, ESPECIALLY night flights.
775	I understand that there should only be one signature per email, but as my wife does not have her own email, please add Marjaana Tuck to the list as well. We are both very unhappy with the present amount of flights, even without additional night flights. Our original understanding was that the planes were supposed to make an approach over the motorway or the sea, but instead they fly directly over Herne Bay, at times so low you can wave to the pilot. We are also upset over the fact that decisions in regards to this seem to be taken without even considering the opinion of the people most affected by such changes.
777	No night flights over Herne Bay
778	No night flights over Herne Bay In Fact no flight paths over Herne Bay!
780	I live in Beltinge the flights already come over us at a very low altitude we definitely do not want them through the night
781	If this crazy idea comes to fruition will I, or others be able to claim for free extra sound insulation as in Herne Bay Beltinge we are right under the flight path
782	Please don't ignore Beltinge residents, we are directly under the flight path and need our sleep! Please consider changing the flight path to go beyond Reculver Towers.
783	I am concerned that living in Herne Bay that - the increase in night flights will seriously effect my quality of life. At the moment flights pass directly over my property at low level, this I accept however an increase would make the quiet life style I moved here for 2 years ago unbearable.

Sig No.	Comment
786	<p>All the flights into Manston fly directly OVER my bungalow! When some planes landing at night have been soo noisy that they have woken me up shaking with the noise and feeling that they are not going to make it over the roof of my bungalow. Several times I have waited for a crash and that's no lie.</p> <p>If Heathrow, Gatwick and Stansted have banned, except in emergencies, all QC4 aircraft landing between 23.00 and 6.00am since October 2005 and no aircraft over QC4 are allowed to land between 23.00 and 7.00am, surely that says it all!!!</p> <p>Those large airports wouldn't ban these flights for no reason!!</p> <p>Why can't we have a vote or meeting in Herne Bay to show our disapproval at the these planned flights.</p> <p>It is not only me but the many other residents living in Herne Bay who are/will be affected living right under the flight paths.</p>
787	<p>I live in Herne Bay directly under the flight path to Manston and already find the noise of the flights extremely annoying- and intrusive. Night flights would be far too disruptive for sleep, and I object to any being allowed and sign the petition against this.</p>
797	<p>No night flights at Heathrow No old banger night flights over Herne Bay</p>
808	<p>I do not live at Manston , I live in Herne Bay so i do not want to hear aeroplanes, its bad when they come over on a Sunday.</p>
814	<p>I did not move to Herne Bay to be kept awake at night!!</p>
819	<p>I really do not want night flights over Herne Bay It's noisy enough with the limited number that pass overhead at the moment.</p>
821	<p>As I live in Herne Bay I DONT want any night flights coming over here at night as I wont get any sleep being a light sleeper..</p>
822	<p>I do not want more night flights from Manston. I have lived in Herne Bay for over 20 years. During the time that there were Eastern European flights going from Manston they flew over Herne Bay and turned back over it before flying out of Britain. The noise was terrible and doubled up because of Herne Bay being exactly under the turning point. I feel that license to fly more night flights will mean more noise over Herne Bay.</p>
836	<p>As I live along the sea front in Herne Bay when plane comes in to land in the still of night it make so much noise that you can't get back to sleep, so I think that night flights would a nightmare.</p>
842	<p>As a guest house owner on Herne Bay sea front it will not take long before our guest visiting Herne Bay start checking out the next morning if they plan on flying over 7 cargo planes per night, these planes are old, noisy, and are very low, how much more do we have to put with noise, so far we have explosions from the testing site across the water, flooding due to poor maintaince from the water companies, cars and motorbikes racing up and down.and now we are being attacked from the sky, welcome to Herne Bay for your quite relaxing holiday,?????????????????</p>
849	<p>No I do not wish to have noisy 747s or any other jets flying over Herne Bay at night. I live virtually under the approach flight path into Manston and the noise is at times is quite unbelievable, so NO to night flights.</p>
854	<p>I cannot believe that anything carried by scheduled freight or passenger planes is so essential that it requires the disturbance of the sleep of thousands residents in Thanet and Herne Bay.</p>
857	<p>I am totally opposed to the proposed night flights over Herne Bay. We live under the flight path when the wind is from the east which seems to be quite frequently. The planes are so low you can read any of its markings. The thought of having seven flights a night fills me with dread and not the reason that I moved to Herne Bay from London.</p>
871	<p>No thank you I live in Herne Bay and already suffer with flights flying over my property and the excessive noise. To have this in the evening would be unbearable</p>

Sig No.	Comment
884	We are strongly apposed to any night flights which fly over Herne Bay due to noise pollution which will cause sleep disturbance. This will also increase traffic using the Thanet Way, causing more disturbing noise if this is the method they propose to move the cargo.
891	It seems like these noisy planes are already flying over Herne Bay! Whilst out in our garden at various times of day during recent weeks, we have witnessed some very large, very low and very noisy aircraft heading over our house at Beltinge towards Manston - something that has previously hardly ever occurred! If the Council approves the application and this noise pollution continues, as proposed, every day throughout the day and night in future - then the effect will be intolerable and adversely affect the lives of thousands of families.
905	I do not want any increase in flights either day or night over Herne Bay
913	Having a young family, the proposed increase in noise pollution can only have a detrimental effect on our lives. The noise experienced by the daytime flights currently over Herne Bay can be deafening at times - the impact of this at night when the vast majority of people will have their lives disturbed needs to be understood by the decision makers.
923	Currently cargo flights into Manston overfly my property in Herne Bay, and the disruption of night flights is unacceptable.
925	Many of the cargo flights come into Manston over Herne Bay and night flying will be unacceptable.
926	Living in Beltinge these planes fly so low that you can almost see the make of the tyres as they are lowered. The pilots frequently have to increase the power to their engines as they pass over Herne Bay. On the odd occasion that a late flight does come over late at night now, it drowns out any conversation or television sound as it passes, such an event taking place on a regular basis, later at night or earlier in the morning would make living in Herne Bay unbearable. Please Say No to night flights!
945	I live in Herne Bay and occasionally, say twice a week, we get awoken, usually just after dropping off by what sounds like the loudest plane I have ever heard, a few feet from our roof. Obviously this is not the case, however it is the perception here that is important. I used to live in Margate, much closer to Manston, but it never happened there because it wasn't on the flight path, if the agreement for more night flights goes ahead, it will be an intolerable intrusion into our lives.
948	Why are the planes diverted to fly over Herne Bay, and the reason some fly so low.

Contact details

- Tel: [REDACTED]
- [REDACTED]
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Manston's night flight proposals are opposed by 73% (by 89% of those under flight path)

Date added: April 11, 2012

The majority of people living near Manston Airport are against plans to operate more night flights, research by Thanet District Council has suggested. They say 73% of 2,000 residents questioned were against the proposal of the owners, Infratil. People cited potential noise levels and disturbance to sleep as their primary reasons for objecting. The airport is desperate to get some night flights for freight, to try and make a bit of money, and say they have to be given some "flexibility". The Thanet District Council report goes to Cabinet on Thursday 10th May and will then be considered at an Extraordinary meeting of Full Council on Thursday 24th May. Canterbury City councillors have concluded that flights between 23:00 and 07:00 were 'not justified' given strong opposition from Herne Bay residents, and they will submit a formal objection.

Tweet

Kent's Manston Airport night flights plan 'opposed'

30.3.2012 (BBC)



The refurbished terminal is capable of handling up to 700,000 passengers a year

The majority of people living near Manston Airport in Kent are against plans to operate more night flights, council research has suggested.

Thanet District Council said 73% of 2,000 residents questioned were against the proposal of the owners, Infratil.

They cited potential noise levels and disturbance to sleep as their primary reasons for objecting.

Manston's chief executive Charles Buchanan said he was "rather surprised" by the results.

He said the majority of people who had contacted the airport were in favour of night flights.

'Desperately needed'

"All we are asking for is a limited, managed and mitigated amount of night-time flying," he said.

"If we are going to attract airlines that are going to provide the travel services that people want, and provide the jobs that are so desperately needed in east Kent, we must have some flexibility."

Clive Hart, the council's Labour leader, said: "I very much hope the airport will take on board the thoughts and feelings of the people of Thanet."

The airport currently deals with passenger and commercial aircraft with a runway capable of taking Boeing 747s and Airbus A380s.

Its refurbished terminal is capable of handling up to 700,000 passengers a year.

Earlier this month, Infratil announced plans to sell Manston Airport, near Ramsgate, and Glasgow's Prestwick Airport.

<http://www.bbc.co.uk/news/uk-england-kent-17560154>

Council to object to Manston Airport night flights plan

08.04.12

Canterbury City Council has challenged plans for night flights at Kent's Manston Airport, the Herne Bay Times reports. City councillors held a meeting to discuss the latest plans on Thursday and concluded that flights between 23:00 and 07:00 were 'not justified' given strong opposition from Herne Bay residents.

In a district-wide survey, 80% of the 230 replies were against night flights, with 20% saying that they could boost the economy and create jobs, economic growth and regeneration.

The council members voted to submit a formal objection.

<http://www.uk-airport-news.info/kent-airport-news-080412.html>

Thanet rejects Manston night flights

More than 2,000 residents air their views

More than 2,000 residents took the time to air their views as part of the council's public consultation on proposals for regular night-time flying at Manston Airport. The majority were opposed to the implementation of regular night-time flying, with approximately 73% opposed, 26% in favour and 1% not clearly stating a position.

The main reasons given by those who were opposed were:

- the likely disturbance to sleep
- the effect on health and quality of life
- unacceptable noise levels
- the likely detrimental impact on the local economy
- overstating the potential economic benefits.
-

Those in favour stated the reasons for their support as including:

- jobs/employment opportunities
- regeneration of Thanet
- their desire for the airport to develop



Environmental Noise Directive Noise Action Plan 2013-2018

Supporting annexes – Revised draft submitted in January 2014

Adopted and approved by the Secretary of State for Environment, Food and Rural Affairs – August 2014

Heathrow
Making every journey better

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1. Glossary of terms

aal	above aerodrome level
AIP	Aeronautical Information Package
ACOP	Arrivals Code of Practice
AONB	Areas of Outstanding Natural Beauty as defined in the National Parks and Access to the Countryside Act 1949
ANASE	Attitudes to Noise from Aviation Sources in England
ANCON	Aircraft Noise Contour Model
ANCON 2	Aircraft Noise Contour Model version 2
ANMAC	Aircraft Noise Monitoring Advisory Committee. The committee is chaired by the Department for Transport and comprises, among others, representatives of the airlines, Heathrow, Gatwick and Stansted airports and airport consultative committees
APF	Aviation Policy Framework
APU	Auxiliary Power Unit. A power unit located on the aircraft
ATC	Air Traffic Control
CAA	Civil Aviation Authority
CDA	Continuous Descent Approach
dBA	A unit of sound pressure level, adjusted in accordance with the A weighting scale, which takes into account the increased sensitivity of the human ear at some frequencies
Decibel (dB)	The decibel (dB) is a logarithmic unit of measurement that expresses the magnitude of a physical quantity relative to a specified or implied reference level. Its logarithmic nature allows very large or very small ratios to be represented by a convenient number. Being a ratio, it is a dimensionless unit. Decibels are used for a wide variety of measurements including acoustics, and for audible sound A-weighted decibels (dBA) are commonly used
DEFRA	Department for Environment Food and Rural Affairs (UK Government)
DfT	Department for Transport (UK Government)
ECAC	European Civil Aviation Conference
ERCD	Environmental Research and Consultancy Department of the Civil Aviation Authority
FEGP	Fixed Electrical Ground Power
FEU	Flight Evaluation Unit
FLOPC	Flight Operations Performance Committee
GPU	Ground Power Unit
HACC	Heathrow Airport Consultative Committee
HNF	Heathrow Noise Forum
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System

1. Glossary of terms

L_{day}	The A-weighted average sound level over the 12 hour day period of 0700 - 1900 hours
L_{den}	The day, evening, night level, L _{den} is a logarithmic composite of the L _{day} , L _{evening} , and L _{night} levels but with 5 dB(A) being added to the L _{evening} value and 10 dB(A) being added to the L _{night} value
L_{eq}	Equivalent sound level of aircraft noise in dBA, often called equivalent continuous sound level. For conventional historical contours this is based on the daily average movements that take place in the 16 hour period (0700- 2300 LT) during the 92 day period 16 June to 15 September inclusive
L_{evening}	The A-weighted average sound level over the 4 hour evening period of 1900 - 2300 hours
LPA	Local Planning Authority
L_{night}	The A-weighted average sound level over the 8 hour night period of 2300 - 0700 hours
NATS	Formerly known as National Air Traffic Services Ltd. NATS is licensed to provide en-route air traffic control for the UK and the Eastern part of the North Atlantic, and also provides air traffic control services at several major UK airports, including Gatwick
Noise Contour	Map contour line indicating noise exposure in dB for the area that it encloses
Noise Respite	Predictable periods of relief from noise
NPPF	National Planning Policy Framework
NPR	Noise Preferential Route
NPSE	National Policy Statement for England
NSG	Noise Steering Group
NTK	Noise and Track Keeping monitoring system. The NTK system associates radar data from air traffic control radar with related data from both fixed (permanent) and mobile noise monitors at prescribed positions on the ground
OSI	Operational Safety Instructions
PNdB	Perceived Noise Level, measured in PNdB. Its measurement involves analyses of the frequency spectra of noise events as well as the maximum level
PPG	Planning Policy Guidance
QC	Quota Count - the basis of the London airports Night Restrictions regime
SEL	Sound Exposure Level. The level generated by a single aircraft at the monitoring point. This normalised to a 1 second burst of sound and takes account of the duration of the sound as well as its intensity
SOR	Start-of-roll: The position on a runway where aircraft commence their take- off runs
SoS	Secretary of State
Sustainable Aviation	A UK aviation industry initiative aiming to set out a long term strategy for the industry to address its sustainability issues

2. Annex V of original DEFRA Guidance and extract from Defra's action plan guidance for airport operators 2013

Box 2
Annex V from the END as it applies to airports

An Action Plan must at least include the following elements:

- A description of the airport and any other noise sources taken into account;
- The authority responsible;
- The legal context;
- Any limit values in place;
- A summary of the results of the noise mapping;
- An evaluation of the estimated number of people exposed to noise, identification of problems and situations that need to be improved;
- A record of the public consultations organised in accordance with Article 8(7);
- Any noise reduction measures already in force and any projects in preparation;
- Actions which the airport operator intends to take in the next five years, including measures to preserve quiet areas;
- Long term strategy;
- Financial information (if available): budgets, cost-effectiveness assessment, cost-benefit assessment;
- Provisions envisaged for evaluating the implementation and the results of the Action Plan

The Action Plan should contain estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other)

2. Annex V of original DEFRA Guidance and extract from Defra's action plan guidance for airport operators 2013

5. Process for those airports that already have an Action Plan prepared under the terms of the Regulations

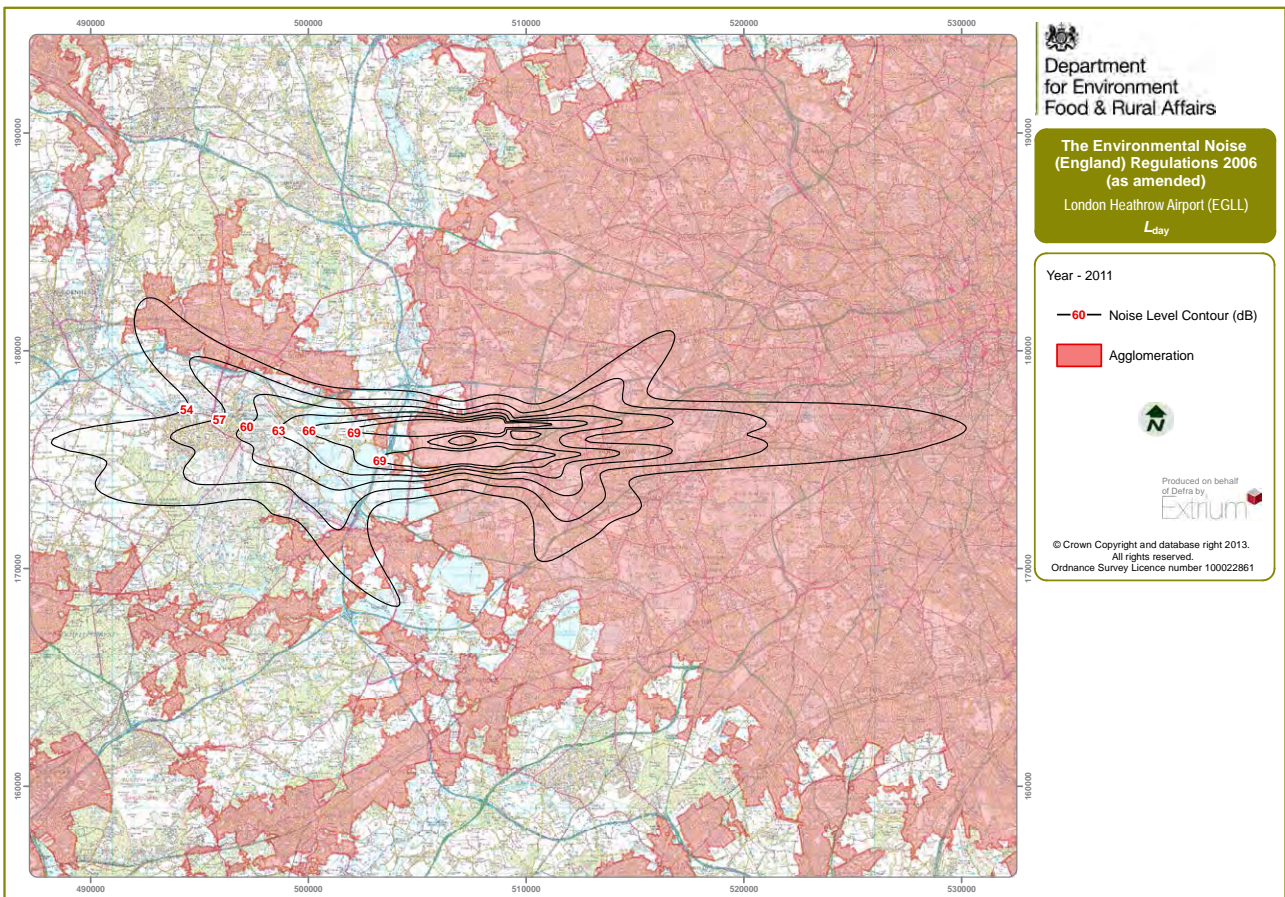
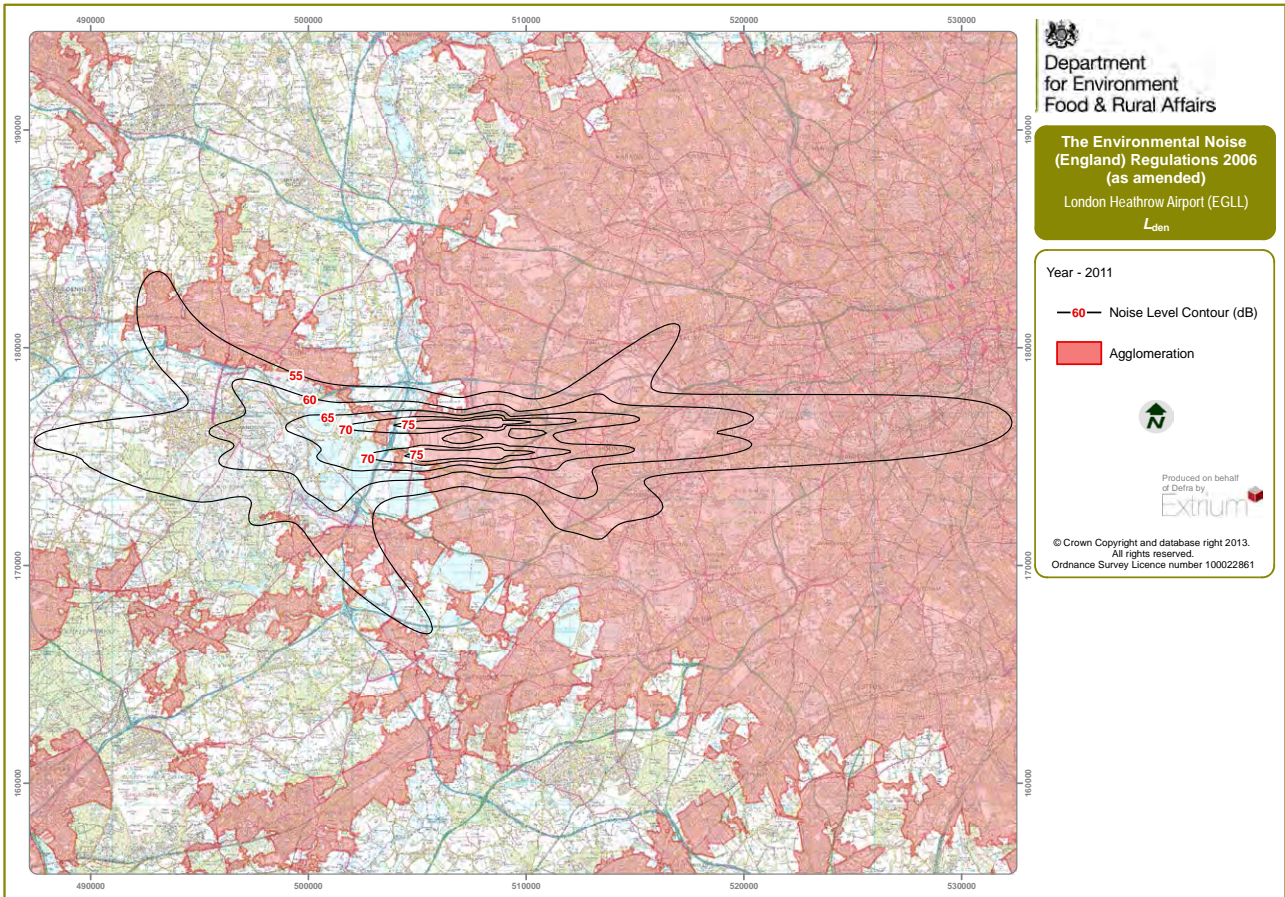
- 5.1 For those airports for which an action plan, prepared under the terms of the Regulations, exists, the following process should be followed.
- 5.2 The current action plan should be reviewed taking account of:
The results of the noise mapping completed in 2012; and
The progress made against the actions described in the current action plan;
- 5.3 The current plan should be revised to include, as necessary:
Updating details about the airport and its operation;
Updating information about relevant legislation and standards; and
Updating relevant national and local policies
- 5.4 The revision to the plan should also include:
The results of the recent round of noise mapping;
Information about the progress made against the actions described in the current plan
Information about on-going actions
Information about any proposed new actions
- 5.5 It is envisaged that once the plan has been revised, it will be presented to the Airport's Consultative Committee for comment, and any other appropriate bodies depending on the extent and nature of the revisions.
- 5.6 The Airport Operator will reflect upon the comments received from the Consultative Committee. A description of those comments should be included in the revised plan together with a reasoned justification for the response to the issues raised. The Airport Operator shall include, as appropriate, information about those who responded to the consultation (unless they indicated that they did not wish to be mentioned).
- 5.7 In the revision of the plan, the Airport Operator must be sure that the information required by Annex V of the Directive (see Box 2 and Section 2 of this guidance) is included.
- 5.8 Once the revised plan has been finalised, it needs to be sent to the Secretary of State for Defra. The document must include prominently displayed wording identifying it as a draft subject to formal adoption and approval.³⁶
- 5.9 The Secretary of State for Defra, in liaison with the Department for Transport, will form a view regarding whether or not the submitted revised plan meets the requirements of Regulation 15 and, therefore, whether or not the plan is appropriate for adoption.
- 5.10 If the Secretary of State for Defra considers that the requirements of Regulation 15 are not met, the airport operator will be required to make the necessary changes to the revised plan so that the requirements of Regulation 15 are met in full. Following revision, the revised plan will need to be resubmitted to the Secretary of State for Defra by an agreed date for further consideration.
- 5.11 Once adopted, the revised Noise Action Plan should be published by the Airport Operator as a public document in an electronic format, within 28 days of being informed that the revised Noise Action Plan has been adopted.
- 5.12 The Regulations contain a continuing obligation on Airport Operators to review (and revise, if necessary) the Noise Action Plan every 5 years or sooner where a major development occurs. Where the Airport Operator feels that such a review is necessary, then the process described in paragraphs 5.5 – 5.11 above regarding consultation and submission shall be followed.
- 5.13 Airport Operators may wish to agree to carry out an informal review of the progress being made on the implementation of the Action Plan as part of their continuing engagement with the local airport consultative committee or other stakeholders. The process and timing for any informal review should be jointly agreed between the Airport Operator and the committee, or other stakeholders, as appropriate. Such reviews could form part of any regular environmental reporting that is already undertaken.
- 5.14 It should be noted that, under the terms of Regulation 26³⁷ of the Environmental Noise (England) Regulations 2006, the Secretary of State has the power to take action should he believe that a requirement of these Regulations is not being met due to any act or omission by the Airport Operator.

³⁶ Regulation 29 (1)

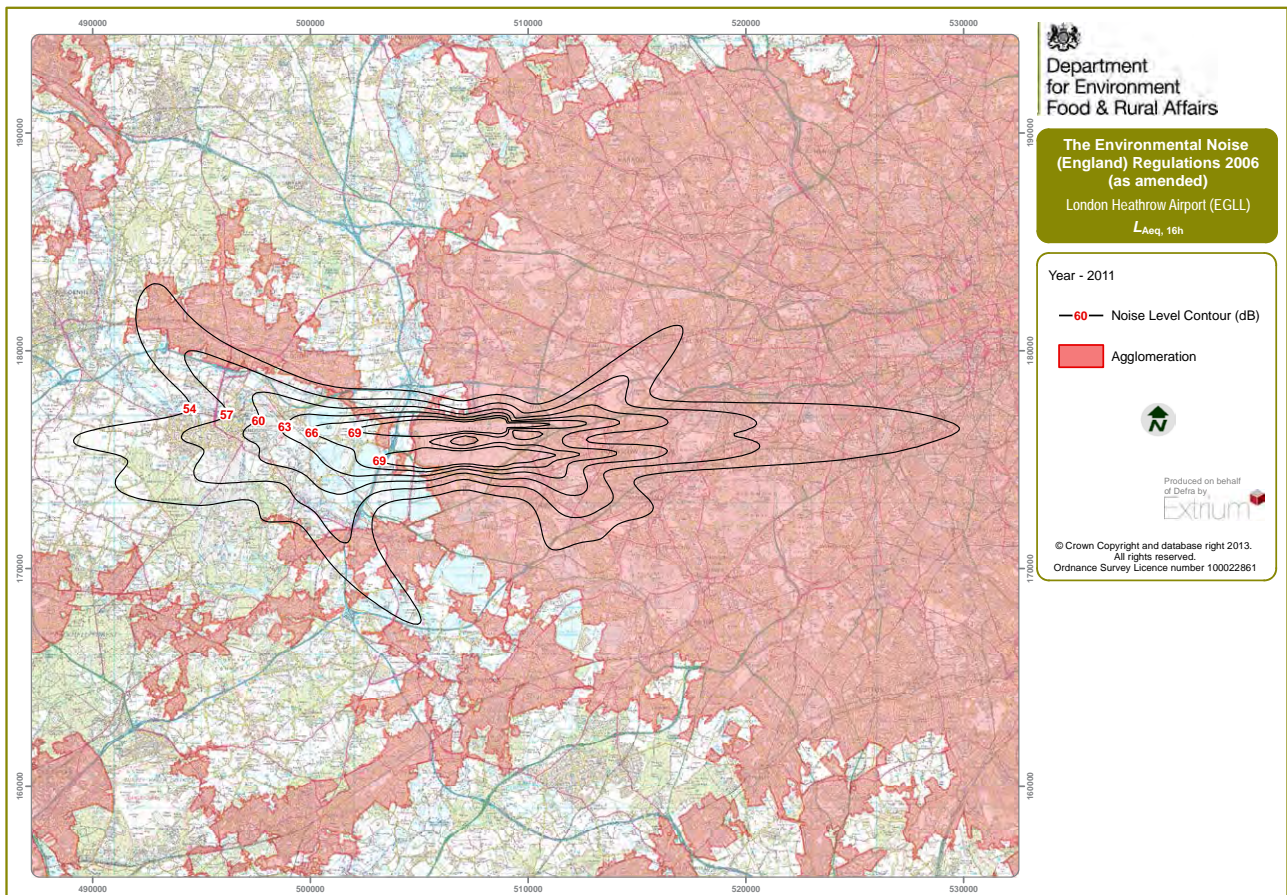
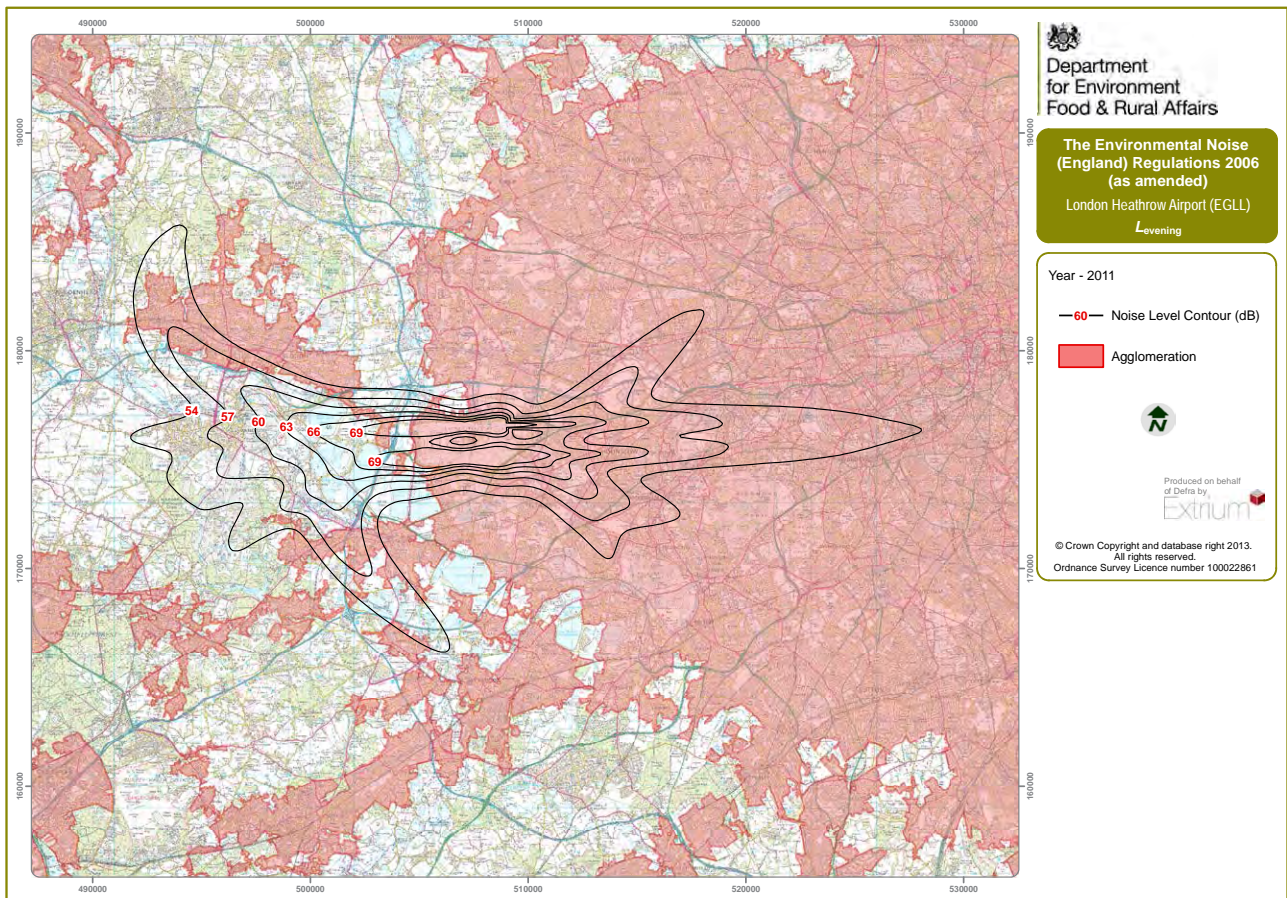
³⁷ Regulation 26 (4)

3. Strategic noise maps for Heathrow Airport

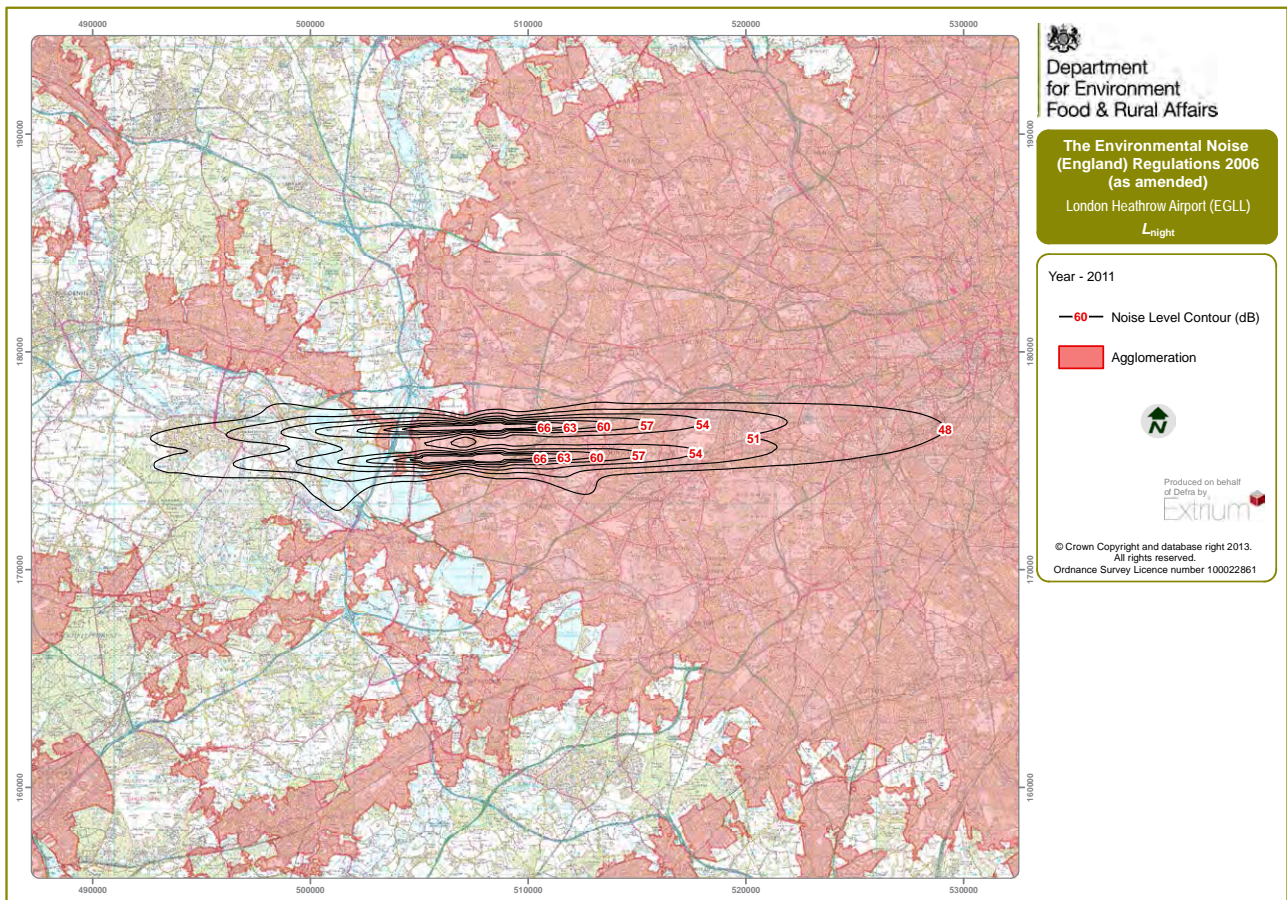
The following maps have been supplied by DEFRA in the Airport Datapack 2013 Heathrow Airport EGLL.



3. Strategic noise maps for Heathrow Airport



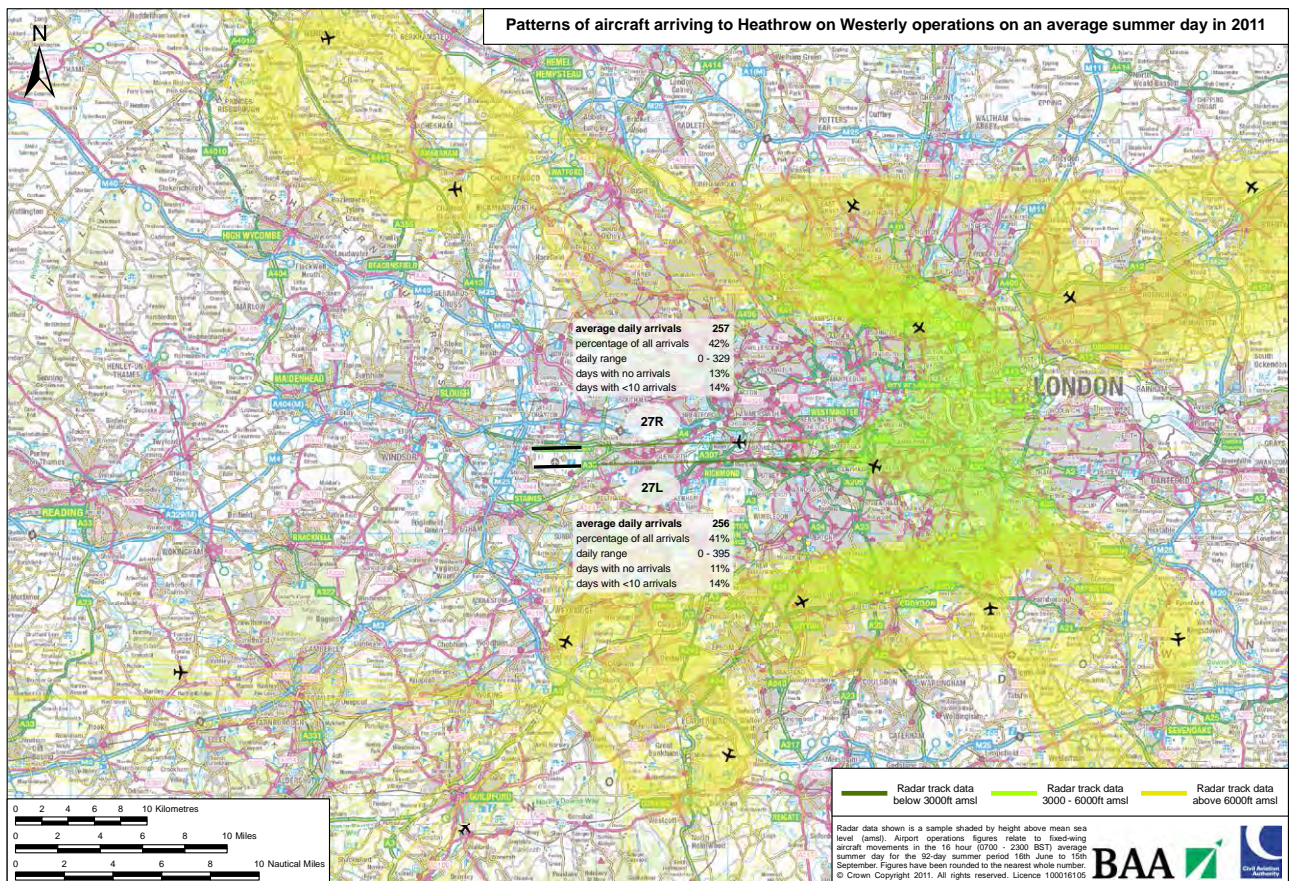
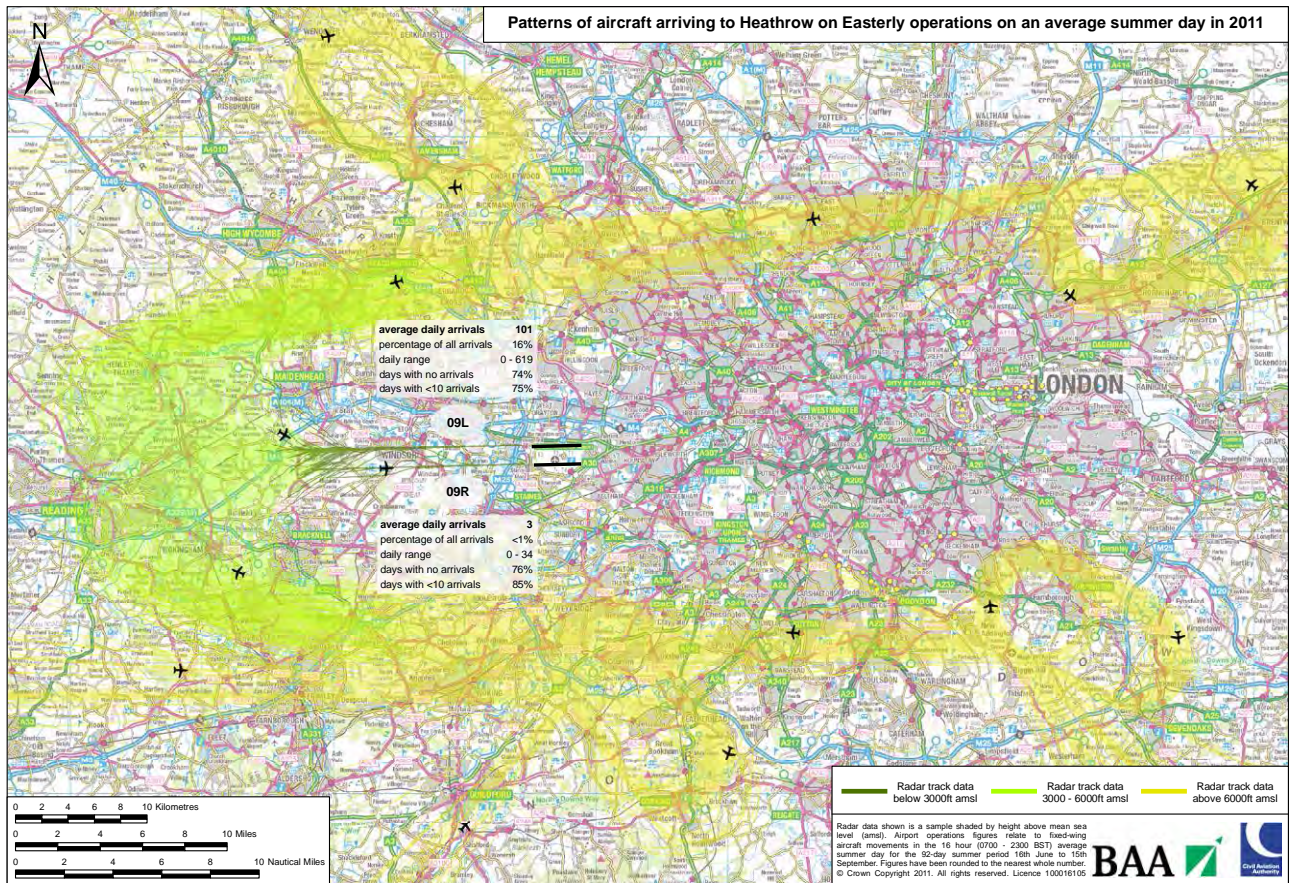
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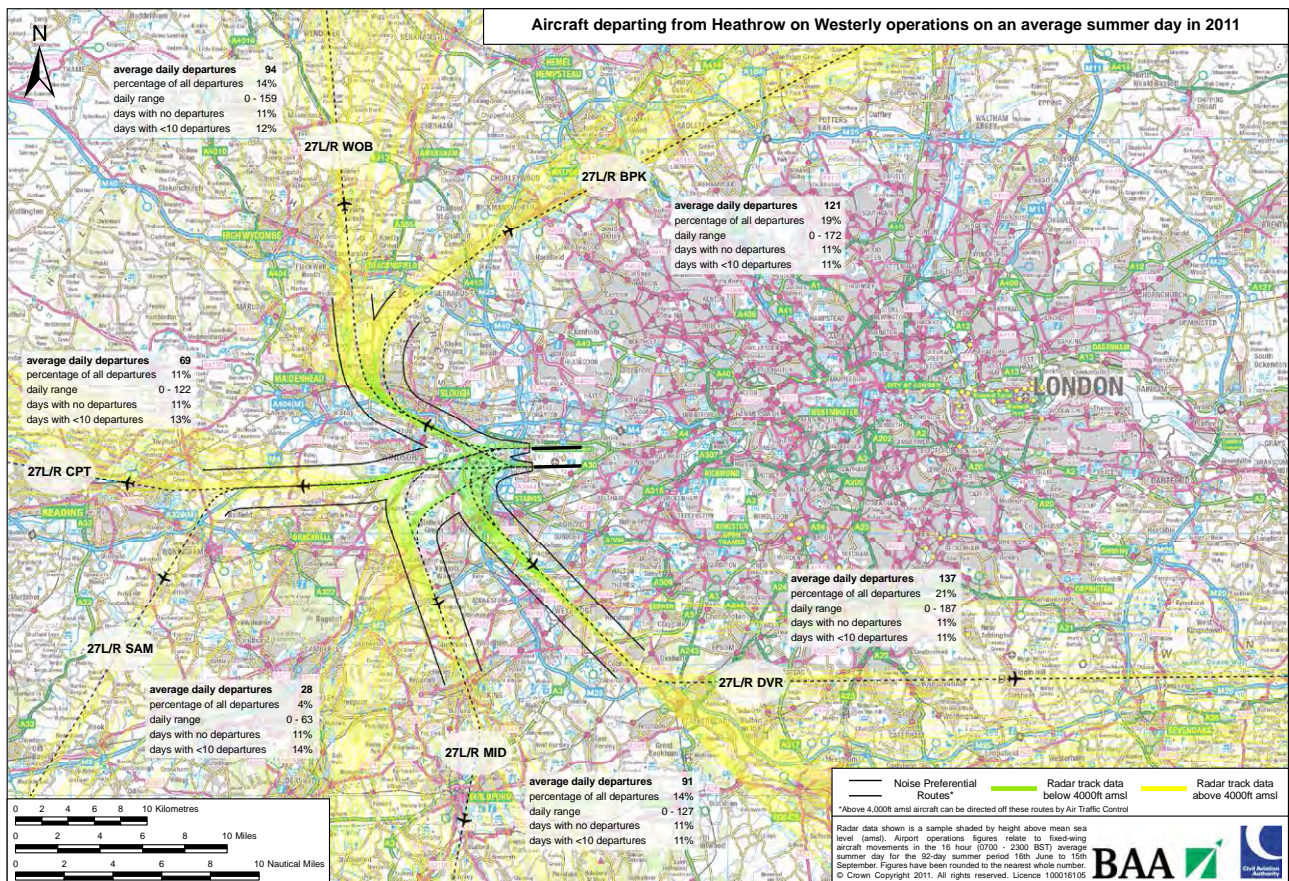
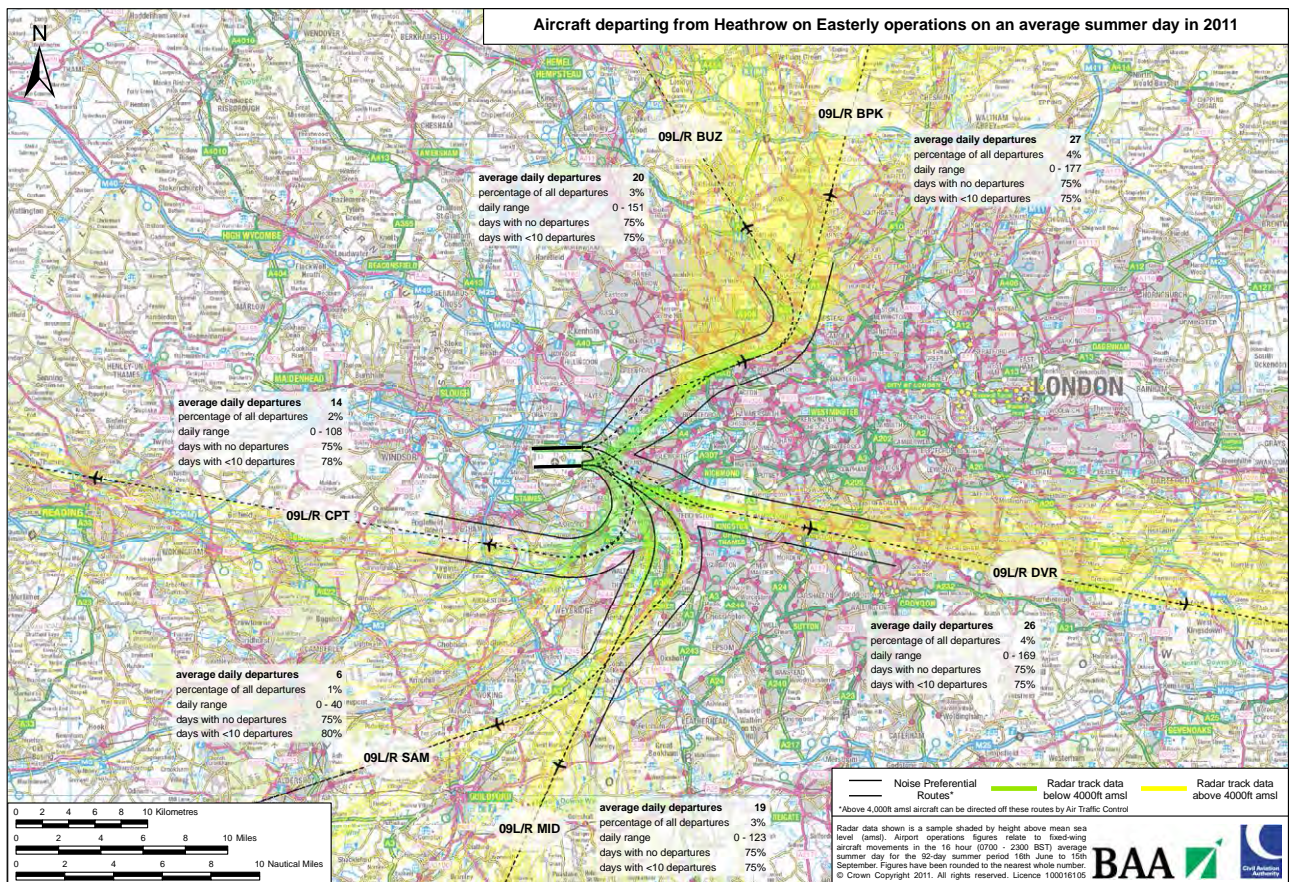
4. Limit values in place at Heathrow

No.	Limit value																																																
	a. Under Terminal 5 Planning Condition A4, the number of air transport movements at Heathrow Airport shall be limited to 480,000 each year.																																																
	b. With effect from the 1 January 2016, the area enclosed by the 57dBAL _{eq16hr} (07:00-23:00) contour, when calculated and measured by the CAA's Aircraft Noise Contour Model, or any system that succeeds it, shall not exceed 145km ² .																																																
	c. Limit the 6.5 hour, 48dBAL _{eq} night quota period contour (for the winter and summer seasons combined) to 55km ² by 2011 – 2012.																																																
	d. Night Movement and Quota Count Restrictions between 2330 and 0600 local.																																																
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	e. The Noise Abatement Procedures contained within the UK AIP.																																																
	f. Daytime (0700-2300) departure noise limit of 94dBAL _{max} at 6.5km from start of roll.																																																
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	i. The Ground running restrictions are set out in T5 planning conditions (see Annex 8).																																																

5. Typical daily flight paths for arriving and departing aircraft



5. Typical daily flight paths for arriving and departing aircraft



6. AIP Noise Abatement Procedures Heathrow (as of 17 October 2013)

EGLL AD 2.21 NOISE ABATEMENT PROCEDURES

Notice under Section 78(1) of the Civil Aviation Act 1982

Whereas:

(1) By virtue of the Civil Aviation (Designation of Aerodromes) Order 1981 (a) Heathrow Airport – London is a designated aerodrome for the purpose of Section 78 of the Civil Aviation Act 1982 (b);

(2) the requirements specified in this notice appear to the Secretary of State to be appropriate for the purpose of limiting, or of mitigating the effect of, noise and vibration connected with the taking off or, as the case may be, landing of aircraft at Heathrow Airport – London;

Now, therefore, the Secretary of State, in exercise of the powers conferred on him by Section 78 (1) and (12) of the Civil Aviation Act 1982, by this notice published in the manner prescribed by the Civil Aviation (Notices) Regulations 1978 (c), hereby provides as follows:

1 This notice may be cited as the Heathrow Airport – London (Noise Abatement Requirements) Notice 2010 and shall come into operation on 1 July 2010.

2. The Heathrow Airport – London (Noise Abatement Requirements) Notice 2004 (d) is hereby revoked.

3 It shall be the duty of every person who is the operator of any aircraft which is to take off or land at Heathrow Airport – London to secure that, after the aircraft takes off or, as the case may be, before it lands at the aerodrome the following requirements are complied with:

1. After take-off the aircraft shall be operated in such a way that it is at a height of not less than 1000 ft aal at 6.5 km from start of roll as measured along the departure track of that aircraft.

2. The sites of the noise monitoring terminals relating to Heathrow Airport – London are:

Description	OS Co-ordinates	Elevation above aerodrome	Latitude	Longitude
Site 6: Thames Water, Wraysbury	TQ 0204 7510	-6 m	*512756N	0003157W
Site 19 (A): Colnbrook	TQ 0263 7700	-4 m	*512857N	0003124W
Site 18 (B): Poyle	TQ 0278 7647	-4 m	*512840N	0003117W
Site 17 (C): Horton	TQ 0219 7566	-6 m	*512814N	0003148W
Site 15 (D): Coppermill	TQ 0197 7477	-7 m	*512745N	0003201W
Site 14 (E): Wraysbury Reservoir (South)	TQ 0169 7409	-7 m	*512724N	0003216W
Site 11 (F): Hounslow West	TQ 1151 7606	-3 m	*512821N	0002345W
Site 12 (G): Hounslow Cavalry Barracks	TQ 1166 7560	-3 m	*512806N	0002338W
Site 10 (H): Hounslow Heath	TQ 1163 7495	-3 m	*512745N	0002340W
Site 13 (I): East Feltham	TQ 1164 7398	-4 m	*512714N	0002341W
Site 20 (J): Hounslow Cavalry Barracks North	TQ 1172 7577	-3m	*512812N	0002334W
Site 21 (K): Hounslow Heath Golf Course	TQ 1148 7462	-4 m	512735N	0002348W

3. Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 94 dBA L_{max} by day (from 0700 hours to 2300 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2) above.

4. Subject to sub-paragraphs (5) and (6) below, any aircraft shall, after take-off, be operated in such a way that it will not cause more than 89 dBA L_{max} by night (from 2300 to 0700 hours local time) and that it will not cause more than 87 dBA L_{max} during the night quota period (from 2330 to 0600 hours local time) as measured at any noise monitoring terminal at any of the sites referred to in sub-paragraph (2) above.

5. The limits specified in sub-paragraphs (3) and (4) above shall be adjusted in accordance with the following table in respect of any noise monitoring terminal at any of the sites referred to in the table in sub-paragraph (2) above to take account of the location of that terminal and its ground elevation relative to the aerodrome elevation .

6. AIP Noise Abatement Procedures Heathrow (as of 17 October 2013)

EGLL AD 2.21 NOISE ABATEMENT PROCEDURES (continued)

Description	Adjustment dBA
Site 6	minus 0.3
Site 19 (A)	plus 2.3
Site 18 (B)	plus 4.8
Site 17 (C)	minus 0.3
Site 15 (D)	minus 0.6
Site 14 (E)	minus 1.0
Site 11 (F)	plus 0.9
Site 12 (G)	minus 0.1
Site 10 (H)	plus 1.2
Site 13 (I)	minus 0.3
Site 20 (J)	minus 0.2
Site 21 (K)	plus 1.7

6. For the purpose of determining an infringement of the limits specified in sub-paragraphs (3) and (4) above, if the aircraft was required to take-off with a tailwind, an amount of up to 2dB of the noise recorded at the noise monitor should be disregarded. The amount to be disregarded shall be:

- 0.4 dB for a tailwind of up to 1 knot
- 0.8 dB for a tailwind exceeding 1 knot but not exceeding 2 knots
- 1.2 dB for a tailwind exceeding 2 knots but not exceeding 3 knots
- 1.6 dB for a tailwind exceeding 3 knots but not exceeding 4 knots
- 2.0 dB for a tailwind exceeding 4 knots.

For this purpose, tailwind is to be calculated from the wind data measured in the on-airfield anemometers and wind vanes according to the formula:

$$(\text{windspeed} \times \cosine(\text{runway heading minus wind direction})) \times -1.$$

7. Where the aircraft is a jet aircraft, after passing the point referred to in sub-paragraph (1) above, it shall maintain a gradient of climb of not less than 4% to an altitude of not less than 4000 ft. The aircraft shall be operated in such a way that progressively reducing noise levels at points on the ground under the flight path beyond that point are achieved.

8. After the aircraft takes off from any runway specified in the first column of the following table, the aircraft shall follow the Noise Preferential Routing Procedure specified in the third column of the table which relates to the ATC clearance previously given to the aircraft and specified in the second column of the table, whether flying in IMC or VMC:

(a) Provided that nothing in this sub-paragraph (8) shall apply:

- (i) to any propeller driven aircraft whose MTWA does not exceed 5700 kg; or
- (ii) during the period between 0600 hours and 2330 hours (local time), any propeller driven aircraft whose MTWA does not exceed 17000 kg or any Dash 7 aircraft.

Take-off Runway	ATC Clearance	Procedure	Take-off Runway	ATC Clearance	Procedure
27R	Via Woodley	Straight ahead to intercept LON VOR RDL 258 until LON DME 7 then turn right onto QDM 271 to WOD NDB (LON DME 16).	27L	Via Woodley	Straight ahead to intercept LON VOR RDL 258 until LON DME 7 then turn right onto QDM 271 to WOD NDB (LON DME 16).
	Via Chiltern	Straight ahead to be established on BUR NDB QDM 300 by LON DME 4. At LON DME 6 turn right onto QDM 056 to CHT NDB.		Via Chiltern	Straight ahead to be established on BUR NDB QDM 300 by LON DME 3. At LON DME 6 turn right onto QDM 056 to CHT NDB.
	Via Burnham/WOBUN	Straight ahead to be established on BUR NDB QDM 300 by LON DME 4. At LON DME 7 turn right to follow BUR NDB QDR 358 to abeam BNN VOR (LON DME 16).		Via Burnham/WOBUN	Straight ahead to be established on BUR NDB QDM 300 by LON DME 3. At LON DME 7 turn right to follow BUR NDB QDR 358 to abeam BNN VOR (LON DME 16).
	Via Midhurst	Straight ahead to intercept LON VOR RDL 258 until LON DME 5 then turn left onto BUR NDB QDR 163. At LON DME 12 turn right onto MID VOR RDL 013 to MID VOR.		Via Midhurst	Straight ahead to intercept LON VOR RDL 242 until LON DME 5.5 then turn left onto BUR NDB QDR 163. At LON DME 12 turn right onto MID VOR RDL 013 to MID VOR.
	Via Epsom/ Detling	Straight ahead until LON DME 2 then turn left onto QDM 139		Via Epsom/ Detling	Straight ahead until I-LL DME 1.0 (LON DME 2) then turn left

6. AIP Noise Abatement Procedures Heathrow (as of 17 October 2013)

EGLL AD 2.21 NOISE ABATEMENT PROCEDURES (continued)

Take-off Runway	ATC Clearance	Procedure	Take-off Runway	ATC Clearance	Procedure
		to EPM NDB then left onto DET VOR RDL 273 to abeam Biggin (DET DME 21).			onto QDM 139 to EPM NDB then left onto DET VOR RDL 273 to abeam Biggin (DET DME 21).
09L	Via Woodley	Straight ahead until LON DME 1.5 then turn right onto QDM 283 to WOD NDB (LON DME 16)	09R	Via Woodley	Straight ahead until LON DME 2 then turn right onto QDM 283 to WOD NDB (LON DME 16).
	Via Ockham/Southampton	Straight ahead until LON DME 1.5 then turn right onto LON VOR RDL 127 until LON DME 5 then right onto OCK VOR RDL 044. At OCK DME 2 turn right onto OCK VOR RDL 255 by OCK DME 3.		Via Ockham/Southampton	Straight ahead until LON DME 2 then turn right onto LON VOR RDL 127 until LON DME 5 then right onto OCK VOR RDL 044. At OCK DME 2 turn right onto OCK VOR RDL 255 by OCK DME 3
	Via Midhurst	Straight ahead until LON DME 1.5 then turn right onto LON VOR RDL 127 until LON DME 3.5 then turn right onto MID VOR RDL 027 to MID VOR.		Via Midhurst	Straight ahead until LON DME 2 then turn right onto LON VOR RDL 127 until LON DME 3.5 then turn right onto MID VOR RDL 027 to MID VOR.
	Via Detling	Straight ahead until LON DME 1.5 then turn right onto track 123° MAG. At LON DME 4 turn left to establish on DET VOR RDL 285 by DET DME 34 to DET DME 20.		Via Detling	Straight ahead until LON DME 2 then turn right onto track 123° MAG. At LON DME 4 turn left to establish on DET VOR RDL 285 by DET DME 34 to DET DME 20.
	Via BUZAD	Straight ahead until LON DME 1.5 then turn left onto track 052°MAG to intercept LON VOR RDL 073. At LON DME 10 turn left onto BIG VOR RDL 331 to BUZAD		Via BUZAD	Straight ahead until LON DME 2 then turn left onto track 052°MAG to intercept LON VOR RDL 073. At LON DME 10 turn left onto BIG VOR RDL 331 to BUZAD.
	Via Brookmans Park	Straight ahead until LON DME 1.5 then turn left onto track 052°MAG to intercept LON VOR RDL 073. At LON DME 10 turn left onto BPK VOR RDL 198 to BPK VOR.		Via Brookmans Park	Straight ahead until LON DME 2 then turn left onto track 052°MAG to intercept LON VOR RDL 073. At LON DME 10 turn left onto BPK VOR RDL 198 to BPK VOR.

9. Where the aircraft is approaching the aerodrome to land it shall commensurate with its ATC clearance minimise noise disturbance by the use of continuous descent and low power, low drag operating procedures (referred to in Detailed Procedures for descent clearance in AD 2 paragraphs 3 and 4). Where the use of these procedures is not practicable, the aircraft shall maintain as high an altitude as possible. In addition, when descending on initial approach, including the closing heading, and on intermediate and final approach, thrust reductions should be achieved where possible by maintaining a 'clean' aircraft configuration and by landing with reduced flap, provided that in all the circumstances of the flight this is consistent with safe operation of the aircraft.

10. Subject to sub-paragraph (11) below:

- Between 0600 and 2330 hours (local time) where the aircraft is approaching Runway 27 (L or R) and is using the ILS in IMC or VMC it shall not descend on the glidepath below an altitude of 2500 ft (Heathrow QNH) before being established on the localizer, nor thereafter fly below the glidepath. An aircraft approaching without assistance from the ILS shall follow a descent path which will not result in its being at any time lower than the approach path that would be followed by an aircraft using the ILS glidepath, and shall follow a track to intercept the extended runway centre-line at or above 2500 ft.
- Between 2330 and 0600 hours (local time) where the aircraft is approaching runway 27 (L or R) and is using the ILS in IMC or VMC it shall not descend on the glidepath below an altitude of 3000 ft (Heathrow QNH) before being established on the localizer at not less than 10nm from touchdown, nor thereafter fly below the glidepath. An aircraft approaching without assistance from the ILS shall follow a descent path which will not result in its being at any time lower than the approach path that would be followed by an aircraft using the ILS glidepath, and shall follow a track to intercept the extended runway centre-line at or above 3000 ft.
- Between 0700 and 2300 hours (local time) where the aircraft is approaching Runway 09 (L or R) and is using the ILS in IMC or VMC it shall not descend on the glidepath below an altitude of 2500 ft (Heathrow QNH) before being established on the localizer, nor thereafter fly below the glidepath. An aircraft approaching without assistance from the ILS shall follow a descent path which will not result in its being at any time lower than the approach path that would be followed by an aircraft using the ILS glidepath, and shall follow a track to intercept the extended runway centre-line at or above 2500 ft.
- Between 2300 and 0700 hours (local time) where the aircraft is approaching Runway 09 (L or R) and is using the ILS in IMC or VMC it shall not descend on the glidepath below an altitude of 3000 ft (Heathrow QNH) before being established on the localizer at not less than 10 nm from touchdown, nor thereafter fly below the glidepath. An aircraft approaching without assistance from the ILS shall follow a descent path which will not result in its being at any time lower than the approach path that would be followed by an aircraft using the ILS glidepath, and shall follow a track to intercept the extended runway centre-line at or above 3000 ft.

6. AIP Noise Abatement Procedures Heathrow (as of 17 October 2013)

EGLL AD 2.21 NOISE ABATEMENT PROCEDURES (continued)

11. Nothing in sub-paragraph (10) above shall apply to any propeller driven aircraft whose MTWA does not exceed 5,700 kg.

12. Without prejudice to the provisions of sub-paragraphs (1) - (11) above, the aircraft shall at all times be operated in a manner which is calculated to cause the least disturbance practicable in areas surrounding the aerodrome.

13. The requirements set out in sub-paragraphs (1) - (12) above may at any time be departed from to the extent necessary for avoiding immediate danger or for complying with the instructions of an Air Traffic Control Unit.

4 In this notice, except where the context otherwise requires:

'local time' means, during any period of summer time, the time fixed by or under the Summer Time Act 1972 (e), and outside that period, Universal Co-ordinated Time;

'dBA' means a decibel unit of sound level measured on the A-weighted scale, which incorporates a frequency dependent weighting approximating the characteristics of human hearing;

Lmax' means the highest instantaneous sound level recorded (with the noise monitoring terminal set at the slow meter setting);

other abbreviations used are defined in GEN 2-2 of the United Kingdom Aeronautical Information Publication (Air Pilot).

J Hotchkiss
Divisional Manager
Aviation Environmental Division
Department for Transport

7 April 2010

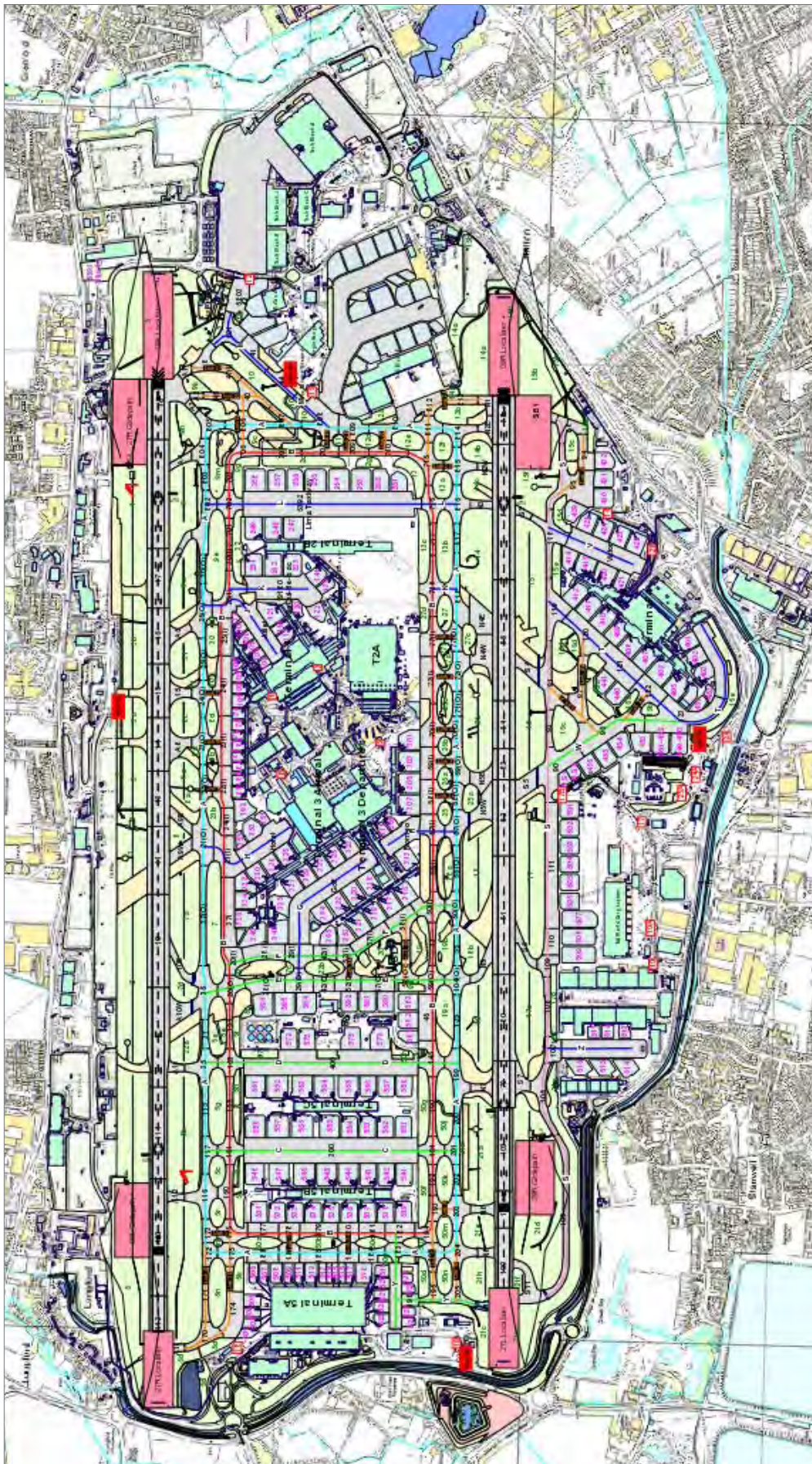
- (a) S.I. 1981/651.
- (b) 1982 c.16.
- (c) S.I. 1978/1303.
- (d) The Heathrow Airport – London (Noise Abatement Requirements) Notice 2004 signed by G Pendlebury on 24 March 2004.
- (e) 1972 c.6.

Notes

(These notes are not part of the notice)

1. The Noise Preferential Routeing Procedures specified in the above notice are compatible with normal ATC requirements. The use of the routeings specified above is supplementary to noise abatement take-off techniques as used by piston-engined, turbo-prop, turbo-jet and turbofan aircraft.
2. The attention of operators is drawn to the provisions of Section 78 (2) of the Civil Aviation Act 1982, under which if it appears to the Secretary of State that any of the requirements in this notice have not been complied with as respects any aircraft, he may direct the manager of the aerodrome to withhold facilities for using the aerodrome from the operator of the aircraft. However, the Secretary of State accepts that occasional and exceptional breaches of the noise limits, or of the height requirement, would not be expected to lead to sanctions under Section 78 (2). Such breaches would, however, run the risk of financial penalties.
3. Noise from ground running of aircraft engines is controlled in accordance with instructions issued by Heathrow Airport Limited.
4. In the interests of noise abatement, certain restrictions are imposed on the operation of training flights at this aerodrome. Operators concerned are advised to obtain details from Heathrow Airport Limited.
5. To minimise disturbance in areas adjacent to the aerodrome, commanders of aircraft are requested to avoid the use of reverse thrust after landing, consistent with the safe operation of the aircraft, between 2330 hours and 0600 hours (local time).
6. Full details concerning the maximum number of occasions and the types of aircraft which are permitted to take off or land at night during specified periods at this aerodrome are promulgated by Supplement.
7. For monitoring purposes, a descent will be deemed to have been continuous provided that no segment of level flight longer than 2.5 nautical miles (nm) occurs below 6000 ft QNH and 'level flight' is interpreted as any segment of flight having a height change of not more than 50 ft over a track distance of 2 nm or more, as recorded in the airport Noise and track-keeping system.
8. For monitoring purposes, a departure will be deemed to have complied with the Noise Preferential Routeing (NPR) if, in the portion of flight below the appropriate vectoring altitude (see note 9 below), it is properly recorded by the airport's noise and track-keeping (NTK) system as having flown wholly within the Lateral Swathe (LS). The LS is defined from the centre-line of the relevant route coded in the NTK system, based upon a map accredited for this purpose by the Department for Transport, by the closer to the route centre-line depicted on the map of (a) a pair of lines either side, each diverging at an angle of 10° from a point on the runway centre-line 2000 m from start-of-roll; and (b) a pair of parallel lines representing a distance of 1.5 km either side of the route centre-line. For avoidance of doubt, the depicted route and LS may include curved sections representing turns.
9. Aircraft which have attained an altitude of 4000 ft (Heathrow QNH) may be directed by air traffic controllers onto a different heading and commanders complying with any such direction will not by reason of so complying be deemed to have departed from the Noise Preferential Routeing.

7. Airfield map



8. Conditions for Terminal 4 and Terminal 5

As part of the planning process for Terminal 4 and Terminal 5 a number of special conditions were attached to the planning permission which relate to airport noise management. These include:

Terminal 4

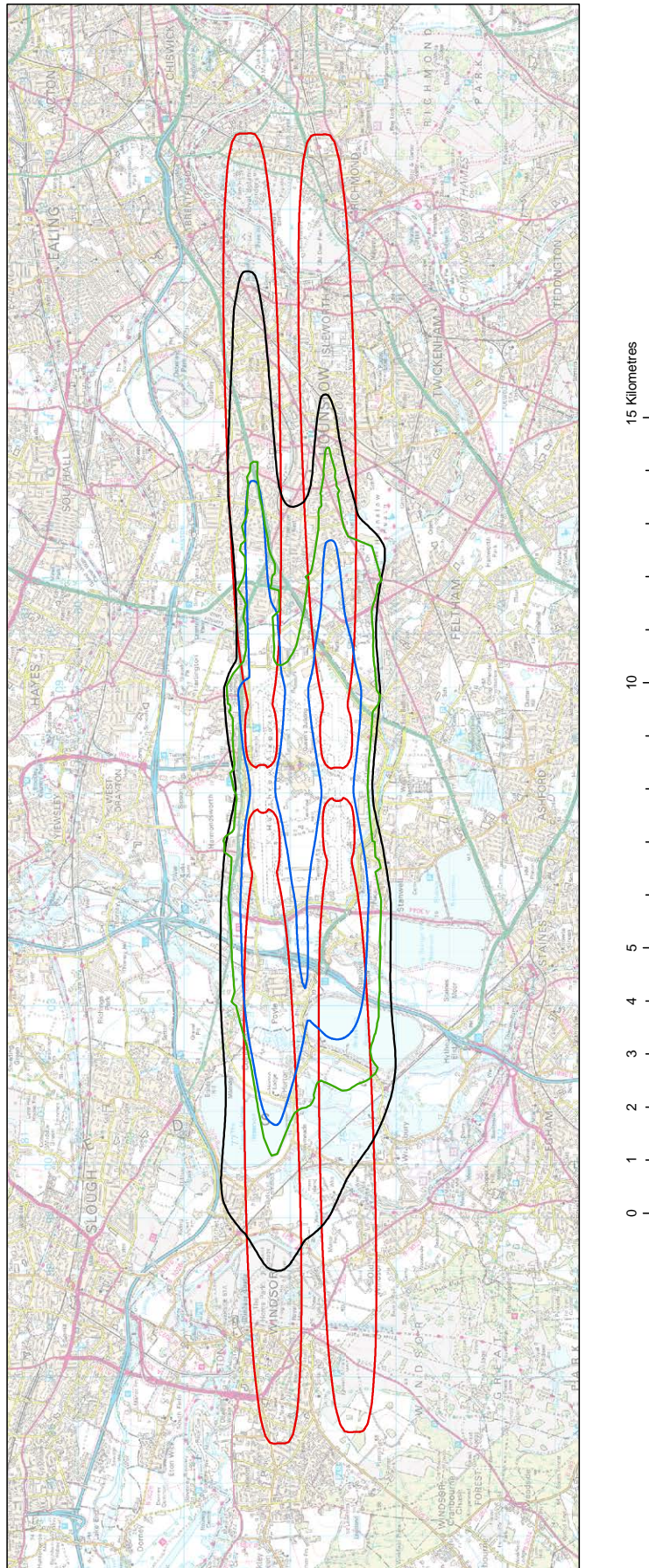
- Except in an emergency, no live aircraft movements or activities involving the running of aircraft engines to be permitted to, from or onto stands 401- 403, 429- 432 and 463, between the hours of 23:30hrs and 06:00hrs local.
- Access to or egress from the Terminal site by taxiing aircraft between 23:30hrs and 06:00hrs is prohibited on the taxiway route "S" west of "V" apron or through "Link 41" to SB1 and reverse, except in an emergency or as a consequence of essential maintenance work on the alternative access routes. This restriction does not apply to aircraft taxiing to or from Terminal 4.
- Except in an emergency, no Auxiliary Power Units (APUs) may be operated on stands 401- 403, 429 - 432 and 463 between the hours of 23:30hrs and 06:00hrs local.
- Other than the routine servicing of aircraft on turnaround, no aircraft maintenance work which involves the running of aircraft engines is permitted on the Terminal 4 site at anytime.

Terminal 5

- Under Terminal 5 Planning Condition A4, the number of air transport movements at Heathrow airport shall be limited to 480,000 each year.
- With effect from the 1 January 2016, the area enclosed by the 57dB(A) Leq16hr (07:00-23:00) contour, when calculated and measured by the CAA's Aircraft Noise Contour Model, or any system that succeeds it, shall not exceed 145 square kilometres.
- The recording and management criteria for engine testing will be extended to cover the Terminal 5 application site without any increase in the current maximum and average period of testing permitted for Heathrow with four terminals:
 - the total ground running time in any one night period shall not exceed 150 minutes
 - the total ground running time at high power in any one night period shall not exceed 60 minutes
 - the ground running time at high power in the night period shall not exceed a rolling 30 day average of 20 minutes.
- In addition to the overall airport constraint on permitted periods for engine ground running, any run on any stand on the Terminal 5 application site at idle power will not exceed 10 minutes for any single engine.
- Between 23:00hrs and 07:00hrs (local) only, check starts (maximum five minute duration) will be permitted on any stand on the Terminal 5 application site.
- During the night quota period (23:30-06:00hrs local), aircraft arriving at the Terminal 5 application site, and aircraft scheduled to depart from it in that period, will use the stands closest to the centre of the site, i.e furthest away from Longford and Stanwell, in preference to the outer stands. This would apply to both the core building and the satellites.
- During the night quota period (23:30-06:00hrs local), and except in an emergency or for maintenance of the runway and taxiway system, taxiing operation to the north and south of the Terminal 5 application site will be restricted to inner taxiways only. These operational constraints will be applied through Heathrow ATC in the same way as the current taxiing constraints on Terminal 4 are implemented to ensure compliance.
- No pier served stand within the Terminal 5 application site shall be used for live aircraft movements until there is available to that stand a supply of PCA.
- Aircraft arriving at the Terminal 5 application site under engine power, and aircraft scheduled to leave the application site under engine power, during the night quota period shall be allocated a centre stand in preference to any other stand; provided that if all centre stands are so allocated or unavailable for use for any reason, such aircraft may be allocated to another stand.

9. Noise mitigation scheme boundary map

Comparison of 1994 Day Insulation scheme (18hr Leq), 2002 ATWP schemes (63 and 69dBA Leq) and 2004/5 Night Restrictions 90dBA SEL footprint scheme



- Legend**
- LHR 1994 18hr Day Insulation Scheme Boundary
 - 69dBA 18hr Leq
 - LHR 2002 63dBA Leq (standard modal split)
 - 63dBA 16hr Leq
 - LHR 2002 69dBA Leq (standard modal split)
 - 69dBA 16hr Leq
 - LHR 2004/5 Night Restrictions
 - B744RR 95th percentile 90dBA SEL footprint

10. Night restrictions

The following summarises the information that Heathrow provides on its night restrictions – taken from Heathrow's night noise fact sheet, downloadable from our website. UK's night flying restrictions are currently under review by the government.

What is the issue?

Noise created by aircraft at night may cause more disturbance to some people because there is less background noise from other sources and the majority of people will be trying to sleep. Similarly, night noise may appear worse in the summer because people tend to sleep with windows open more frequently.

Is there a ban on night flights?

Heathrow has always been a 24 hour operation airport. There is not, and never has been, a night ban. However, for the reasons above and in order to try to balance the interests of the local communities and those of the airports users, there are restrictions and rules regarding night flights.

Who makes the restrictions?

The Department for Transport (DfT) is responsible for making the restrictions on the types of aircraft that can be scheduled to fly at night. In setting the restrictions the aim has been to maintain a balance between the need to protect local communities from too much aircraft noise at night and the operation of services where they provide economic benefits.

BAA does not set the rules but strictly monitors compliance with all Government restrictions in force. We report regularly to the DfT and the Heathrow Airport Consultative Committee (HACC). This is an independent consultative forum made up of representatives of local authorities, councillors, business and airlines and the DfT.

What are the restrictions?

Aeroplanes are certified by the International Civil Aviation Organisation (ICAO) according to the noise they produce. They are classified separately for both take off and landing.

The night flying restrictions are divided into summer and winter seasons. They consist of a movements limit and a quota count system. This means that points are allocated to different aircraft types according to how noisy they are. The noisier the aircraft type, the higher the points allocated. This provides an incentive for airlines to use quieter aircraft types.

Night Period and Night Quota Period

The 'Night Period' is 23:00 to 07:00 hours local during which period the noisiest types of aircraft (classified QC/8 and QC/16) may not be scheduled to land or take-off.

The 'Night Quota Period' is from 23.30 to 06.00 hours local, during which period aircraft movements are restricted by a limit on the number of movements with noise quotas as an additional measure. These number of movements and quota counts allowed are set for each season as opposed to each night.

The Quota count system

Aircraft are given quota count (QC) classifications as follows:

Certified noise level (EPNdB)	Quota count
More than 101.9	QC / 16
99 – 101.9	QC / 08
96 – 98.9	QC / 04
93 – 95.9	QC / 02
90 – 92.9	QC / 01
87 – 89.9	QC / 0.5
84 – 86.9	QC / 0.25

10. Night restrictions

What about the aircraft quieter than 84 EPNdB?

Aircraft are exempt from the movements limits and noise quotas if their noise certification data are less than 84 EPNdB. That is, the very quietest aircraft are not subject to movement and quota limits.

Movements limits and noise quotas at Heathrow

The movement limits and noise quotas for current and future years / seasons are:

Winter							
	2005 / 06	2006 / 07	2007 / 08	2008 / 09	2009 / 10	2010 / 11	2011 / 12
Movement Limit	2550	2550	2550	2550	2550	2550	2550
Noise Quota	4140	4140	4140	4140	4140	4140	4080

Summer							
	2006	2007	2008	2009	2010	2011	2012
Movement Limit	3250	3250	3250	3250	3250	3250	3250
Noise Quota	5610	5610	5460	5460	5340	5220	5100

The summer season is the period of British Summer Time in any one year. The winter season is the period between the end of British Summer Time in one year and the start of British Summer Time in the next.

End of season flexibility

Left over movements - Up to 10% of the current season's movements limit may be carried over if sufficient amount of the limit has not been used.

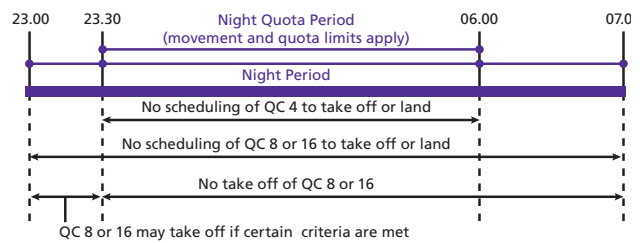
Overrun of movements - Also, up to 10% of the next season's movements limit may be anticipated in the event of an overrun. Any excess overrun is penalised in the following season at double the amount of the excess.

The same arrangements apply to the noise quotas.

What is not allowed?

- (1) Any aircraft which has a quota count of four, eight, or 16 may not be scheduled to take off or land between 23:30 and 06:00 hours local
- (2) Any aircraft which has a quota count of eight or 16 (i.e. the noisiest) may not be scheduled to take off or land between 23:00 and 07:00 hours local
- (3) Any aircraft which has a quota count of eight or 16 may not take off between 23:00 and 07:00 hours local. However, between 23:00 and 23:30 hours local, it may take off if:
 - (a) It was scheduled to take off before 23:00 hours local
 - (b) The take-off was delayed for reasons beyond the control of the aircraft operator; and
 - (c) The airport authority has not given notice to the aircraft operator precluding take-off.

These restrictions are summarised below:



Dispensations

The Secretary of State has the power to state circumstances in which movements may be disregarded from the night restrictions. This is in exceptional circumstances only.

How is compliance to the restrictions monitored?

Night flights are closely monitored by BAA on a daily basis. We provide the HACC and the DfT, with regular reports on the use of the movements limits and the noise quotas, details of any dispensations or exemptions granted and any movements by QC/8 and QC/16 aircraft during the night period.

All dispensations granted by the airport have to be reported to the DfT in writing within a maximum of one week from when the flight took place.

Future review

The night flights regime is reviewed by the DfT every five years. The current regime runs until the end of October 2012. We are expecting the DfT to publicly consult on the new regime before that date.

11. 2006 mapping data

Table 1

Estimated total number of people and dwellings above various noise levels (L_{den}) for Heathrow Air Noise, the London Agglomeration Roads and the London Agglomeration Railways.

Noise level (L_{den}) (dB)	Heathrow			Road		Rail	
	Area (km ²)	Number of Dwellings	Population	Number of Dwellings	Population	Number of Dwellings	Population
≥ 55	244.7	314,350	725,500	1,417,000	3,246,000	200,000	453,000
≥ 60	92.7	81,000	191,400	965,000	2,182,000	119,000	269,000
≥ 65	37.1	22,000	56,400	582,000	1,296,000	54,000	120,000
≥ 70	13.7	3,500	9,700	191,000	413,000	14,000	29,000
≥ 75	5.0	250	600	14,000	29,000	1,000	2,000

Table 2

Estimated total number of people and dwellings above various noise levels (L_{night}) for Heathrow Air Noise, the London Agglomeration Roads and the London Agglomeration Railways.

Noise level (L_{night}) (dB)	Heathrow			Road		Rail	
	Area (km ²)	Number of Dwellings	Population	Number of Dwellings	Population	Number of Dwellings	Population
≥ 50	84.4	89,000	207,400	1,092,000	2,480,000	138,000	311,000
≥ 55	34.1	24,200	62,100	681,000	1,525,000	68,000	152,000
≥ 60	11.9	6,100	16,400	248,000	541,000	21,000	46,000
≥ 65	4.5	700	1,800	23,000	50,000	2,000	5,000
≥ 70	1.8	<100	<100	2,000	5,000	<500	<500

Table 3

Estimated total number of people and dwellings above various noise levels, L_{day}

Noise level (dB)	Number of Dwellings	Number of People
≥ 54	262,300	605,700
≥ 57	107,600	253,700
≥ 60	46,300	114,000
≥ 63	21,400	54,100
≥ 66	6,450	17,300
≥ 69	1,800	4,500
≥ 72	400	900
≥ 75	< 50	< 100
≥ 78	0	0

11. 2006 mapping data

Table 4

Estimated total number of people and dwellings above various noise levels, Levening

Noise level (dB)	Number of Dwellings	Number of People
≥ 54	249,650	583,800
≥ 57	105,700	251,000
≥ 60	43,500	108,800
≥ 63	19,200	48,600
≥ 66	5,500	14,400
≥ 69	1,550	3,700
≥ 72	350	800
≥ 75	< 50	< 100
≥ 78	0	0

Table 5

Estimated total number of people and dwellings above various noise levels, LAeq, 16h

Noise level (dB)	Number of Dwellings	Number of People
≥ 54	258,400	597,700
≥ 57	109,700	258,500
≥ 60	45,150	111,800
≥ 63	20,850	52,800
≥ 66	6,200	16,600
≥ 69	1,750	4,300
≥ 72	350	800
≥ 75	< 50	< 100
≥ 78	0	0

12. Extracts from Independent 2012 audit report

2.2 Scope

- 2.2.1 The scope of the work is to conduct an independent verification of progress towards the actions stated in the NAP, specifically through the interrogation of a cross section of actions contained within the Heathrow Airport 2012 Progress Report and the statements therein.
- 2.2.2 The aim of the verification process is to reassure stakeholders that the Progress Report is accurate; to establish whether the actions are on track; to review issues most material to stakeholders; and to promote performance improvement by providing recommendations to update the NAP for implementation.

3 Assessment Approach

3.1 Selection Process

- 3.1.1 Initially fifteen actions were selected for audit. Ten of these were selected by the Noise and Track Keeping Working Group (NTKWG). Of those ten actions, two (1.1.02 and 1.2.02) were actions that had been audited in 2011 and agreed to be "On Track". WSP Acoustics was asked to select a further five actions. These additional actions were selected in order to reflect a cross section of topics covering arrivals, departures, night flights and community trust and awareness.
- 3.1.2 Whilst the audit was in progress HAL made a suggestion that one additional action, 2.13 relating to the review of complaints policy, be included. During 2012 there was a sudden and significant increase in complaints resulting from the Operational Freedoms trial that took place in two phases, the first phase running from 1 November 2011 to 29 February 2012 and the second from 1 July 2012 until 28 February 2013. One consequence of the increase in complaints received was the development of a back-log and extended response times. Given that there was a degree of duplication in actions selected by the NTKWG, WSP Acoustics agreed to include this additional action.

5 Conclusion

5.1 Statement of On-going Progress During 2012

- 5.1.1 This is the second year that WSP Acoustics has been commissioned to undertake this exercise. Sixteen actions have been selected. The majority of the actions verified (92.4%) for the year ended 31 December 2012 have been reported to be on track to be achieved within the timeframes stipulated or completed, and all the statements of progress within the Heathrow Airport Progress Report have been accurate. Based upon the actions included in this audit, our opinion is that HAL has made good progress over 2012 in addressing the requirements of the actions.

13. Community response to noise

Understanding the concerns of local residents is important in forming our approach to managing aircraft noise. The Heathrow Community Relations team manages complaints from local residents about aircraft noise. by analysis of our complaint data and the findings from our polling in the local community.

During 2012 the team received 17,654 complaints from 4,090 callers. This compares to 4,652 complaints from

1,580 callers in 2011, the year from which data was used to produce the strategic noise maps used in this Noise Action Plan. (see Table 1 and Figure 1)

The increase in complaints was largely as a result of the start of the Operational Freedoms trial which ran for different periods throughout the year. A separate reports has been produced about the trial and is available on the Heathrow noise website (www.heathrow.com/noise).

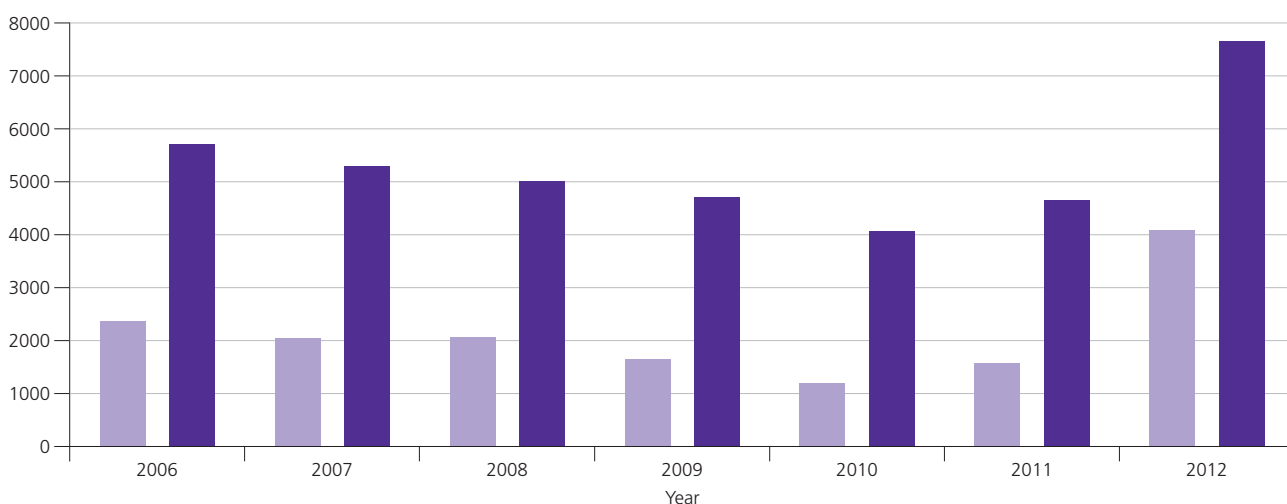


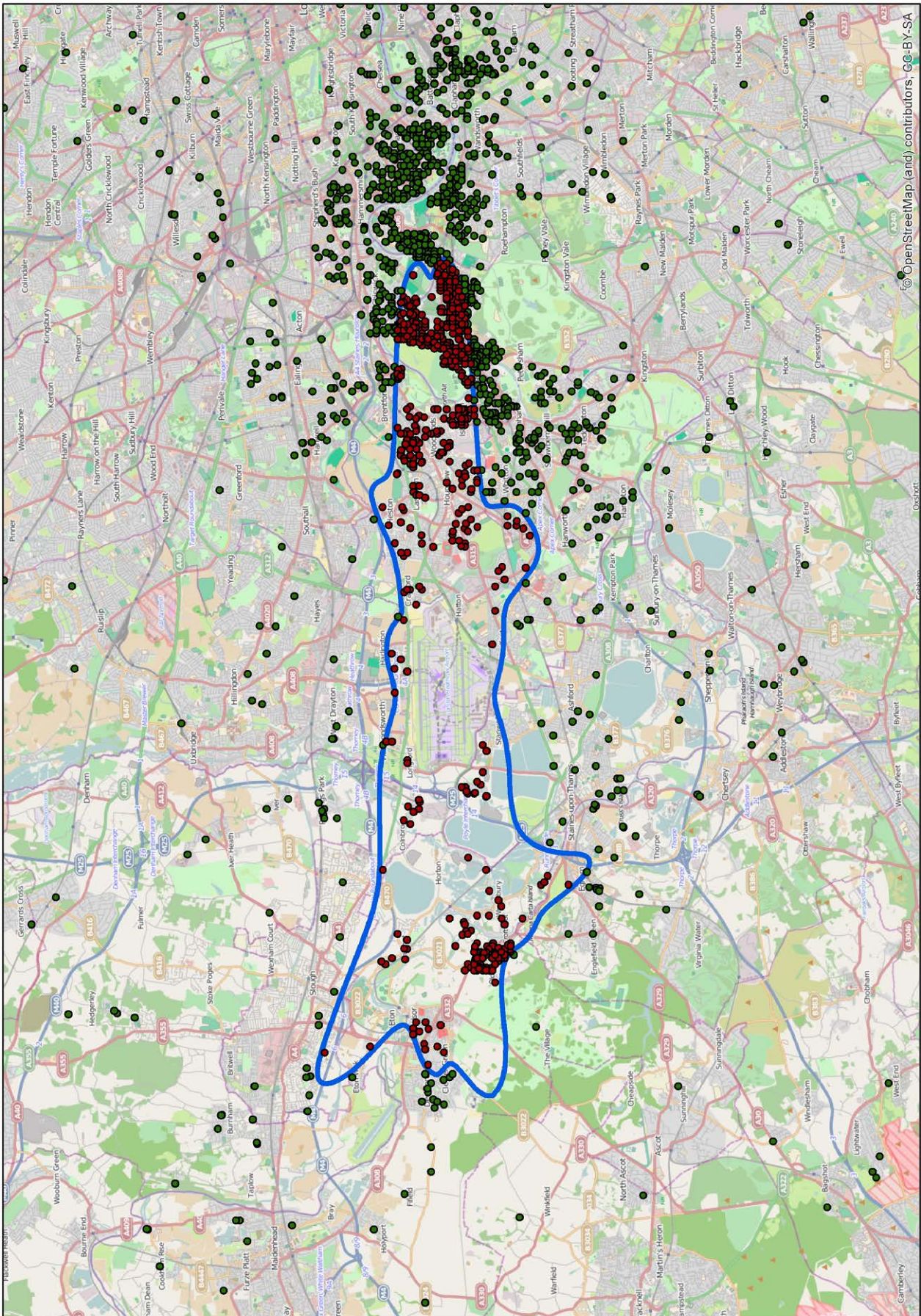
Figure 1: Callers and complaints relating to airport operations

	2006	2007	2008	2009	2010	2011	2012
Callers	2368	2042	2071	1651	1206	1580	7654
Enquiries	5713	5295	5002	4715	4074	4652	4090

Table 1: Callers, contacts and enquiries relating to airport operations

13. Community response to noise

Figure 2: Location of complainants 2012 – (Red inside 57 leq contour, Green outside 57 leq contour)



13. Community response to noise

Resident polling

Between November 2011 and September 2012, Heathrow commissioned market research company Populus to carry out four waves of polling amongst residents living within the 55 Lden noise contour. This was done primarily to gauge opinions about the Operational Freedoms trial and the results of these formed part of the trial reports submitted to the CAA and DfT. As part of the polling we also asked residents opinions on Heathrow’s noise management and how noise should be managed. For each wave approx. 2000 residents took part in a telephone poll. The polling backs up Heathrow’s efforts to encourage only the quietest aircraft. The polling is used to help shape noise management.

Figure 1: “Heathrow is working to keep the impact of noise from flights to a minimum”

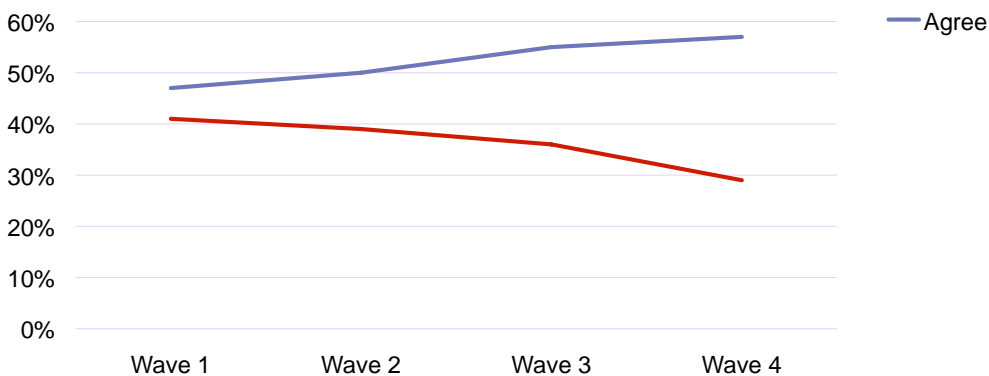


Figure 2: Spontaneous suggestions for what Heathrow Airport could do to limit the impact of noise on people’s daily lives

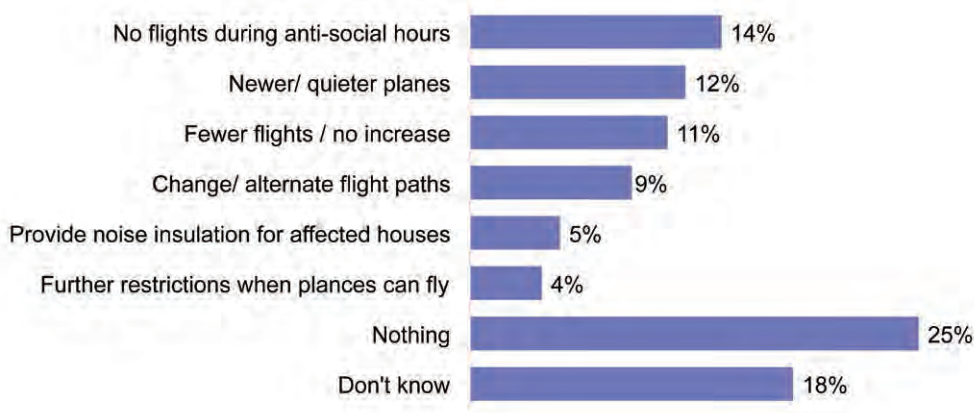
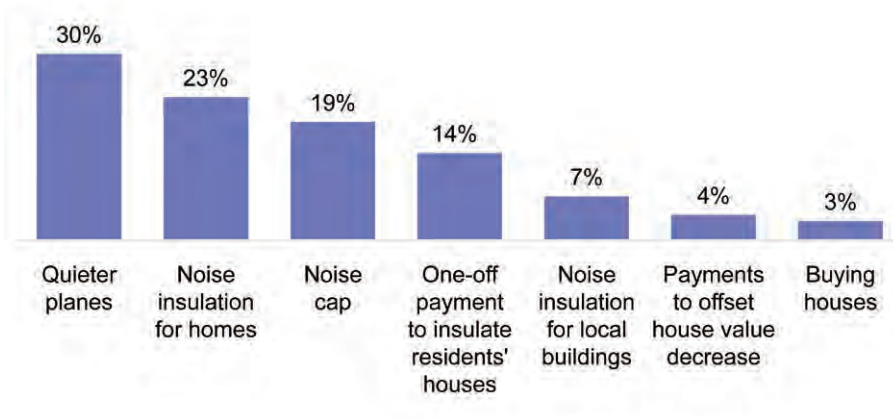


Figure 3: “Which of these things would do most to show you that Heathrow is doing its best to limit the impact of noise on local residents?”



14. Light touch consultation: Feedback on the draft plan from the Heathrow Consultative Committee

Theme	Consultation feedback on proposed actions	Heathrow's response
Drafting of new plan	There was some concern that Heathrow Airport should not be drafting its own action plan. Clarification was also sought on the process of moving from the previous plan to the new plan.	In developing this second Noise Action Plan we have followed the UK requirements and guidance as set by the government. Chapter 7 explains how the plan was developed.
Wording, clarification of terms and targets, and reporting.	A number of comments related to clarification of some of the terms used, targets, dates, and reporting.	We have taken these comments on board and amended the individual actions where appropriate. We have also added terms to the glossary in the annexes.
Impact areas	Some respondents sought clarification on how the 'areas of impact' as used in the action tables should be interpreted. .	Within the action plan table we have used 5 categories; arrivals, departures, ground noise, night flights and community trust and awareness. These are intended to provide a general indication of the aspect of noise management that is impacted by the action. Some actions may cover a number of these. In describing the number of people affected we have tried to indicate the general areas that the action will impact on based on indicative contour descriptors.
Differential landing charges	There were concerns raised by some members that changes to the current landing charges may not drive the changes that Heathrow are trying to incentivize.	The absolute level of airport charges are part of the regulatory process and as such are beyond the remit of the Noise Action Plan. Equally the component parts of the overall charge are subject to separate consultation. Currently the environmental landing charges account for around 21% of the total airport charges. We acknowledge that they will not be the only factor determining the choice of aircraft an airline chooses to operate. and that for home based carriers in particular flexibility can be limited. However we believe it is important to both recognize and encourage investment in the quietest aircraft. However we strongly believe we must create incentives to encourage the quietest fleet to operate at Heathrow, which is reflected in our landing charges.
Fines	There were a number of comments in relation to the review of departure noise infringement fines. This ranged from whether we had contacted the DfT to initiate a review of the current regime to the current level of fines and the ability of operators to control the factors that increase the potential of an infringement.	We are currently reviewing departure fining levels and have included specific actions in the plan. Following on from our request the DfT have established a noise abatement procedures review group whose work is currently ongoing. We are committed to supporting the work of this group and ANMAC.
Policy and procedures	Questions were raised about the ground noise OSIs and late running aircraft.	Clarification has been added to the main text where appropriate and further information on the content of specific OSIs can be found at http://www.heathrowairport.com/airside/useful-publications/operational-safety-instructions
Night Restrictions	Several HACC members raised questions in relation to our actions on night flights. In particular there were queries over the voluntary agreements and the proposal to establish a 2300-0700 QC target	The wider debate in relation to night flights is currently being consulted on https://www.gov.uk/government/consultations/night-flights and is due to close on 31 January 2014. We have retained our voluntary commitments in relation to the scheduling of cargo operations and avoiding landing scheduled arrivals before 0430. Following feedback on our "QC target" action we have revised the text to provide greater clarity on its purpose.
Runway alternation	There was a need identified to provide a measure of compliance with the day and night-time runway alternation patterns.	We will add data in relation to both night time rotation and alternation to our regular quarterly reports which are published on our website.
Annual Contours	Several requests were received relating to additional types of contours and different media formats.	Contour information is provided on our own noise website, as well as the Government and CAA website. We currently provide contours in a range of metrics and have no immediate plans to extend this range. We constantly review the latest research data on noise metrics, and engage with the local community on how to provide meaningful noise information e.g. respite data. We will consider providing different media formats of the contours on specific request for specific purposes. We commission the production of the contours in January and will publish them within 28 days of receipt.
Community schemes	Issues were raised regarding extending the scheme areas and checking the efficiency of the installations.	As part of our pilot Quieter Home Initiative we have put in place an assessment process which seeks to both identify the requirements prior to installation and validate the acoustic performance of 10% of the installation post completion. We are keeping our schemes under regular review.
Engagement committees	Feedback was provided on a number of issues relating to trials, social survey needs, respite, new technology, and the Heathrow Noise Forum.	We have established the Heathrow Noise Forum as a representative group of stakeholders to work collaboratively in seeking to reduce aircraft noise around Heathrow. Part of the role of the group will be to consider how to potentially approach many of the issues raised by respondents.
Respite	In general respondents recognized the need to understand respite more but some also made the point that a balance between other environmental impacts needed to be considered.	Respite will be included in the work of the Heathrow Noise Forum where all stakeholders will be able to discuss the overall impacts of introducing any respite measures.

15. Key changes in the actions and KPI's from first Action Plan

Key changes to actions	The original Noise Action Plan (2010-2015)	The revised Noise Action Plan (2013-2018)
Removed because now considered business as usual/no longer relevant or SMART	17	n/a
Amended or amalgamated*	31	25
Completed	15	n/a
Unchanged	3	3
New	n/a	16
Total	66	44

Table 1: Summary of Key Changes showing those 32 actions that have been completed or removed

NAPv1 ref	Action	Complete	Removed
1	Demonstrating we are doing all reasonably practical to minimise		
1.1.01	We will publish the aircraft fleet profile at Heathrow (proportion of movements by Chapter 3 high, Chapter 3 and Chapter 4 or equivalent) in order to track progress towards a quieter fleet.		●
1.1.03	Taking into account actions 1.1.01 and 1.1.03 we will review our noise related landing charges on an annual basis in order to encourage the use of the quietest aircraft possible at Heathrow. The charges will be published annually in our Conditions of Use.	●	
1.2	Quietest practicable aircraft operations		
1.2.01	Together with our partners in Sustainable Aviation we will develop a best practice guide for ground operations and departures by the end of 2011 which will aim to optimise the operational performance of departing aircraft with regard to noise, balanced with emissions.	●	
1.2.03	We will work with DfT, NATS and the CAA to identify and assess the changes necessary to end the Cranford Agreement and allow the introduction of alternation on easterlies. We will publicise key dates and charges.	●	
1.2.04	By the end of 2010 we will write to the DfT requesting that they undertake a review of the current departure noise limit restrictions regime by 2013.	●	
1.2.05	We will continue to promote adherence to the Arrivals Code of Practice (ACOP) and in particular the achievement of continuous descent approaches (CDAs) through forums such as the new entrants process, our Conditions of Use, FLOPC, Sustainable Aviation and other communication channels.		●
1.2.06	We will continue to fine aircraft in breach of the DfT departure noise limits.		●
1.2.08	We will implement the operational noise policy set out by the DfT by continuing to promote, monitor, and seek to improve and report on adherence to the departure noise abatement procedures detailed in the Heathrow AIP.		●
1.2.09	We will implement the operational noise policy set out by the DfT by continuing to promote, monitor, seek to improve and report on adherence to the arrival noise abatement procedures detailed in the Heathrow AIP.		●
1.2.10	By the end of 2010 we will request the Department of Transport's Aircraft Noise Monitoring Advisory Committee to undertake a review (in line with ICAO's balanced approach and national sustainability objectives) of existing aircraft noise abatement techniques and procedures.	●	
1.2.12	As part of our response to the forthcoming DfT consultation on night flying restrictions at Heathrow we will request that a future regime includes a ban on the scheduling of cargo operations between 23:30 and 06:00 hrs local. In 2006 the number of scheduled cargo operations was zero.		●
1.2.13	As part of our response to the forthcoming DfT consultation on night flying restrictions at Heathrow we will request that a future regime includes a ban on the scheduled early morning arrival movements* arriving before 0430 hrs local. (Those scheduled between 0450 & 0600 local)		●
1.2.18	In conjunction with our airline customers and NATS we will investigate opportunities for improvements to the stand utilisation and taxi procedures at Heathrow in order to reduce ground noise.	●	
1.2.19	In accordance with the requirements of the departure noise infringement regime and as a consequence of the cessation of the Cranford Agreement we will complete the positioning of permanent noise monitors to record noise levels for departures from 09L.	●	
1.3	Effective and Credible Noise Mitigation		
1.3.01	We will undertake a review of our existing Community Buildings Noise Insulation and our Home Relocation Assistance noise mitigation and compensation schemes in 2010.	●	
1.3.08	Based on our summary findings from action 1.3.3 we will write to government in 2011 suggesting they conduct independent research into the relative effectiveness of noise insulation and/or other options as noise mitigation measures.	●	

Table 2: Changes in actions from first Noise Action Plan

*31 actions from the original plan have been consolidated into 25 related actions in the revised plan

15. Key changes in the actions and KPI's from first Action Plan

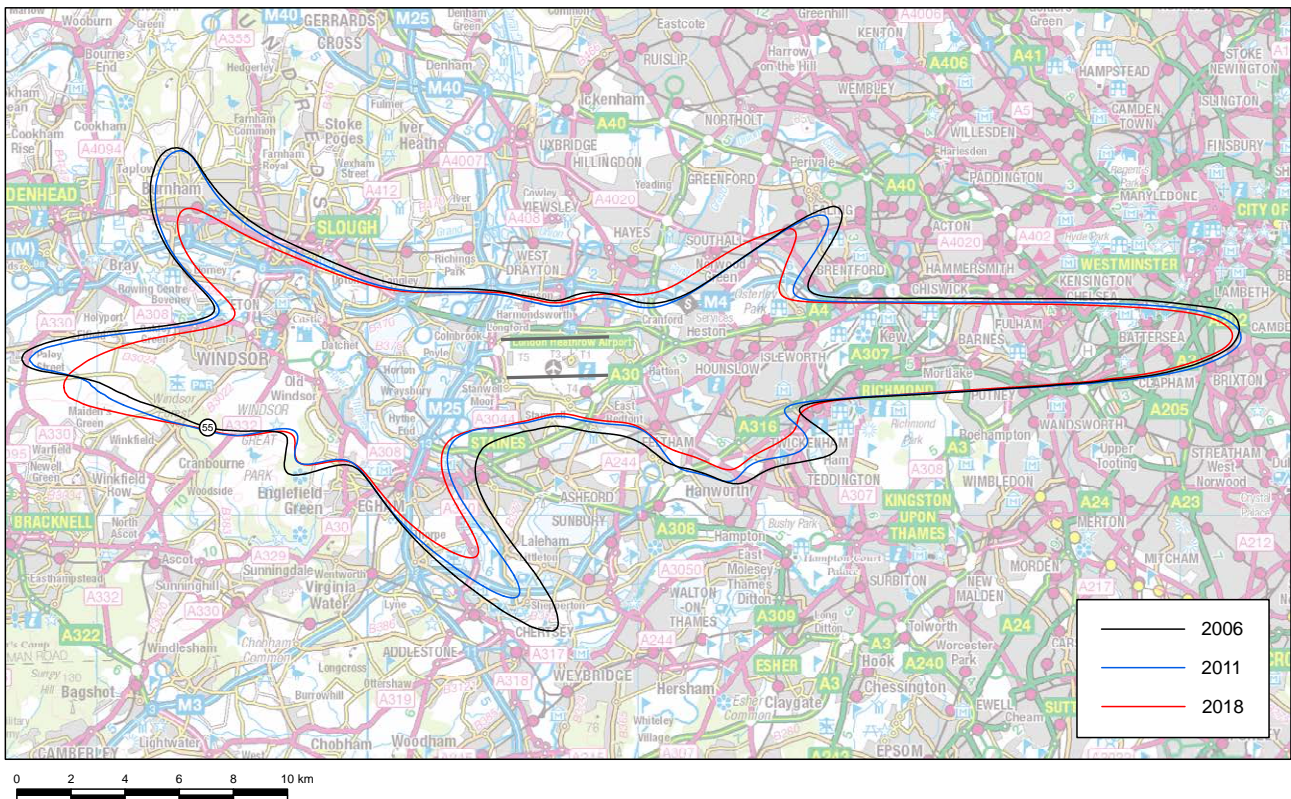
NAPv1 ref	Action	Complete	Removed
2.0	Engaging with communities affected by noise impacts to better understand their concerns and pri		
2.02	In accordance with the requirements of the Environmental Noise Directive (END) we will undertake a formal review of the noise action plan based on the previous years strategic noise mapping results and publicly consult on the outcome of that review every five years beginning in 2012.	●	
2.05	We will continue to host the Heathrow Airport Noise and Track Keeping Working Group. To ensure that the group remains fit for purpose and effective we will review the membership, terms of reference and work programme of the group during 2013.		●
2.08	We will continue to engage with national stakeholder groups such as Aviation Environment Federation and Strategic Aviation Special Interest Group to understand their noise priorities and help inform our strategies and policies.		●
2.10	Working with members of the NTKWG we will establish a community noise and track monitoring program for introduction during 2010.	●	
2.11	Working with members of the NTKWG we will develop a Quarterly FEU Report for publication on our website. The report will enable public access to performance trends and explanatory comments regarding aircraft noise management at Heathrow.	●	
2.12	Working with the HACC and the NTKWG we will establish an independent audit process/appoint independent auditors to annually verify stated progress against the noise action plan.	●	
2.13	We will undertake a review of our complaint handling policy, processes and communication material during 2010.	●	
3.0	Influencing planning policy to to minimise the number of noise sensitive properties around our airports		
3.02	We will make available to the local authorities with residential properties within the 2006 55dBA Lden contours (and others on request) the quarterly and annual FEU reports and noise contours detailed in actions 3.3-33.6 and 3.8-3.11 below.		●
3.03	Within 28 days of publication by the DfT we will ensure that a link to the annual summer daytime (16hour) Leq contours is available on our website.		●
3.07	We will write to the Government to encourage the revision of PPG24 (which guides local authorities in England on the use of their planning powers to minimise the adverse impact of noise) particularly in relation to aircraft noise in order to support delivery of the ICAO balanced approach to noise management.	●	
3.11	Since submission of the noise action plan we have commissioned and published (see Annex 12) forecast Lden contours starting at 55dBA for 2015 which assume the successful implementation of the action plan in order to illustrate the impact of the plan.	●	
3.12	We will continue to keep abreast of Government research and guidance in relation to issues of tranquillity and overflight of areas of outstanding natural beauty (AONB).		●
4.0	Organising ourselves to manage noise efficiently and effectively		
4.01	We will continue to operate and enhance our Noise Management systems.		●
4.02	We will carry out a cost effectiveness /cost benefit assessment on any new noise control measure that is considered for inclusion as part of the action plan.		●
5.0	Achieving a full understanding of aircraft noise to inform our priorities, strategies and targets		
5.03	In order to inform our future noise management strategies we will continue working with individual, industry, academic and regulatory organisations to: <ul style="list-style-type: none"> • Better understand trade offs between noise, local air quality and climate change related emissions, • Further understand the interdependencies of aircraft operations management, • Improve achievement of existing noise abatement procedures and • Investigate and trial new techniques and procedures. 		●
5.06	We will continue to keep abreast of government research and guidance into the potential health effects of aircraft noise in order to help inform and develop our strategies and policies.		●

Table 2: Changes in actions from first Noise Action Plan (continued)

Ref	KPI	Associated target/goal
Minimising noise impact		
KP 5	Moving annual percentage adherence to the Arrivals Runway Pattern (0700-2300hrs local)	Now business as usual and part of quarterly flight performance report published on the website.
Organising effectively		
KP 7	Percentage of applications for our Relocation Assistance scheme processed within 2 weeks of completion	Incorporate into broader KPI
Engaging with communities		
KP 9	Annual noise action plan progress report	Now part of business as usual

Table 3: Changes in KPI's from first Noise Action Plan

16. Forecast 2018 Lden contours and results



HEATHROW AIRPORT
Year 2006, 2011 and Forecast 2018 55 dB Lden Contours (2018 = Without Cranford)
 Modal splits: 2006 = 70%W / 30%E, 2011 = 71%W / 29%E, 2018 = 70%W / 30%E

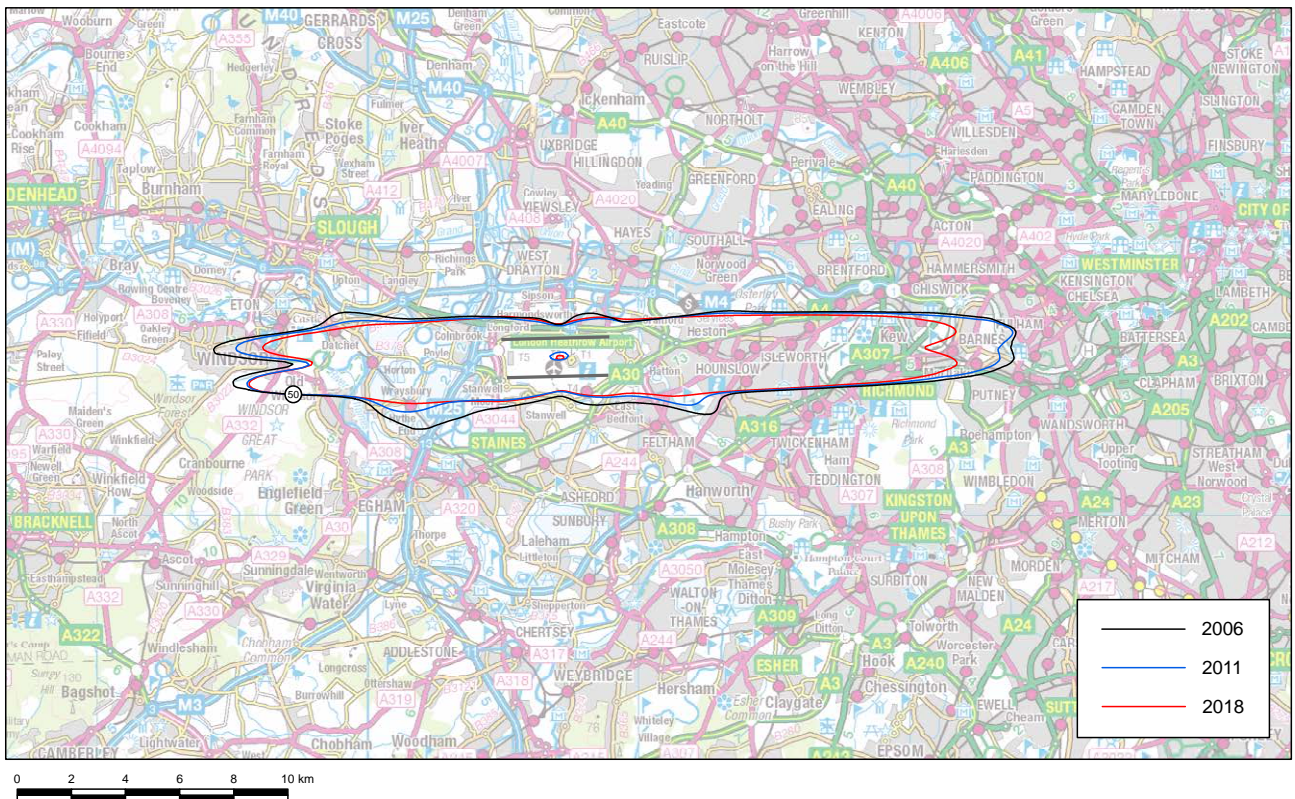
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Figure 1: Forecast 55 dB Lden contour (with full easterly alternation) compared to the actual 2006 and 2011 strategic noise mapping contours

L _{den} (dBA)	Area (km ²)	Population (thousands)	Households (thousands)
≥ 55	203.1	707.6	289.0
≥ 60	75.2	179.8	66.3
≥ 65	30.7	49.2	16.6
≥ 70	9.7	4.9	1.5
≥ 75	3.6	0.0	0.0

Table 1: Forecast Lden contour results for 2018 (70% west/30% east)

16. Forecast 2018 Lden contours and results



HEATHROW AIRPORT
Year 2006, 2011 and Forecast 2018 50 dB L_{night} Contours (2018 = Without Cranford)
 Modal splits: 2006 = 72%W / 28%E, 2011 = 72%W / 28%E, 2018 = 71%W / 29%E

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Figure 2: Forecast 50 dB L_{night} contour compared to the actual 2006 and 2011 strategic noise mapping contours

L _{night} (dBA)	Area (km ²)	Population (thousands)	Households (thousands)
≥ 50	66.6	187.6	70.9
≥ 55	23.4	53.8	19.0
≥ 60	7.5	9.6	2.9
≥ 65	2.6	1.0	0.3
≥ 70	1.3	0.0	0.0

Table 2: Forecast L_{night} contour results for 2018 & 71% west/29% east)

17. Financial information

Type	Description	Approximate annual cost (£K)
Staff costs	Includes salary & training costs for elements of the Communications, Airside, Flight Performance Unit, Strategy and Environmental Compliance Teams	650
Noise and Track Keeping Equipment (Hardware & Software)	Renewal, calibration, repair, software licences, support development	460
Publications and communication	Seminars, documents, website	140
Noise insulation and mitigation schemes	Daytime, night time, Community Buildings and Home Relocation Schemes	5000
Consultancy support	Audit, forecasting, noise studies, benchmarking etc	240

Indicative annual financial expenditure (to Heathrow) on noise management activities

heathrow.com

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Heathrow
Making every journey better

[Home \(https://www.nats.aero/\)](https://www.nats.aero/) / [Environment \(https://www.nats.aero/environment/\)](https://www.nats.aero/environment/)

Noise

At NATS we are very aware of the impact that aircraft noise has on those who live under flight paths. That's why we work with airports, airlines and communities to help shape and inform options to better manage the effect of noise and minimise the impacts wherever possible.



At NATS we are committed to limiting and where possible reducing aircraft noise.

What is Aircraft Noise?

Noise is defined as unwanted sound that may result in disturbance and annoyance. Aircraft noise is caused by airflow around the aircraft fuselage and wings as well as noise from the engines, with different aircraft producing different noise levels and different noise frequencies and tones. Aircraft are individually less noisy than in previous generations with a reduction of noise by more than 90% since jet aircraft entered service in the 1960s. However as traffic continues to grow as demand for air travel increases, this improvement is often counteracted by the number of aircraft overflying an area.

The way that people experience noise from all types of sources can significantly differ. But noise is not always just about decibels; the pitch, vibration, variation in intensity and the length of exposure time can have impacts too. The level of annoyance also varies owing to factors such as the length of time a person lives in an area affected by aircraft noise, personal sensitivity, the impact of outside influences and the activity the individual is engaged in at the time e.g. sleeping, working, watching TV.

Comparison of Noise Levels

Typical Sound	Approximate noise level (dBA)
Pneumatic drill, 7m away	95
Heavy diesel lorry at 40km/h, 7m away	85
Medium Aircraft Descending at 1000ft	70
Busy general office	60
Quiet office	50
Quiet bedroom, library	35
Threshold of audible sound	0

The noise level of aircraft can vary immensely depending on a number of factors;

- > How high aircraft are above the ground.
- > Whether aircraft are directly overhead or how far they are laterally displaced from the receiver (in any direction).
- > Whether aircraft are arriving or departing which can affect the amount of engine thrust they are using (and therefore the noise level) and the amount of air resistance around the fuselage, wings and undercarriage.
- > The weather which can increase or decrease the experience of noise depending on conditions. Weather can also affect where aircraft are in the sky since aircraft take-off and land into the wind, affecting which runways are used.



Submission to the Airports Commission

Aviation Noise

Stop Stansted Expansion ('SSE') was established in 2002 in response to Government proposals for major expansion at Stansted Airport. We have some 7,500 members and registered online supporters including 150 parish and town councils and local residents' groups and national and local environmental organisations. Our objective is to contain the development of Stansted Airport within tight limits that are truly sustainable and, in this way, to protect the quality of life of residents over wide areas of Cambridgeshire, Essex, Hertfordshire and Suffolk, to preserve our heritage and to protect the natural environment.

Stop Stansted Expansion
 September 2013
www.stopstanstedexpansion.com



Structure of this submission

This submission is divided into two parts:

SECTION A - General commentary on the impact of aircraft noise on local communities.

SECTION B - Responses to the specific questions listed in the Airports Commission's 'Discussion Paper 05: Aviation Noise' dated July 2013.

- - -

SECTION A

1. Introduction

1.1 We welcome this opportunity to respond to the Airports Commission's Discussion Paper on *Aviation Noise* ('the Discussion Paper'). The March 2013 *Aviation Policy Framework* ('APF'), published by the Department for Transport ('DfT') makes clear that *'The Government recognises that noise is the primary concern of local communities near airports and we take its impact seriously'*.¹ The section on noise and other environmental impacts was the longest chapter in the consultative draft APF and *'noise was the most popular theme in responses to the consultation, the majority of which were from local residents expressing concern about the level of existing and/or future aircraft noise'*.²

1.2 The Discussion Paper acknowledges at the outset that *'aircraft noise is a significant concern'* and that *'these concerns have appeared to have deepened, even as aircraft have become progressively quieter'*.³ Firstly, it would be more correct to use the description 'aircraft have become progressively less noisy'. Secondly, we submit that there is a simple explanation for the apparent enigma - the present method of assessing aircraft noise is inadequate, based as it is on an averaging metric, not taking account of background noise levels and failing to give proper recognition to the increasing numbers of flights.

1.3 We are particularly concerned that the operation of Stansted Airport – which, since its inception, has been known as *'the Airport in the Countryside'* – should be environmentally sustainable especially bearing in mind the largely rural location where local communities are otherwise able to enjoy a good quality of life, partly as a result of low ambient (background) noise levels. In this submission we also provide information specifically for Stansted Airport.

2. Measuring aviation noise

2.1 While the Discussion Paper is well researched and well documented, it does not tackle the fundamental reason as to why the *'significant concerns'* about aircraft noise *'have appeared to have deepened'*.³ In November 2007, when publishing the Attitudes to Noise from Aviation Sources in England ('ANASE') study, the then Secretary of State said that *'people are more annoyed by all levels of aircraft noise than they were in 1985'*.⁴ It is

¹ *'Aviation Policy Framework'* Mar 2013, Executive Summary, DfT, para 16.

² *'Draft Aviation Policy Framework consultation: Summary of responses'*, DfT, Mar 2013, para 22.

³ *'Discussion Paper: Aviation Noise'*, Airports Commission, Jul 2013, para 1.1.

⁴ The Rt Hon Ruth Kelly MP, Secretary of State for Transport, letter dated 2 Nov 2007.

disappointing that nothing has been done since 2007 to address the issues raised by ANASE.

2.2 Aircraft are inherently noisy and it is disappointing that the Discussion Paper does not make this clear. Table 3.1 in the Discussion Paper gives approximate sound levels for different activities or situations. It has one major omission when compared with the referenced source material⁵: 'jet aircraft, 50m away'. In the referenced source material, the sound pressure level for a 'jet aircraft, 50m away' is given as 140dB – at the top of the table for loudness and twice as loud as the 130dB threshold of pain. It would have been a more balanced comparison of sound pressure levels if this evidence of aircraft noise had been included in the Discussion Paper.

2.3 Aircraft noise is not only loud; it also has a large low frequency content. Low frequency noise encounters less absorption than higher frequencies as it travels through the air and it persists for longer distances. Additionally, the amount of sound transmitted from the outside to the inside of buildings is greater at lower than at higher frequencies. Furthermore, modern high ratio bypass turbofan engines are characterised by a tonal (whine) feature which increases the likelihood of complaints.

3. Why has aircraft noise become more annoying?

3.1 There is considerable research, some of which is referenced in the Discussion Paper, which shows that aircraft noise is more annoying now than in the past. For instance, in November 2009, the European Commission published a paper which said:

'Aircraft noise has become more annoying for European citizens in recent years, according to new research. The research found that annoyance with road traffic noise had not increased, suggesting attitudes to aircraft noise have changed. The researchers call for changes to the standard procedure used in the EU to predict aircraft noise annoyance'.⁶

3.2 In searching for reasons, a 2009 Omega study concluded:

'It seems plausible that, for reasons which are presently unknown, people may be noticing or otherwise paying attention to a higher proportion of aircraft sound events than in the past. If true, this could be because of the general increase in traffic, meaning that event frequencies have increased in recent years, or it could be because of changes in the character or sound quality of the sound (which is not necessarily the same thing as differences in sound level measured in dBA or EPNdB), or it could be simply because people's expectations and tolerance levels have changed'.⁷

3.3 As noted in para 1.2 above, the apparent enigma of less noisy aircraft and more noise annoyance is fundamentally due to:

- the wholly inappropriate method of measuring and assessing aircraft noise; and
- the increased numbers of aircraft flights.

⁵ <http://www.sengpielaudio.com/TableOfSoundPressureLevels.htm>.

⁶ European Commission, Science for Environment Policy paper, Nov 2009 - <http://ec.europa.eu/environment/integration/research/newsalert/pdf/173na1.pdf>.

⁷ 'Advanced Open Rotors - Balancing noise costs against reduced carbon emissions for future aircraft', Ieish Gamah and Rod Self, Technical Report, Omega, Feb 2009 - <http://www.cate.mmu.ac.uk/wp-content/uploads/2012/06/36-Final-Report-AOR1.pdf>.

4. The scope to reduce aviation noise

4.1 While Table 5.1 of the Discussion Paper shows a historic reduction in cumulative certified aircraft noise levels, the improvement curve is clearly flattening out and becoming asymptotic to zero. There are no grounds to expect the noise performance of aircraft to improve much further. In addition, the concept of the Advanced Open Rotor ('AOR') engine which has the prospect of reducing fuel burn and emissions is likely to be noisier than equivalent high bypass turbofan engines.⁸ Furthermore the thrust limitations of AOR engines are likely to limit their use to short to medium haul aircraft.

4.2 There is, in the present state of technology, a trade-off between reducing noise and reducing greenhouse gas emissions and nitrogen oxides which are harmful to human health in most flight operations. We believe that high priority should be attached to overcoming this dilemma, but in the meantime, while this unenviable trade-off between two health hazards exists, we believe that close to airports and along flight paths up to 5,000 feet, preference should be given to reducing noise, particularly on take-off.

4.3 The Discussion Paper describes future technical and operational improvements that could reduce aircraft noise nuisance but there is no mention of any financial measures for noise reduction or management other than acoustic insulation for households. We believe that financial measures can be a powerful management tool and, without entering into the debate on taxation and duty, there is surely a place for financial incentives for noise reduction. A differential scheme for landing charges is already proposed in the APF which states:

'As part of the range of options available for reducing noise, airports should consider using differential landing charges to incentivise quieter aircraft. The Government has asked the CAA to investigate the use of these charges and the CAA will be publishing its findings later this year'.⁹

4.4 We very much support this approach, particularly at night, and suggest there may be other financial measures that could help reduce noise impacts and this should be further researched. An obvious example is to raise the level of fines for noise and off-track infringements for departing aircraft. It is recognised that these measures might be seen as restrictions by the airlines, but they should be explored and evaluated.

4.5 Financial incentives could be helpful in deterring unnecessary or inappropriate sleep disturbance from night flights. There will be stronger justification for community disturbance and sleep deprivation caused by night flights in the case of a CATM carrying express parcels or fresh produce as compared to a CATM carrying non-urgent or non-perishable goods. An illustrative example is a noisy Boeing 747-200 freighter which arrived at Stansted Airport around 4.30am one morning from Guangzhou giving rise to numerous noise complaints. It was learned later that its cargo had been 22 pallets of sex toys and lingerie destined for the Ann Summers central warehouse in Surrey. It is, in our view, not possible to justify extensive community disturbance and sleep deprivation for this type of non-perishable, non-urgent imported cargo and it is difficult to demonstrate that it has such economic value to the UK as to merit its arrival at night rather than during the day.

4.6 It is also worth reflecting that many of those whose sleep was disturbed by this aircraft would have been up early the next morning to travel to high value jobs in the City of London or may have had equally high-pressure jobs in, say, healthcare or teaching. A cost benefit analysis on night flights should be able to reflect these realities.

⁸ 'Discussion Paper: Aviation Noise', Airports Commission, Jul 2013, Box 5.1.

⁹ 'Aviation Policy Framework', DfT, Mar 2013, para 3.27.

4.7 A number of operational improvements could reduce noise nuisance near airports and under flight paths as well as improving operational efficiency for airline operators. Many of these are currently being trialled. We support their expeditious early implementation and give the following examples:

- Continuous Descent Approach ('CDA'), for example to runway 04 at Stansted Airport;
- Continuous Climb Departures (CCD');
- Steeper descents;
- Reduction in the number and use of holding stacks;
- Tailored lateral flight paths;
- Reduced Engine Taxiing; and
- Banning the use of reverse thrust at night except in emergency.

5. Further work programmes

Following the publication of the APF, the Government proposed a number of further work programmes to be taken forward by the DfT, its Aircraft Noise Management Advisory Committee, the Civil Aviation Authority and the Airports Commission. We very much support this programme of work and look forward to making a full contribution.

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Section B

(Responding to the questions asked in the Discussion Paper)

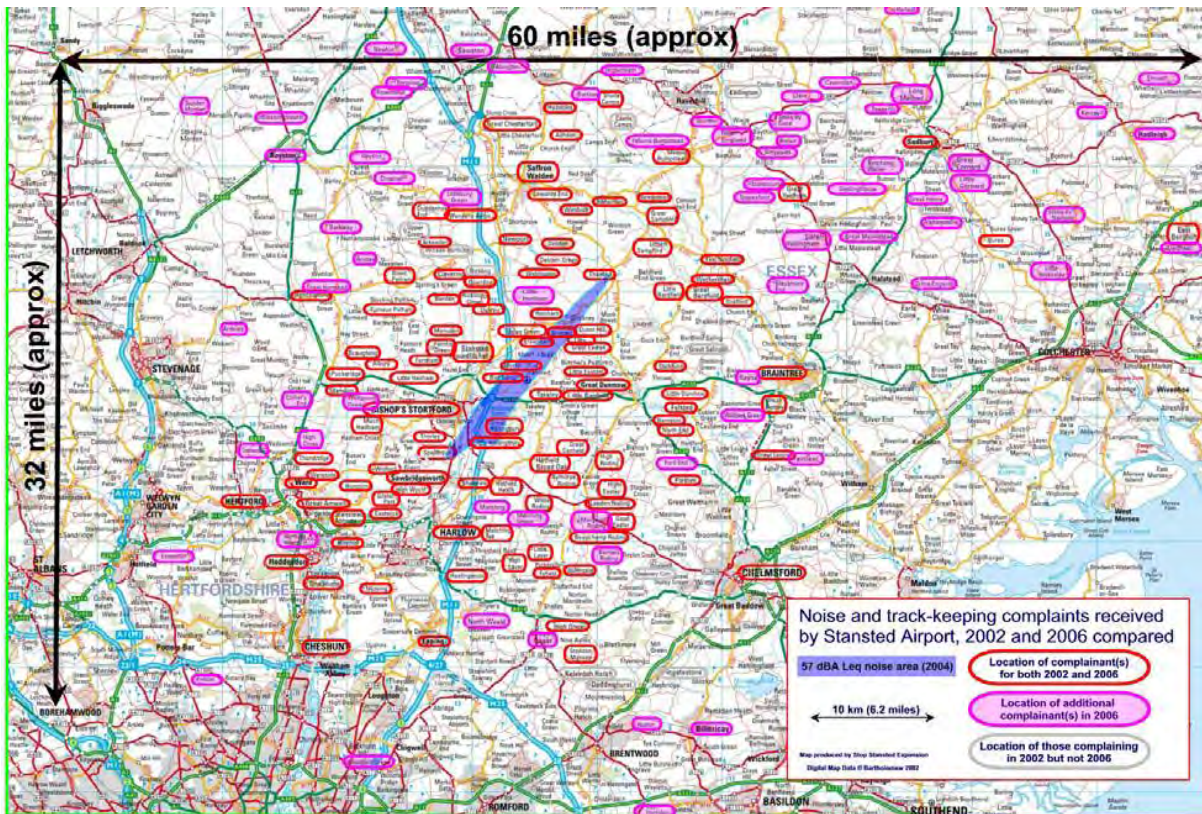
Q1: What is the most appropriate methodology to assess and compare different airport noise footprints? (Chapter 3)

A1.1 Any methodology based on the LAeq averaging system is not a reliable measure of the extent of aircraft noise disturbance around airports and under flight paths. Measurement of average noise over a length of time is insensitive to the frequency of aircraft noise events and it understates the impact of aircraft noise intrusion on local communities – especially in rural areas where ambient noise levels are very low and which consist largely of pleasant, natural sounds.

A1.2 The area enclosed by the 57dB LAeq16-hour noise contour at Stansted Airport is limited by planning condition to 33.9 sq km. However, evidence presented to the Stansted 'Generation 1' Public Inquiry in 2007¹⁰, based on registered noise complaints, demonstrated that the area adversely affected by aircraft noise is far greater than the 57dB LAeq16-hour contour limit area as shown on the map overleaf.

It can be concluded that the 57dB LAeq 16-hour contour limit area at Stansted Airport bears very little relationship to the area where people are actually complaining about aircraft noise. As can be seen by the locations of complaints overleaf, they bear more relationship to areas under flight paths and areas of low ambient background noise.

¹⁰ 'Proof of Evidence on Air Noise' (Stansted G1 Public Inquiry), SSE, Apr 2007, Annex 1, Figure 2 - [http://www.stopstanstedexpansion.com/documents/PI_SSE6a-Proof-Air%20Noise\(amended\).pdf](http://www.stopstanstedexpansion.com/documents/PI_SSE6a-Proof-Air%20Noise(amended).pdf).



Key: Locations coloured in red are those for complainants in both 2002 and 2006. Locations coloured in magenta are those for additional complainants in 2006. The 57dB LAeq 16-hour contour limit area is coloured in blue.

A1.3 It is not only local airport community groups, like SSE, who have little faith in the LAeq 16-hour system for assessing aircraft noise impacts. The Inspector at the Heathrow T5 public inquiry stated in his report:

- *'The survey on which the use of the LAeq 16-hour is based was carried out in 1982 and the relationship between the LAeq and community annoyance was statistically weak even at that time';*
- *'...it does seem likely that the weight attached to the 57dB LAeq by the Department [for Transport] as the measure of the overall noise climate is greater than the original research would support';*
- *'...[the LAeq 16-hour index] was the subject of severe criticism much of which I consider to be well-founded. ...I believe that it fails to give adequate weight to the number of aircraft movements';*
- *'Even the Department [for Transport] recognized the deficiencies of the LAeq system. They also accepted that it is difficult to establish the true relationship between the noise of individual events and their number and that it would have been useful if further social surveys had been carried out';*
- *'If parties are to have confidence in the indices used to measure the noise climate they need to be founded on a sound basis of up-to-date research. Unfortunately the Department's own evidence suggests that this does not apply to the use of LAeq in spite of their argument that research had guided the choice of noise indices since 1967'.¹¹*

A1.4 The present methodology has the following main shortcomings:

A1.4.1 The most significant shortcoming of LAeq 16-hour averaging measurements is that they are very insensitive to the number of aircraft noise events. A doubling of like-for-like

¹¹ *'Report of the Inspector at the Heathrow Terminal 5 Inquiry', Dec 2000, paras 21.3.31-35.*

aircraft movements will increase the LAeq by only 3dB. Barely perceptibly 'quieter' aircraft would effectively permit more aircraft movements for the same average sound pressure level LAeq. To illustrate this, a simple example is to take Stansted Airport with its current throughput of some 130,000 air traffic movements per year (which is approximately half the current planning condition cap on the number of air traffic movements). If all these aircraft were to reduce their noise emissions by 3dB and at the same time the number of movements were to double (to the planning condition cap) with the same fleet mix, the size of the LAeq 16-hour contour would stay the same. The reduction in noise of each aircraft would barely be perceptible as a change of 3dB is the minimum perceptible under normal conditions. But a doubling of air traffic movements would be very noticeable.

At the very least, and as a first step towards properly tackling aircraft noise disturbance, an improved measurement system for aircraft noise should be introduced, such as that described in the ANASE report.¹² Moreover the evidence gathered in the course of the ANASE study clearly showed that the DfT was not only relying upon the wrong system for measuring aircraft noise impacts but was also applying the wrong standards of what constitutes low, moderate and high levels of noise annoyance. The LAeq averaging system for assessing noise disturbance, based upon dose/response surveys in the early 1980's is now wholly inadequate. It is not sufficiently sensitive to the number of aircraft noise events and takes no account of background noise levels against which each noise event is heard. The Government should take forward the work of ANASE as a priority and develop a new framework for the measurement and control of aircraft noise impacts, taking account of the recommendations set down in the World Health Organisation ('WHO') *Guidelines for Community Noise*¹³.

A1.4.2 The second main shortcoming in the current methodology is the common use of A-weighting for all metrics or indices when measuring aircraft noise. A-weighting underestimates the sound pressure level of noise with low frequency components. It is disappointing to note that the Discussion Paper does not mention this effect whereby A-weighting, originally intended only for the measurement of low-level sounds, largely discounts frequencies below 200Hz. At lower amplitudes of sound this gives a reasonably accurate assessment of the way sound is perceived. However, the noise spectrum of aircraft engines has a large proportion of total noise below 200Hz. A-weighting measurements use filters to attenuate frequencies below 200Hz whereas C-weighting, originally intended for high-level sounds, will give a more accurate assessment of aircraft noise. The WHO *Guidelines for Community Noise* state:

'The evidence on low-frequency noise is sufficiently strong to warrant immediate concern. Various industrial sources emit continuous low-frequency noise (compressors, pumps, diesel engines, fans, public works); and large aircraft, heavy-duty vehicles and railway traffic produce intermittent low-frequency noise. Low-frequency noise may also produce vibrations and rattles as secondary effects. Health effects due to low-frequency components in noise are estimated to be more severe than for community noises in general (Berglund et al. 1996). Since A-weighting underestimates the sound pressure level of noise with low-frequency components, a better assessment of health effects would be to use C-weighting'.¹⁴

As a general rule where C-weighted measurements exceed A-weighted measurements by more than 10 dB, there is a large content of low frequency sound present. And as stated earlier, low frequency sound travels further and is more penetrating through buildings.

Noise measurements for A-weighted and C-weighted noise values were undertaken for the National Trust in 2007 close to Stansted Airport by MAS Environmental for a number of departing aircraft flying over Hatfield Forest (a Site of Special Scientific Interest and the

¹² 'Attitudes to Noise from Aviation Sources in England', Report for DfT, Oct 2007.

¹³ WHO 'Guidelines for Community Noise', 1999.

¹⁴ Ibid, para 3.8.

UK's only remaining intact Royal Hunting Forest). These measurements were used in the National Trust's evidence to the Stansted Airport 'Generation 1' Public Inquiry in 2007.¹⁵ They compared 1/3rd octave spectrum graphs of A-weighted and C-weighted average sound energy of over-flying aircraft after take-off. The increase in values from A-weighted to C-weighted in these measurements of each aircraft on take-off was between 13dB and 14dB. This is a considerable increase in noise disturbance. A-weighting underestimates the aircraft noise footprint for both maximum noise levels and average noise levels and this should be remedied.

A1.4.3 The third main shortcoming in the current method of measuring aircraft noise is the total absence of the use of background (or ambient) noise levels as a component in assessing noise harm. Each discrete noise event such as an aircraft movement will be heard against the background noise levels of the particular location at the time. The Discussion Paper mentions comparing noise to pre-existing background sound levels as one approach. It is hard to see how this should not be universally good practice since it would enable noise nuisance to be assessed around each airport, each with different levels of local activity and background noise. However the Discussion Paper does recognise the importance of preserving areas of tranquillity and environmental noise quality where it is already regarded as 'good'. The use of absolute levels of noise suggested by the Discussion Paper as a baseline for assessment is not thought to have merit compared with changes relative to the existing noise environment (i.e. background noise levels).

Failure to take into account background noise levels and solely using the LAeq noise averaging system understates the true adverse impact of aircraft noise intrusion on local communities, including around Stansted Airport where the region is mostly a large number of small villages and a few market towns. The ambient noise levels in such a rural region are very low, particularly at night, and consist largely of pleasant, natural sounds. Among the reasons why people decide to live in this region of East Hertfordshire, Essex, South Cambridgeshire and Suffolk are the quality of life benefits afforded by the largely tranquil environment. The use of population numbers within a 57dB LAeq contour as an assessment of noise nuisance is not an appropriate measure of noise nuisance impacts upon the community living and working here. It follows therefore that the Discussion Paper's proposals on the 'productivity' of an airport is not only over-simplistic but also deeply flawed. Comparing the population living within the 57dB LAeq 16-hour contour to the airport's throughput - whether passenger or ATMs - is fundamentally flawed at the outset by virtue of using 57dB LAeq metrics and ignoring background noise levels.

A1.4.4 A fourth shortcoming in the LAeq noise averaging system is that it is difficult to explain to communities affected by aircraft noise the concept of the averaging method of assessment. This averaging method is also complicated by the use of logarithms to encompass the very large acoustic range of the human ear. The subtleties of the use of logarithms add to the difficulties of communicating the largely counter-intuitive LAeq averaging method. Moving towards a more robust system should also endeavour to overcome the difficulties of communicating current measurement practice.

A1.5 People hear aircraft noise as a discrete number of events with associated noise levels, noise characteristics and durations as well as the frequency of these events. They do not hear aircraft noise as a constant 16 hour equivalent noise level. However the averaging measurement LA90 that is the universally accepted indicator of background noise is a good example of where an averaging measure is appropriate. It is the threshold below which the community noise levels seldom drop and, as an accepted reference, is a good datum against which to assess aircraft noise events.

¹⁵ 'Proof of Evidence to Stansted G1 Public Inquiry', Mike Stigwood, MAS Environmental (for the National Trust), Apr 2007 - http://www.stopstanstedexpansion.com/documents/NT_Environmental_MASMainProof70430.pdf.

A1.6 Finally, we would re-emphasise that it is not so much the absolute aircraft noise impact that matters, but its relative impact, compared to the ambient noise level. Thus, if you live and work next to a busy road or an otherwise noisy environment you will, in all likelihood, be far less disturbed by aircraft noise than if you live and work in a rural and otherwise peaceful environment. Clearly this is an extremely important issue in the case of Stansted and other airports located in a rural setting and it must be given due consideration.

Q2: How could the assessment methods described in Chapter 4 be improved to better reflect noise impacts and effects? (Chapter 4)

A2.1 A key improvement should be to take forward the ANASE work and devise a better method for assessing aircraft noise nuisance that is not solely based on LAeq averaging measurements. A better framework for the measurement of aircraft noise levels, spectral content, time duration and frequency of occurrence of noisy events needs to be implemented. The new framework should also take full account of the recommendations set down in the WHO *Guidelines for Community Noise*.

A2.2 The need for improvement has been recognised in the APF which states:

'... the Government recognises that people do not experience noise in an averaged manner and that the value of the LAeq indicator does not necessarily reflect all aspects of the perception of aircraft noise. For this reason we recommend that average noise contours should not be the only measure used when airports seek to explain how locations under flight paths are affected by aircraft noise. Instead the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities ... developing these measures in consultation with their consultative committee and local communities'.¹⁶

We very much support this statement and support these first steps to use alternative measures. As part of this work, it surely must be a priority to better understand the enigma of why *'aircraft noise..... concerns have appeared to have deepened, even as aircraft have become progressively quieter.'*¹⁷

A2.3 The Australian N70 type metric has merit in that it was devised to represent 'Number Above' contours, combining information on single event noise levels with aircraft movement numbers. It directly represents an assessment of the noise level of each flight and the number of flights as clearly audible events. Other things being equal, if the number of aircraft movements over an area doubles, the N70 doubles. Contours can be drawn for lower levels such as N60 at night. The N70 type is a useful metric as it permits measured noise levels to be very neatly summarised for any given period. However, as the Discussion Paper points out, N70 contours do not differentiate between the level of noise above a certain threshold or the duration of noise events. So the N70 metric, as we have argued earlier, needs to be used together with and measured against background noise levels.

A2.4 We do not agree with the implied criticism of the N70 system in respect of the duration of noise events given in para 3.28 of the Discussion Paper. While aircraft noise event durations are variable, we doubt whether the example given of *'an event of 40 second duration with a maximum level of 91 dB(A)'* is a frequent occurrence. The UK AIP Noise Abatement Procedures at Heathrow, Gatwick and Stansted airports set limits for maximum levels of departure noise for the day, night and night quota periods of 94, 89 and 87dB(A) respectively at 6.5km from start of roll. Taking the example of Stansted Airport, there were only five noise infringements throughout the whole of 2012 for some 65,000 departures.

¹⁶ 'Aviation Policy Framework', DfT, Mar 2013, para 3.19.

¹⁷ 'Discussion Paper: Aviation Noise', Airports Commission, Jul 2013, para 1.1.

These figures also demonstrate that the Government's noise infringement limits for Stansted are set too high since there were nearly 750 noise complaints made to the airport in 2012.

A2.5 Additionally with regard to the duration of noise events, it is important to note that the Sound Exposure Level ('SEL') metric is available as a supplementary indicator. SEL measurements are another way of measuring the noise of a single aircraft flyover by accounting for both the duration and intensity of the noise and the SEL metric has the added advantage of complementing the N70 type metric.

A2.6 Furthermore, the European Noise Directive ('END') recommends the use of 'L_{Amax}, or SEL (sound exposure level) for night period protection in the case of noise peaks'.¹⁸ Additionally, the WHO *Night Noise Guidelines for Europe* (2009) state:

*'Much attention has been paid to the use of single event descriptors such as L_{Amax} (maximum outdoor sound pressure level) and SEL (sound exposure level). As the Position Paper on EU noise indicators (European Commission, 2000) points out, this is an important laboratory tool to describe instantaneous reactions to noise. But when it comes to long-term protection, the number of events is equally important' ... 'There is no generally accepted way to count the number of (relevant) noise events. Proposals range from the number of measured L_{Amax}, the number of units (vehicles, aeroplanes, trains) passing by, to the number exceeding a certain L_{Amax} level (commonly indicated by N_{Axx}; N_{A70} is the number of events higher than 70 dB).'*¹⁹

A2.7 It is recommended that a combination of N70 and SEL metrics should be considered as part of establishing an improved measurement system for aircraft noise. It is closer to what people actually hear and much easier than LAeqs to explain to the general public.

A2.8 Additionally we believe that there is merit in developing a system along the lines of BS4142 which is the method for rating industrial noise affecting mixed residential and industrial areas. BS4142 is already in common use for measuring background noise levels in all noise environments and is used where certain acoustic features increase the likelihood of complaints over that expected from a simple comparison between the specific noise level and the background noise level. The types of industrial noise embraced by BS4142 are those having a distinguishable continuous note or whine and the noise is irregular enough to attract attention. This description is very similar to aircraft flying near airports with modern high bypass ratio turbofan engines. Aircraft engine noise is characterised by having a tonal ('whine') content and a large component of low frequency noise particularly on take-off. It should be possible to devise a similar approach for aircraft noise measurement where the probability of the increase in the likelihood of complaints can be assessed. It would have the added advantage of comparing aircraft noise levels against background noise.

A2.9 In arriving at a more appropriate framework of assessment methods, it should be possible to overcome the shortcomings of A-weighting for aircraft noise. Most sound level meters have the capability to use C-weighting as well as A-weighting. The method of using C-weighting measurements would better reflect the noise levels and frequency spectrum of aircraft noise and provide an improved assessment method of noise annoyance. And it is worth noting here that the European Noise Directive ('END') recommends the use of supplementary noise indicators in some cases and these include when the low frequency content of the noise is strong and when the noise contains strong tonal components.²⁰ Both of these characteristics are present in the noise from high bypass ratio turbofan engines.

¹⁸ 'European Noise Directive 2002/49/EC', Jun 2002, Annex 1, para 3.

¹⁹ 'Night Noise Guidelines for Europe', WHO, 2009, paras 1.3.2-1.3.3.

²⁰ 'European Noise Directive 2002/49/EC', Jun 2002, Annex 1, para 3.

A2.10 LAeq contours are nonetheless important for comparisons over time since they have been regularly used for noise compensation and form part of planning conditions. But even these criteria need to be more robustly served by improved metrics. There is also a need to update current planning guidance following the replacement of the Planning Policy Guidance 24: *Planning and Noise* with the National Planning Policy Framework in March 2012 and to set noise thresholds to be used in reaching planning decisions.

A2.11 As explained earlier, we believe that the framework of improved assessment methods must include measurement of background noise levels. The L90 noise metric is in common use for many applications, easily understood as a measure of ambient noise and has the advantage of being specific to each airport location. It provides a sensible datum against which aircraft noise is heard. Further work should be carried out into background noise levels throughout the UK including mapping and predictions of background noise levels, possibly based on population density, building on the SINTEF report into background noise levels in Europe.²¹ This work would complement the strategic noise mapping carried out for airports with more than 50,000 movements a year under the END. It would provide the local datum against which the END noise mapping indicators Lden and Lnight can be compared.

Q3: Is monetising noise impacts and effects a sensible approach? If so, which monetisation methods described here hold the most credibility, or are most pertinent to noise and its various effects? (Chapter 4)

A3.1 The Discussion Paper includes ERCD Report 1209 *'Proposed methodology for estimating the cost of sleep disturbance from aircraft noise'* in its list of general references but does not directly address the findings of the report. This ERCD report reflects the available evidence but states that additional research is needed in order to develop a workable methodology for monetising the effects of cognitive impairment in children. In the meantime, these effects are excluded. This is a significant exclusion because the ERCD report also states *'cognitive impairment in children is considered to manifest itself as a loss in long-term productivity.'*²²

A3.2 Moreover, it is not clear that the ERCD report gives proper consideration to the cost of reduced employee productivity caused by aircraft noise at night, for example, where an employee - perhaps a City trader or a surgeon - turns up for work having had a disturbed night's sleep due to aircraft noise and underperforms as a result. This would clearly be to the detriment of the firm or the patients and quite possibly also to the UK economy.

A3.3 We believe that quantification of the social and environmental costs needs to be undertaken in a systematic manner which reflects the true value of a proper night's sleep for individuals contributing to the UK economy and whose efficiency is impaired by interrupted sleep. A cost benefit analysis of Heathrow night flights carried out by CE Delft economic consultancy²³ showed that a ban on Heathrow night flights could benefit the economy by £860 million over 10 years. The report concluded that a ban on night flights was likely to be beneficial to the UK economy *'as the economic costs of the ban will be outweighed by the savings made by the reduced health costs of the sleep disturbance and stress caused by the noise of the night flights'*.

²¹ SINTEF ICT Report A6631 for European Aviation Safety Agency, Jun 2008 -

http://www.easa.europa.eu/rulemaking/docs/research/Background_noise_report.pdf

²² *'Proposed methodology for estimating the cost of sleep disturbance from aircraft noise'*, ERCD, Jan 2013, para 1.5.2.

²³ <http://www.hacan.org.uk/resources/reports/night.flight.final.report.pdf>.

Q4: Are there any specific thresholds that significantly alter the nature of any noise assessment, e.g. a level or intermittency of noise beyond which the impact or effect significantly changes in nature? (Chapter 4)

A4.1 The first obvious threshold is the number of events (flights). It is axiomatic that, all other things being equal, a reduction in the number of flights will reduce noise annoyance.

A4.2 Secondly, there is a timing threshold that significantly increases the level of noise annoyance and that is during the night. In the Executive Summary of the DfT Stage 1 Consultation for Night Flying Restrictions at Heathrow, Gatwick and Stansted it states '*noise from aircraft operations at night remains widely regarded as the least acceptable aspect of aviation noise and government has long recognised this.*'²⁴ We have responded to this consultation and proposed inter alia that:

- Night should mean night, that is to say a full 8 hour period between 11.00pm and 7.00am for the night quota period - i.e. the definition of night in the WHO *Guidelines for Community Noise* - whereas night is currently defined as just a 6.5 hour period;
- There should be a commitment to the phased introduction of a total ban on night flights, except in emergencies;
- The annual QC limit should be sharply reduced so that it begins to have some practical effect;
- There should be an immediate ban on aircraft using reverse thrust when landing at night, except in emergencies.

We believe that increasing the night quota period and reducing the number of movements will significantly reduce noise annoyance.

A4.3 The ANASE report indicated that significant annoyance was occurring at lower LAeq noise levels than 57dB. When the END noise mapping was carried out, using the weighted evening and night indicators, it showed increased areas and population within the Lden contours to those within equivalent LAeq contours. However, not only is the LAeq averaging method an unreliable way of measuring aircraft noise, the thresholds currently used to signify the onset of community annoyance are too high. The reliance on LAeq should be discontinued and an improved framework of metrics introduced as earlier described.

A4.4 A key specific threshold is the background or ambient noise level. And even more important than this is the margin between the background or ambient noise level and the noise imposed by aircraft activity. Both of those measurements should be included in an improved framework of assessment methods for aircraft noise.

A4.5 There is a good example of where the change of characteristic or nature of noise has an effect which changes the annoyance caused and this is the way in which industrial noise is rated in mixed residential and industrial areas. It should be possible to devise a similar approach that rates aircraft noise against background noise.

Q5: To what extent does introducing noise at a previously unaffected area represent more or less of an impact than increasing noise in already affected areas? (Chapter 4)

A5.1 Whenever there is a change to a flight path, or the location of a holding stack, or a noise preferential route, there will be winners and losers in terms of the noise impacts. Our longstanding view, however, based on representations that have been made to us by our members and the wider public, is that the harm inflicted upon those living in previously unaffected areas generally outweighs the alleviation gained by the beneficiaries. Our firm

²⁴ *Night Flying Restrictions Heathrow, Gatwick and Stansted: Stage 1 Consultation*, DfT, Jan 2013, para 1.2.

view therefore is that a premium should be placed on maintaining the status quo with regard to flight paths, holding stacks and noise preferential routes and these should only be changed where there is a compelling and overriding case for so doing.

Q6: To what extent is the use of a noise envelope approach appropriate, and which metrics could be used effectively in this regard? (Chapter 5)

A6.1 The first priority in seeking to address the problem of aircraft noise disturbance and the use of a 'noise envelope' approach should be to introduce an improved measurement system for aircraft noise in which the public could have trust.

A6.2 At Stansted Airport, there is a planning condition which limits the area enclosed by the 57dB LAeq16-hour noise contour to 33.9 sq km and another planning condition which limits the annual maximum number of aircraft movements. These planning conditions are intended to provide some surety that a given noise level will not be exceeded. While this is of value, it does nothing to reduce noise on a day-to-day basis or to provide incentives for operators to reduce noise. Moreover, the 33.9 sq km 'noise envelope' would in practice allow the number of flights to substantially increase even if there were just a slight reduction in the average noise produced per aircraft.

A6.3 It is difficult to see how the concept of a 'noise envelope' as outlined in the APF would work in practice, particularly at an airport such as Stansted where, if growth does occur (within the existing planning permission), an increase in the noise climate is inevitable. The use of the LAeq measurement alone, for the reasons already given, would not be a satisfactory basis for developing 'noise envelopes'. Nonetheless we welcome the Government's initiative in commissioning the CAA to develop further the noise envelope concept²⁵ and would support using measures that overcome the disadvantages outlined in our response to Q1, above, and which take account of the point made in our response to Q2 above. Local communities look forward to the time when aircraft noise becomes noticeably less. Such a benefit should not be diluted or even neutralised by an increase in the number of flights.

A6.4 On the question of an Independent Noise Regulator, for far too long airport operators have themselves been largely responsible for monitoring and reporting upon the environmental impacts of their own operations and in effect acting as policeman, judge and jury. Even in relation to implementation of the END, airport operators were given the power of competent authority and entrusted to produce their own noise action plans. We understand that the UK is the only Member State within the EU which left this important environmental task to the airport operators themselves. The result is that there is considerable mistrust amongst local communities in relation to the fairness, objectivity and transparency of the current 'in-house' arrangements for reporting upon aircraft noise and for the recording and handling of complaints from members of the public.

We submit that independent oversight of an airport's noise management is long overdue and we believe that this is a role which could be given to the CAA. This would fit well with the Government's commitment to provide the CAA with a wider environmental duty.

Q7: To what extent should noise concentration and noise dispersal be used in the UK? Where and how could these techniques be deployed most effectively? (Chapter 5)

A7.1 The advent of satellite based onboard precision navigational aids ('P-RNAV') in modern aircraft will allow more efficient flight operations with concomitant benefits to

²⁵ 'Aviation Policy Framework', DfT, Mar 2013, para 3.29.

communities living around airports and under flight paths. Aircraft are capable of vastly improved flight profiles and track keeping and this will give the opportunity to tailor flight paths to reduce noise nuisance. What is clear however is that technical advances in onboard avionics are not being implemented with sufficient urgency into operational use. If the technical advances are to help reduce adverse noise impacts the speed of implementation must be accelerated.

A7.2 Nonetheless, it is clear that P-RNAV technical advances will make it possible to either concentrate or disperse aircraft noise with consistent accuracy. It will give more flexibility to design airport approach and departure routes by either concentrating or dispersing aircraft or a mixture of both. Depending on the location, the local community and the environmental circumstances, routes and flight profiles could be tailored for minimum noise disturbance.

A7.3 One aspect is clear in our view and that is that concentration should be the preferred solution within existing Noise Preferential Routes ('NPRs'). It may also be possible to concentrate on more than just one route within the NPR to give respite at certain times, or to reduce the swathe width of the NPR if this is a better solution for the particular location.

Q8: What constitutes best practice for noise compensation schemes abroad and how do these compare to current UK practice? What noise assessments could be effectively utilised when constructing compensation arrangements? (Chapter 5)

A8.1 The Land Compensation Act 1973 needs to be amended because it allows airport operators to exploit the so-called 'golden rivet' loophole and thereby avoid their obligation to compensate local residents for property devaluation arising from airport development. An example of this relates to the approval, in July 1999, for Stansted Airport to grow from 8mppa to 15mppa. The then owner, BAA, defined the physical infrastructure which would be needed for this expansion and, under the Land Compensation Act, local residents adversely affected by the airport's near doubling in scale would be eligible to apply for compensation 12 months after the final piece of the physical infrastructure, Taxiway Echo, was completed. Passenger throughput reached 8mppa in 1999 and exceeded 15mppa in 2002 but Taxiway Echo has still not been built. In fact, it is not expected to be needed until 2019/20 and so no-one will be eligible for compensation until 2020/21 at the earliest – 20 years later than local residents expected. Taxiway Echo may never be built and, if that is the case, compensation will never need to be paid. In compensation terms, local residents around Stansted continue to live next to an airport handling less than 8mppa, which is less than half its present throughput and just a third of the throughput it reached in 2007.

A8.2 It is unsatisfactory that there is no legal obligation for an airport operator to introduce a compensation scheme to deal with the generalised blight which arises as soon as there is the prospect of major expansion at the airport. In the absence of a legal requirement, an airport operator can introduce wholly inadequate arrangements and then claim that the issue has been addressed. Furthermore – as we learned at Stansted in 2005 – there is no scope for the local community to mount a legal challenge to the terms of such a compensation scheme, no matter how unfair or unjust it is, because it is only a voluntary scheme.

A8.3 The 2003 Air Transport White Paper ('ATWP') supported a second runway at Stansted Airport and stated - with no legal force - that the airport operator would need to address the issue of generalised blight. It was left to the airport operator to define the threshold for qualification, the basis for compensation and all the terms and conditions. The result was a wholly inadequate and unfair scheme. By setting the qualification threshold at 66dBA, fewer than 500 homeowners qualified and they then had to demonstrate that they had marketed their property for at least three months on the open market at a realistic asking price, had not declined offers within 15% of that price and that they had a pressing reason to move.

A8.4 The then owner BAA would not compensate for the first 15% loss of value. All of this was against a background where it could clearly be demonstrated from Land Registry data that, in Uttlesford District alone, some £700 million had been wiped off property values as a result of the threat of a second Stansted runway, affecting some 15,000 homes.²⁶

A8.5 There should be a legal obligation upon airport operators to introduce fair and reasonable compensation arrangements when airport expansion proposals give rise to generalised blight. We hope that the Airports Commission will make this a strong recommendation and it will need to be in the interim report to allow adequate time - prior to its final report being published - for consultation on the arrangements which should be put in place, the threshold for qualification, the basis for compensation and all the other terms and conditions. We would look forward to contributing to such a consultation based on the very unhappy experience of homeowners in the vicinity of Stansted in the aftermath of the ATWP.

A8.6 The qualification thresholds at Stansted for acoustic insulation – whereby the airport operator will meet either the full cost of secondary glazing, or half the cost of double glazed replacement windows are:

- the daytime 66dB LAeq 16-hour noise contour (0700 hours to 2300 hours)
- the night 90dBA SEL noise footprint (2300 hours to 0700 hours)
- within 600 metres of sources of airport ground noise but excluding properties south of the A120 and east of the M11.

A8.7 For reasons we have explained earlier, the LAeq noise averaging system is not a suitable basis for assessing aircraft noise nuisance, especially in rural areas, and so it should not form the basis for a qualification threshold for acoustic insulation. The Government should introduce an improved measurement system for aircraft noise such as that described in the ANASE report, including comparison with background noise levels, and this should be used as the basis for compensation schemes. As an interim measure, however, the LAeq 16-hour qualification threshold should be reduced from 66dB to 55dB, the threshold specified in the WHO *Guidelines for Community Noise*, as marking the onset of 'serious annoyance daytime and evening'.²⁷

A8.8 Turning to night noise, any household exposed to aircraft noise at night above threshold of 60 dB LAmax (fast) set down in the WHO *Guidelines for Community Noise*²⁸ should also qualify for acoustic insulation. Regarding ground noise, the current qualification boundary is clearly arbitrary. We do not have any firm view on what the boundary should be, but it should be based on a proper assessment of the actual impacts of ground noise upon residents who live in close proximity to the airport, especially the impacts at night.

Q9: The Commission also invited views on Chapter 2 of the Discussion Paper

A9.1 In respect of health issues, we should like to bring to your attention the PARTNER Project Final Report²⁹, of a literature review of the health effects of aircraft noise. While the Discussion Paper mentions the ERCD 1208 Report, we believe the accumulated data from both the PARTNER and the ERCD reports suggests that sleep disturbance may well have an effect on cardiovascular health in relation to such conditions as hypertension and

²⁶ 'Proof of Evidence on Economic Impacts (Housing)', (Stansted G1 Public Inquiry), SSE, Apr 2007 - [http://www.stopstanstedexpansion.com/documents/SSE11a_Proof_Economic_Impacts_\(Housing\).pdf](http://www.stopstanstedexpansion.com/documents/SSE11a_Proof_Economic_Impacts_(Housing).pdf).

²⁷ 'Guidelines for Community Noise', WHO, 1999, Table 4.1.

²⁸ *ibid*

²⁹ 'A Review of the Literature Related to Potential Health effects of Aircraft Noise', Hales Swift, Jul 2010, for FAA/NASA/Transport Canada.

ischaemic heart disease. A meta-analysis carried out by Babisch³⁰, as well as the HYENA study³¹, found an increased likelihood of hypertension following exposure to night time noise. The ERCD report stresses the WHO recommendation that the adverse effects of noise on sleep occurs at an aircraft noise level of 32 dB L_{Amax}, indoors. Furthermore the effect of noise on endocrine disturbances resulting in obesity and diabetes does not seem to have been mentioned. Studies have shown an increased risk of obesity in those having shorter and fragmented sleep.³²

A9.2 The Discussion Paper does not mention noise from helicopter operations. Helicopters operate out of Stansted Airport and noise nuisance impacts on residents living around the airport. In June 2008, DEFRA published a document '*Research into the improvement of the Management of Helicopter Noise (NANR235)*'³³. The aims of the DEFRA study were to determine the issues and the extent of the reported problem of noise from helicopter operations in the UK, and to develop practical guidance on the management of helicopter noise, including improvements in the handling of complaints. The study also looked at comparisons with Europe, USA and Australia. The study conclusions covered nature and extent of concern, complaints procedures, rules for helicopter operations, dose/response relationships and opportunities for improvements. The study showed that there is not currently a significant helicopter noise problem across the U.K. but that reported noise problems centred on helicopter infrastructure in particular specific heliports and airports. However, the study showed that there is currently insufficient data to determine the scale of public concern and the prediction of community response to helicopter noise. Annoyance is not well correlated with generally used acoustic measurement parameters. In addition to the unique character of helicopter noise not being fully addressed by indices, there is a 'virtual noise' factor which encompasses community attitudes and fears towards operations. In general, the complaints system was considered less than satisfactory. It is often difficult to complain and the failure to act on complaints is one of the largest causes of dissatisfaction amongst the public. More study was considered necessary on dose/response relationships to better determine annoyance to helicopter noise; however as a general indication it is considered that helicopters can be up to 15dBA more annoying than fixed wing aircraft. We submit that this work be taken forward to improve the noise climate around those airports which operate helicopters.

Stop Stansted Expansion
September 2013

³⁰ 'Cardiovascular effects of noise', Babisch, Noise Health 2011;13:201-4.

³¹ 'Hypertension and Exposure to Noise near Airports', Larup et al, 2007.

³² 'Impact of insufficient sleep on total day energy expenditure, food intake and weight gain'. Markwald et al, Proceeding of the National Academy of Sciences 2013 IIO 5695-5700.

³³ <http://archive.defra.gov.uk/environment/quality/noise/research/documents/nanr235-project-report.pdf>.

PERSONAL STATEMENT OF HEALTH IMPACT OF NIGHT FLIGHTS AT MANSTON

I include the following personal statement for which I cannot supply written evidence. However, I declare it to be a true and accurate statement:

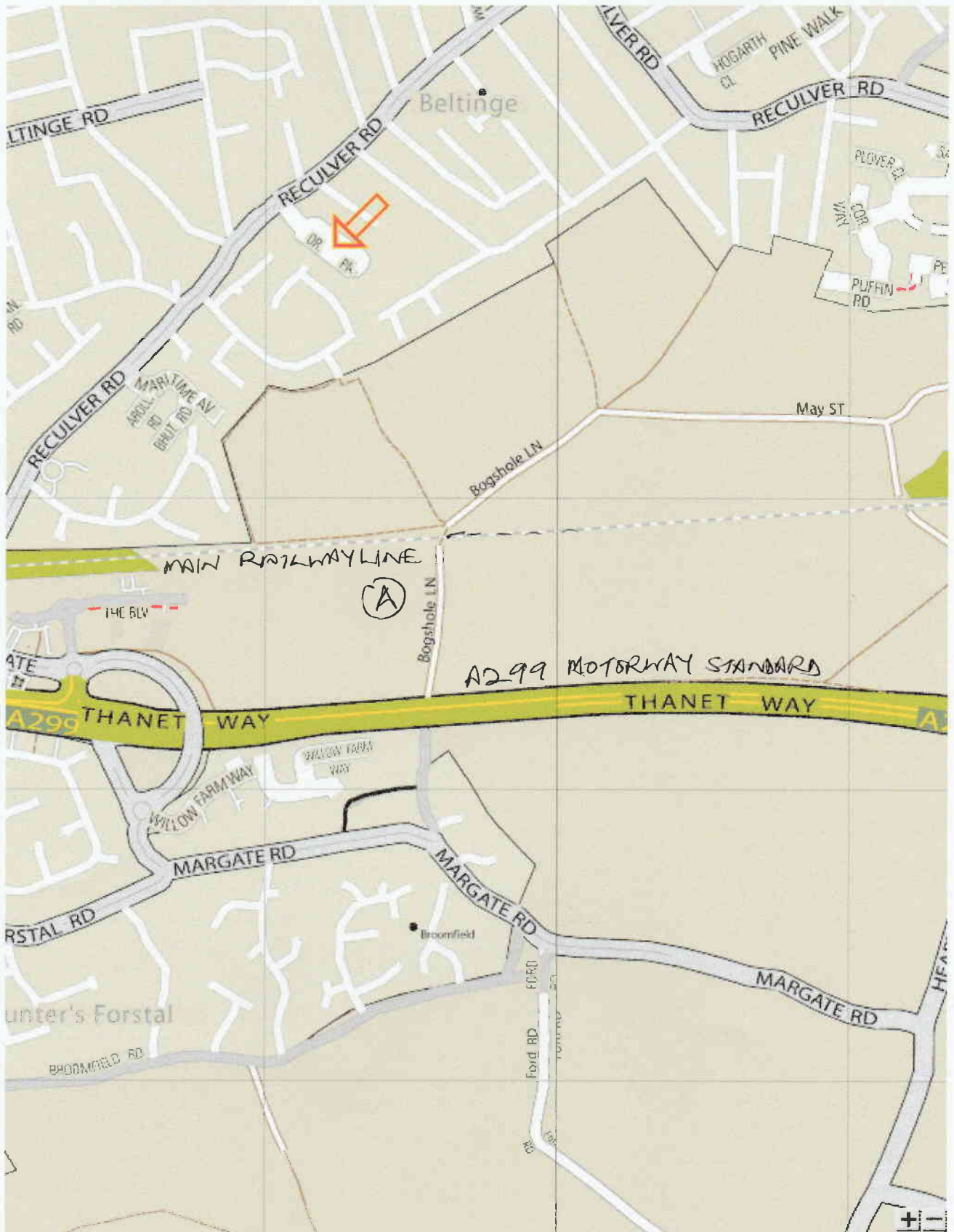
Herne Bay consists of a valley between two areas of higher ground. I live on the eastern high ground, directly under the flight path to Manston Airport. When aircraft pass over my house heading in to land at Manston, I can clearly read the numbers on their fuselage. The noise is loud enough (with doors and windows closed) to render my radio/television impossible to hear at normal volume.

In 2004-5 the then operators of Manston Airport began operating flights at night, outside of the permitted time envelope. Aircraft were landing after 11.30pm and at around 6am. I was at the time a very successful senior manager of a university: a job which required commuting significant distances – a common aspect of executive employment in East Kent – and thus early rising. I also needed the full 8 hours' recommended sleep. However, in 2004-5 having gone to sleep at an appropriate hour I would then be awakened by aircraft noise. Or (and sometimes also) I would be awakened by aircraft noise an hour before I needed to be, and understandably unable to go back to sleep.

Insufficient sleep in combination with the heavy and unremitting demands of a management job, impaired my [REDACTED], which is the fundamental feature of [REDACTED] - a debilitating illness which I contracted in [REDACTED]. As this is a [REDACTED] [REDACTED], in April 2006 my employer asked me to take early retirement in order that they could replace my essential role in their operation. My health has prevented me from returning to employment since then.

Susan Carroll
4 February 2019

Assessed location (1)



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Landscape
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(A) location of baseline assessment.

Assessed location (ii)



Ⓐ location of baseline assessment: main thoroughfare through town

Assessed location (iii)



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Ⓐ Location of baseline assessment.