

Question 4
<p>Respondents</p> <p>a) Specific: 2M, CAA, EANAG, Hacan, HAL, Hammersmith & Fulham Council, Hillingdon Council, Kensington and Chelsea Council, LAANC, RHC, Richmond Council, Wandsworth Council, Windsor & Maidenhead Council, Mayor of London, Gatwick (15)</p> <p>b) Other: Reports submitted by AEF, NATS and Virgin Atlantic that are not question specific</p>
<p>Question</p> <p>Are there additional operational procedures for noise reduction and respite at Heathrow that could be introduced within the next ten years; or are any such noise improvements being held back for the development of a third runway?</p>
<p>Background</p> <p>HAL's revised proposal for a third runway includes a number of options for reducing air traffic noise by changes to existing operational procedures. We would like to learn what the net benefit would be from all the proposed changes; and whether any of the procedures could be introduced without a third runway.</p>
<p>Template updated 15 Dec 14 PJW</p>

2M, Hillingdon Council and Kensington and Chelsea Council

The CAA Managing Aviation Noise report suggests that issues such as a later deployment of landing gear and reduced landing flap setting (page 38, 39) could result in reductions in the noise experienced by the overflowed local communities. These two measures could be investigated for early implementation because they do not appear to be linked to a need for an increase in runway capacity.

The use of steeper glideslopes is said to be possible both on the existing runways as well as any new runway by 2030 (HAL noise submission, para 4.3.2). Again this does not appear to be linked to a need for an increase in runway capacity.

The use of displaced runway thresholds for noise reduction is associated with the provision of a new runway (HAL noise submission, para 4.2.2). Existing runways are said to "require significant modifications", such as new taxiways, to enable significant displacement of the thresholds. It is presumed that this will only occur as a noise reduction measure if the airport is granted expansion.

The HAL noise submission assumes the use of displaced runway thresholds and steeper glide-slopes in their future noise modelling work (3.2 glideslopes in 2030, increasing to 3.5 in 2040). However the CAA Managing Noise report raises concerns about these issues:"

- a displaced threshold whilst providing noise benefits, could have potential impacts on capacity, operational resilience, air quality" (page 41)
- "the additional benefits of 3.2 degree approaches are relatively small" and "even 3.2 degrees could interfere with the ability to use low power/low drag and reduced landing flap techniques" (page 43)

If the measures that have formed the basis of future noise modelling work to do not deliver the reductions as assumed or have knock on detrimental impacts on other issues such as local air quality, it will be the local communities who bear the brunt of the ensuing detrimental impacts. It would be helpful if the

Parliamentary Group could investigate the actual deliverability of noise reduction measures included in the HAL submission.

CAA

The CAA's recent publication 'Managing Aviation Noise' (CAP 1165), summarises our latest understanding on operational measures to reduce aircraft noise.

It highlights that departure measures tend to re-distribute noise rather than reduce it, however, re-distribution may provide a net benefit of fewer people exposed to noise, albeit with winners and losers.

There are, however, a number of opportunities to reduce approach noise many of which are already exploited to varying extents. Approach noise is particularly relevant to Heathrow, since the airport location, runway direction and prevailing winds all result in more people being affected by approach noise than take-off noise. Measures that may be able to be adopted in the short to medium term include:

- Continuous descent approaches (CDA)
- Low power/low drag procedures
- Reduced landing flap
- Slightly steeper approaches

None of these measures are dependent on developing a third runway and are not being held back for it.

Looking longer term, two segment approaches and displaced landing thresholds offer even greater potential benefits. A two segment approach would utilise a steeper intermediate approach segment, around 4.5°, before transitioning back to a conventional 3° approach angle at around 1,500ft or 5nm away from touchdown. A displaced or inset landing threshold effectively moves approach noise in, towards the airport. Whilst a two segment approach would potentially reduce noise beyond 5nm, a displaced threshold offers the greatest benefits at shorter distances, less than 5nm. There is therefore the potential to combine these two measures and provide a noise reduction throughout the approach phase.

These measures would require significant aerodrome infrastructure changes and in the case of two-segment approaches changes to both the approach speed of arriving aircraft and potentially requiring larger gaps between successive arriving aircraft, reducing the overall landing rate. This would have an impact on the number of aircraft arriving per hour.

Neither measure is straight forward and will take more time to Implement, and may impact on the airports capacity, and as such are unlikely to be implemented without expansion facilitating them. Other airports have already implemented some of these measures, in part because they have the scope to accept a reduced landing rate. At Amsterdam Schiphol, full continuous descent approach compliance is achieved during the late evening, night and early morning. Frankfurt airport introduced a displaced runway threshold and a slightly steeper angle as integral elements of its fourth runway coming in to operation.

The potential to introduce noise respite, or rather to share noise more fairly across affected communities has not been fully explored, despite being used, for example, to provide landing noise respite through westerly runway alternation at Heathrow since the early 1970s. The forthcoming introduction of Performance Based Navigation (PBN) creates new opportunities, since departure and arrival routes will no longer be dependent on ground-based navigational beacons.

The airspace around Heathrow is, however, particularly congested and the interactions between airports may limit the extent to which noise sharing can be facilitated.

EANAG

A steeper climb out of the airport would provide some reduction in the noise suffered by residents.

Hacan

The introduction of quieter planes is not dependent on a third runway. Nor is the use of steeper angles on approach or steeper departures. Nor, crucially, is the introduction of respite for areas a little further away from Heathrow. Heathrow is proposing what it calls ‘the respite option’. This would ensure – even if a third runway is not built - few areas would get all-day flying and most areas will get respite for at least 50% or 75% of the time: figures K9 - K12 of the report: [01: Air and ground noise assessment](#)

Under the respite option, a sharing out of flight paths would be possible until around 5 miles from the airport; that is about as far as Windsor to the west and Isleworth to the east. And, on departure, it becomes possible 3 miles out from the airport. This change is made feasible by the new technology which can guide planes much more precisely. Aircraft will not need to join their final approach path until about 5 miles from the airport. At present they are required to join it much further out and can be lining up with the runway over 25 miles from the airport.

It is this long concentrated approach that has caused so many problems in recent years. HACAN has done surveys which show there can be over 40 planes an hour passing over the Oval or Clapham at heights of around 3,500 feet. Places, like Peckham or Brockley, even further east, are equally plagued by this constant noise. The same applies to people living west of the airport. Moreover, none of these areas get the runway alternation that West London enjoys when planes switch runways at 3pm to give many people some respite from the noise (although not always those living between the two flight paths).

If the joining point was only 5 miles from the airport, it would allow the planes to fan in from different angles, both sharing out the noise and allowing everybody some respite from it. Inevitably, this would bring noise to a few new areas and care would need to be taken over this. It is worth emphasizing again this respite option, although set out by Heathrow in the context of a thirds runway, is not dependent on it.

HAL

We are committed to employing smarter operating procedures to reduce noise impacts on residents.

We are actively pursuing a number of initiatives aimed at reducing noise impacts which all involve close engagement with NATS, CAA, airlines and importantly local community representatives. We have listened to residents’ concerns and sought to develop our approach in response to that. For example, we have used the opportunity that the modernisation of airspace in Europe and the UK over the next five years offers to explore the concept of providing predictable respite from noise. We are currently trialling options for both arrivals and departures and working with local communities to identify changes that could benefit them. The results of these trials will be used to inform and shape a wide public consultation as part of the London Airspace Management Programme (LAMP) expected in 2016.

We are also committed to trialling steeper approaches, meaning that planes are higher and quieter when they approach the airport. We currently have plans to run trials from September 2015.

One change that we are not planning for the existing two runway airport is “displaced thresholds” as this requires a significant infrastructure alteration (e.g. the runway exit taxiways would all need to be realigned) and is not economically viable without growth to support the investment.

Hammersmith & Fulham Council

We consider that it would be reasonable for Heathrow to introduce measures such as faster introduction

of quieter aircraft, increased angle of approach of landing aircraft and use of displaced landing thresholds, consistent use of runway alternation to provide predictable periods of respite, phasing out of night flights and stricter use of Continuous Descent Approach to help improve the noise climate around the airport. We also would want the 480,000 annual air traffic movement limit to stay in place and not be removed.

Hillingdon Council

See 2M

Kensington & Chelsea Council

See 2M

LAANC and Wandsworth Council [text colour: black- common to both submissions, green-LAANC only, red-Wandsworth only]

The CAA Managing Aviation Noise report suggests that issues such as a later deployment of landing gear and reduced landing flap setting (page 38, 39) could result in reductions in the noise experienced by the overflowed local communities. These two measures could be investigated for early implementation because they do not appear to be linked to a need for an increase in runway capacity.

The use of steeper glideslopes is said to be possible both on the existing runways as well as any new runway by 2030 (Heathrow Airport Noise submission – AMEC report - para 4.3.2). Again this does not appear to be linked to a need for an increase in runway capacity. However we would caution about the real world effectiveness of these changes. In respect of increased angle of descent the CAA advise in its recent 2014 Managing Aviation Noise report:

"the additional benefits of 3.2 degree approaches are relatively small" and "even 3.2 degrees could interfere with the ability to use low power/low drag and reduced landing flap techniques" (page 43)

The use of displaced runway thresholds for noise reduction is associated with the provision of a new runway (HAL noise submission, paragraph 4.2.2). Existing runways are said to “*require significant modifications*”, such as new taxiways, to enable significant displacement of the thresholds. It is presumed that this will only occur as a noise reduction measure if the airport is granted expansion.

If the measures that have formed the basis of future noise modelling undertaken by Heathrow Airport to do not deliver the reductions as assumed or have knock on detrimental impacts on other issues such as local air quality, it will be the local communities who bear the brunt of the ensuing detrimental impacts. It would be helpful if the Parliamentary Group could investigate **the extent to which the claimed reductions in noise contained in the HAL submission are likely to be translated into real world perceived noise reductions on the ground for communities both close in and further out from Heathrow. the actual deliverability of noise reduction measures included in the HAL submission.**

We do not believe that the introduction of quieter planes is not dependent on a third runway.

Richmond Heathrow Campaign

Chapter 4 (Mitigation Strategy) in HAL’s noise assessment sets out a number of proposals for reduction and respite from air traffic noise, ground noise and road traffic noise.

Ground and Road Noise Proposals

In the time available we have been able to concentrate only on air traffic noise, which is the key noise impact on communities within the London Borough of Richmond upon Thames. We nevertheless

recognise that communities more adjacent to Heathrow are affected by ground and road traffic noise associated with the airport.

In our view, too little attention has been paid to the impact of ground and road traffic noise, particularly where the areas affected also suffer from air traffic noise. We therefore ask the APPG to ensure that ground and road noise are not overlooked and that there is early engagement with the communities likely to be affected (including those areas immediately adjacent to the proposed third runway) to re-assure them that the potential impacts are being taken seriously.

Air Traffic Noise Proposals

There are seven proposals for air traffic noise reduction and respite, which are addressed in the following sequence:

- quieter aircraft
- displaced runway threshold
- runway (mode) rotation
- continuous descent approach
- steeper approaches
- night flights alternation
- airspace options

We have commented on the prospects for quieter aircraft in response to Question 3 and say no more here, beyond repeating that marginally less noisy aircraft are evidently being introduced already and are in no sense linked to or conditional upon the development of a third runway at Heathrow (i.e. less noisy aircraft will continue to be introduced regardless of whether or not a third runway is developed).

We comment on airspace options in response to Question 5 and on runway (mode) rotation and night flights alternation in response to Question 7. We say no more here on these three proposals, all of which are discussed by HAL only within the context of the development of a third runway.

As regards displaced runway threshold, this would apply only to the third runway and would therefore apply only if a third runway were to be developed. The scale of the benefit is not quantified but would appear to be confined to those communities that currently do not experience air traffic noise from the existing northern runway. The benefit also appears to be confined to arrivals: would there be any consequent disbenefits for third runway departures?

The remaining two proposals to consider here are continuous descent approach and steeper approaches. In our view, neither measure is dependent on a third runway and both measures could be introduced before a third runway came into operation in 2025. The scale of the benefits are not quantified but would appear to be confined to (a) arrivals and (b) areas outside the 57 decibel noise contour (i.e. areas where air traffic noise is said to be not a problem, according the 57 decibel noise contour orthodoxy). What is not clear is whether there is any disbenefit for areas within the 57 decibel contour as the approaching aircraft complete their descent under the two procedures.

In so far as less noisy aircraft, continuous decent approach and steeper approach could be introduced before 2025, we consider that the individual and collective benefits should be quantified in order to compare the noise situation in 2025 with the noise situation with three runways in 2030.

Richmond Upon Thames Council

The scope for noise reduction from additional operational procedures seems more likely than from technological ones. However these procedural proposals require the greatest scrutiny, as they appear to reduce the margins of safety. We are with the CAA on this one, that safety is paramount. However laudable it maybe to find ways to reduce noise levels, it must not be at the expense of safety. Provided that safety is not compromised, it would be eminently sensible to introduce any procedural improvements as soon as possible, rather than to wait for the extra capacity of a 3rd runway.

Royal Borough of Windsor and Maidenhead

RBWM support the assertions put forward by LBH, but would advocate that one of the greatest operational procedures that could be implemented would be the abandonment of the Cranford Agreement at the earliest opportunity. This is an historic agreement currently prevents easterly departures from the northern runway: in effect, preventing respite alternation from landing aircraft (noisier than arrivals) on the northern runway approach - with all easterly departures having to take off from the southern runway.

Mayor of London

4.1. Some options are worthy of further investigation; however it should be recognised none is a panacea and will not fundamentally address the problem of severe noise exposure by Heathrow.

4.2. An example is increase the rate of aircraft climb and decent – noise at ground level is reduced because aircraft spend less time at lower altitudes. However, this also entails greater engine thrust and so increases emissions. Furthermore, this is less feasible for larger aircraft – and there are operational complexities if one tries to use different glide slopes for aircraft using the same runway.

4.3. Displaced thresholds – moving the point at which aircraft take-off or land to a point part-way along the runway – can help, but only is only a realistic option for smaller aircraft who do not require the full runway length (and which also tend to be the less noisy).

4.4. Time-based separation – to be introduced by NATS in Spring 2015 – could help in the margins by safely reducing the distance between aircraft in strong headwinds; this could slightly reduce the need for flights to encroach into the night period when Heathrow suffers delays.

4.5. Beyond such measures, more can be done to incentivise quieter aircraft and stricter rules that penalise noisier aircraft – or ban them altogether.

Gatwick

The noise impacts of Heathrow are already so large that GAL considers that Heathrow should already be taking every step possible to reduce its noise impact. For example in relation to its proposed 3rd Runway to the North West Heathrow are proposing to increase angles of descent of arriving aircraft and displaced landing thresholds on both the proposed runway and existing two runways because of the purported noise benefits these measures will offer. If there are material noise benefits from these sorts of measures, GAL would expect Heathrow to work to bring forward such measures irrespective of its plans for a third runway.

Similarly Heathrow's recent Third Runway public consultation has reported a strong support for improvements to operational arrangements that offer greater respite to people affected by noise. Whilst there is a careful balance to be struck in offering respite because it would lead to changes to legacy airspace arrangements, it is presumed that if there is strong support for this from local communities that Heathrow should pursue it. Gatwick suspects that support for respite is likely to come mainly from those who are

currently affected by noise and that it would not necessarily be supported by communities who would stand to be more affected by noise as a result of changes.

There may well be some measures that can only be introduced with a third runway. These would include for example changes to flight paths.