

CHILTERN COUNTRYSIDE GROUP

'Preserving the peace of the Chilterns'



www.chilterncountrysidegroup.org

email: info@chilterncountrysidegroup.org

correspondence to: 65 Grove Road, Tring, Herts. HP23 5PB. 01 442 824832

SUBMISSION FROM CHILTERN COUNTRYSIDE GROUP

**This document is submitted on behalf of the Chiltern Countryside Group
to the Airports Commission Aviation Discussion Paper 05 Aviation Noise 2013**

Written and researched by the Steering Group September 2013

The Chiltern Countryside Group supporters are people who value the special character of the Chilterns and its Area of Outstanding Natural Beauty and seek for this to be preserved for the benefit of all.

The Steering Group comprises aviation, transport & noise consultants, commercial pilots
& professionals in finance, technology, media, healthcare & education.

Written response from the Chiltern Countryside Group to the Airport Commission's Discussion Paper 05 Aviation Noise September 2013

The Chiltern Countryside Group (CCG) welcomes this opportunity to contribute to the Airport Commission's Discussion Paper 05 Aviation Noise. We outline below our comments which we would ask the Commission to take into account in their review of this subject and in any further reviews and consultations by the Commission, particularly where these are linked to consideration and implementation of the UK's night flying regulations and regime.

The Group believes that whilst aviation remains firmly part of people's lives in the 21st century, the world's population holds collective responsibility for reducing their need to travel and that when we do so, we should aim to choose the most environmentally-sustainable transport mode available. With this qualification, therefore, we respond to the Commission's review.

The CCG's mission statement is 'Preserving the peace of the Chilterns'. However the operation, impact and benefits of aviation is not restricted to this area of SE England; indeed, the Commission's brief which: '*examines the need for additional UK airport capacity and recommends to government how this can be met in the short, medium and long term*' is thus, specifically consulting on a national approach to aviation. We, therefore, respond to this document from a broader perspective which has been informed by our experience of aviation in the Chilterns.

Whilst within this paper, the CCG comments on the noise impact of aviation generally, we have focused more specifically on the significant and hugely detrimental noise pollution caused by night time operations.

The Department for Transport (DfT) consulted on Night Flying Restrictions at the 3 designated London airports of Heathrow, Gatwick and Stansted in April 2013. The CCG is aware that planning restrictions apply to London City airport which are therefore regulators of that airport's night operations. We find, however, a serious anomaly in the DfT's present approach, as of April 2013, in that **London** Luton Airport, which is currently seeking to double passenger numbers, and is identified as a **London** airport by the DfT, the Civil Aviation Authority (CAA), the National Air Traffic Service (NATS) and marketed as such by the airport itself, is still not regulated for night time operations by designation.

This is a serious omission and evidence of a less than comprehensive and equitable approach by the DfT to the challenges and benefits of night time operations in the South East. It should be rectified forthwith by commencement of the process which will give London Luton's night time operations the same regulatory parameters as all other London airports.

Throughout this paper, the CCG recognises night time hours as those identified by the European Commission (2300-0700).

Since its foundation in 2008, the CCG has made submissions to Government, to the Parliamentary Transport Select Committee, the Department for Transport, the Civil Aviation Authority and the National Air Traffic Service's different aviation Inquiries and Consultations. The Group has also made submissions to the most recent Noise Action Plans (NAPs) Consultations conducted by Heathrow Airport and London Luton Airport (LLA).

All the Group's submissions are posted in full on the CCG website:
<http://www.chilterncountrysidegroup.org>

CHILTERN COUNTRYSIDE GROUP RESPONSE TO THE AVIATION COMMISSION'S DISCUSSION PAPER 05 AVIATION NOISE

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Acknowledgements:

The CCG Steering Group is grateful for the invaluable professional knowledge and expert contributions to the compilation of this paper by Capt. Gwyn Williams and Prof. Colin Waters.

Professional background information:

Captain Gwyn Williams

Capt. Gwyn Williams has 40 years experience in aviation both as a military and civil pilot.

A graduate of the RAF College, Cranwell, he trained as a fast-jet pilot and saw active service in the Middle East and an operational exchange tour in North America in the air defence roll.

He qualified as a flying instructor and subsequently commanded the Advanced Flying Squadron of the RAF Central Flying School training instructors. His final posting was to the MoD Inspectorate of Flight Safety.

After gaining a civilian Airline Pilot Licence, Capt. Williams acted as a pilot instructor and examiner, flew business jets and then schedule and charter flights with several airlines operating B757, B777 aircraft and Concorde for its last 10 years in service.

As a Flight Operations and Training Inspector for the Civil Aviation Authority he was responsible for the monitoring of a number of major UK airlines; for the testing and approval of flight simulators and for the training of the airlines' own training captains.

Professor Colin Waters B.Sc(Eng) MSc C Eng MRAeS FIOA Noise Consultant to CCG

Prof. Waters is Principal of Colin Waters Acoustics and has professional consulting experience in this field for over 40 years. He has been a Director of Ove Arup and Partners Ltd with responsibility for environmental acoustics of that firm. He has carried out and directed major infrastructure environmental acoustics projects in both the national and international field.

Prof. Waters has advised the Chinese Civil Aviation Authority on associated airport noise problems and their assessment. He is Visiting Professor of Airport Environmental Acoustics at Manchester Metropolitan University.

KEY COMMENTS

1. Growth and achieving an environmental balance.

- The CCG is pleased to note that Government recognises and supports a framework for the aviation industry which only allows growth where balance is maintained between benefits and costs, including that of climate change and noise impacting communities¹. The CCG firmly believes that growth is not an option until properly regulated environmental measures are satisfactorily in place which mitigate against impact. This is particularly applicable for night flights and where airports and operators seek expansion.
- Noise pollution reduction should be a key element of Government and aviation's environmental targets. This should include a reduction in the number of night flights operating at all UK airports, and particularly, those sited near large conurbations and/or over sensitive landscapes, such as Areas of Outstanding Natural Beauty (AONB).
- Improved operational procedures and new technology can and should facilitate better use of existing capacity, reduce or eliminate stacking and make a positive contribution to minimising local environmental impacts, particularly noise over densely populated and sensitive areas.
- *'The routes used by aircraft and the height at which they fly are two significant factors that affect the noise experienced by people on the ground... its [Government] overall policy [is] to limit and where possible reduce the number of people adversely affected by aircraft noise.....Within the countryside, the DfT and the CAA has legal duties to have regard to the purposes of National Parks and Areas of Outstanding Natural Beauty and must therefore take these into account when assessing airspace changes.'*² These statements must be translated into practice so that they are not applied simply to airspace changes, but to standard operational procedures.
- Government should be in on-going dialogue on national and regional transport planning infrastructure with relevant bodies, including those such as AONB Conservation Boards, so that 'joined-up' measures are put in place to reduce adverse environmental impact on sensitive areas from all modes of transport, including aviation.
- Proper analysis and impartial modelling based on scientifically proven methodology needs to be carried out to underpin any perception of aviation growth requirements, not just in the SE, but for the whole of the UK. Only then can accurate assessment be made of where needs are and from that, what constraints apply and how these might be overcome.
- International aviation operations need to be considered in a more environmentally-sustainable way, not just simply from a UK perspective, but from a global standpoint.

2. Is growth necessary?

- However, the CCG finds that Government makes an unsubstantiated assumption that aviation growth is necessary, or indeed, desirable. We find it a fallacy that growth of the aviation industry is essential to drive the UK's future economic prosperity. There are multiple and increasingly more sophisticated ways of virtual meeting and communicating, which are less expensive, less time-consuming and have a far lower carbon footprint. Actual and potential users are turning to alternatives with increased take-up of electronic communications, pressure on disposable incomes, increased public awareness of environmental implications and operational costs, including fuel. The priority should be to make UK's airports better, but not bigger, for all, not just for users.
- The CCG finds it extraordinary that the DfT is not yet able to perform key analytical functions such as the separation into day and night for annual forecasts of growth at airports.³ We suggest they need to make this a priority task. There is currently much heated debate publicly and privately about the future needs of UK aviation. If the DfT is unable to supply accurate basic information which identifies day and night as separate entities, then we find extreme challenge in any reliance upon projected growth figures supplied by Government, or the aviation industry itself.
- The CCG finds such basic modelling a key requirement of any analysis of growth forecasting from the

1 Airport Commission Paper 05 (pt 5)

2 APF March 2013 (3.31)

3 DfT Night Flying Restrictions at Heathrow, Gatwick and Stansted Stage 1 Consultation April 2013 (5.6)

DfT. **This data is essential to the deliberations of this Commission.** We fail to see how such a major study can possibly be accurate without this level of detail.

3. Has a balance been achieved?

- We also find that whilst it is admirable for Government to seek to '*maintain*'⁴ a benefit/cost balance, we suggest that such a balance is yet to be achieved, with the considerable growth in air traffic over recent decades not having been tempered with equitable measures to contain adverse impact on overflowed communities.

4. A sustainable approach to aviation

- **4.1. Stability and a National Transport Strategy:** Government is unlikely to achieve the stability it seeks to promote for the aviation industry until a properly researched and designed overall national Transport Strategy is agreed, incorporating all transport modes and appropriately integrating major proposals. (For eg. High Speed 2 rail and links to airports) Only then can such proposals for an individual project or mode be set within a wider strategy which aims to (a) meet the UK's genuine needs and (b) gives an optimum environmental balance. From this, Government can minimise risk and is more likely to ensure that available funds are deployed in the wisest, most efficient and effective manner.
- **4.2 Approach to issues around aircraft noise:** It is of extreme concern that a firm consensus on how to approach issues around aircraft noise has yet to be achieved.⁵ **This must be a priority before any decision is made on how, or where, any future expansion takes place, if indeed, this is found to be essential.**
- **4.3 Connectivity:** The CCG welcomes the Government's recognition that, already, the '*UK is one of the best connected countries in the world*'.⁶ This fact should give Government confidence that what is needed for the future is sustainable improvement to more efficient use of airspace coupled with initiatives to make the UK's airports better for all; and further, to recognise this need not necessarily equal larger, or more.
- **4.4 Nationally protected landscapes:** Making better use of the UK's current and any future runway capacity should be environmentally sustainable and must not be at the expense of overflowed communities or locally significant and/or nationally protected landscapes, such as Areas of Outstanding Natural Beauty (AONB) and National Parks.
- **4.5 Regional airports:** Government identifies that impact on overflowed communities by regional airports can be significant. However, **it consistently fails to recognise that some communities and protected landscapes are impacted negatively by operations of more than one airport.** Indeed the impact of one airport's operations upon another's, as in the Chilterns, exacerbates the noise impact by placing constraints upon for eg. how quickly an aircraft can climb on departure. The location and use of stacking 'holds' imposes constraints on noise reduction which would otherwise be perfectly achievable and beneficial to both airlines and overflowed communities.
- Such a narrow view and inconsistent, conflicting strategies fail to give the public confidence that the DfT and the aviation industry hold a genuine desire to reduce the environmental pollution of aviation nationally.
- It is therefore imperative that noise reduction measures are considered and are consistent for all airports and operations, and particularly where, as in the airspace of the SE, there is interplay between more than one airport's operations.
- **4.6 Use of airspace:** It is to be hoped that in reviewing use of airspace, the Commission and the CAA will use **improved operational procedures and new technology to contribute to better use of existing capacity, but equally of importance, to facilitate a positive contribution to reduction of local environmental impacts,** particularly over densely populated areas and those which are sensitive, such as AONBs and National Parks.

4 ibid

5 Airport Commission Paper 05 (1.4)

6 DfT Night Flying Restrictions Stage 1 Consultation April 2013

- Intelligent planning of strategic air space around airports so that air traffic controllers (ATC) can, and do, implement the best environmental balance for both aircraft and overflown community should be a priority for both Government and the aviation industry.
- It is encouraging that in 2010, British Airways, NATS and BAA collaborated successfully to operate the UK's '*first perfect flight between Heathrow and Edinburgh.*' This was '*the most fuel efficient through efficient ground taxiing, aircraft climb and descent and optimal flight profilesaving 350kg of fuel and a tonne of CO2 [total of 10%] compared to a normal flight on the same route.*'⁷
- Aviation professionals identify that better flight management as above which involve air traffic controllers has potential to reduce aviation emissions by 5-8%. Having demonstrated it can be done, these improvements can now be integrated targets in airports' Master Action Plans for carbon emission and noise reduction. Government could help to progress this more rapidly.

5. Is the physical extent of noise impact adequately evaluated?

- The CCG finds the DfT takes too narrow a view of the extent of noise impact from aviation, which from our experience in the Chilterns, occurs regularly some 17-30 miles from the operating airport. Most people would not regard these communities as 'local', yet the noise impact is considerable, as is clearly revealed in the different airports' annual complaints reports and the experience on the ground.
- **5.1 Noise Maps** It is well established that noise impact is experienced beyond noise maps or contours. This is especially true at night, when overflown communities are generally silent and noise impacts tend to carry, and last longer. The CCG therefore finds noise maps of very limited value in assessment and management of noise impact.
- To realise a more accurate picture of real disturbance, these must be combined with other factors, such as records of complaints which may well be outside the noise maps, track keeping and aircraft height, number of overflights etc.
- **5.2 Noise Action Plans** The CCG finds it deeply unsatisfactory that the major airports of Heathrow, Gatwick and Stansted were allowed by Government to rely upon aircraft movements in 2006 in their approved Noise Action Plans (NAP) of 2011. We welcome the action now being taken that movements in 2011 should be incorporated in these airports' review of their NAPs for 2013.
- However, we question why it remains necessary to use movements of 2011; they will be 2 years' out of date even when the revised NAP is agreed. Airports have their 2012 movement figures in place already, or if not, then this should be a priority for them, so we see no justifiable reason why 2012 figures cannot be used for NAPs prepared in 2013.
- **The CCG makes a formal request that the Airport Commission sets in motion statutory requirements for airports to use the most recent aircraft movement figures in their NAPs. The Group finds no justifiable reason why these should not normally be the previous year's figures.**
- This Commission has a prime opportunity to ensure that the DfT's Aviation Appraisal Guidance is relevant, rigorous and meets current, and potentially future, objectives. It is also a key opportunity to ensure that webTAG guidance is 'state of the art' and not lagging behind the needs of the 21st century transport industry. The CCG expects these opportunities to be grasped wholeheartedly.

6. Principles of noise evaluation and measurement

- The concept of setting a 'Noise Envelope' around the major airports is mooted by the DfT with a view to defining an area within a limiting noise area. Aviation growth up to this limit would be permitted.

- This sounds very similar to the limit on Heathrow noise set by the various Public Inquiries that the area within the 57 dB(A) $L_{eq,daytime}$ not be increased. Further detailed questions need to be answered before such a concept can be properly considered.
 1. What metric or methodology would be used to define the envelope.
 2. Would the bounds of the envelope exceed the present noise limits (eg the 57 dB contour at Heathrow)
 3. What constraints would be placed upon the airport to maintain the envelope.
 4. What sanctions would be available to prevent breaking of the envelope
- One aspect of the airport envelope concept would be that as technology or operational procedure improved the noise output of the individual aircraft or the overall airport performance then airport growth would be permitted. Such a concept would not allow for a reduction in airport noise but would seem to be designed to consign an area to continued noise pollution without any intention to provide overall mitigation.
- Night noise is accepted as being a major environmental issue and one that causes significant environmental problems, yet no real attempt is being made to lessen these.
- The Government has issued air navigation guidance to NATS to seek to concentrate routes so as to avoid overflying populated areas as much as possible. This approach completely misses the point that such routes will thus fly over the quietest areas and thus have the most impact over the low ambient levels. Noise from down the route operations and from stacking procedures will continue to have significant impact and this problem is not addressed in the document.
- The DfT places some weight upon improved technology reducing the problem of aircraft noise. However, noise reducing technology may be at odds with other environmental concerns. One example is the open rotor technology that offers significant fuel advantage but will increase the down the line noise of overflying aircraft. Technological changes are not a local, regional or even national consideration. Aviation is a global concern and technological change needs agreement and support at this level. Changes are very slow in being implemented. The planned reduction in aircraft noise set out by ICAO by 2020 has shown that technological changes cannot reach the targets. It is operational change that must be implemented. Low energy approach, continuous descent, total route planning from 'Gate to Gate' are some of the changes that must be made.

7. Noise Metrics

- Impact and intrusion of aircraft noise is recognised by Government and the aviation industry as significant but is not adequately addressed. Measurement of noise is averaged out over a 24 hour period, which will give a completely different reading of impact to that which is experienced on the ground. For example, *'measurement of aircraft noise in relation to tranquility is relatively undeveloped and no universally accepted metrics or measuring methodology exist for the assessment of tranquility'*.⁸
- The challenge to the aviation community in the examination of impact of the noise from exposure to aircraft noise operations is to define a metric that relates the physical noise exposure to the subjective response. Those that are used have tended towards a method that can be incorporated into a Planning procedure. This, almost by definition, needs a line to be drawn on a plan. The inference then becomes that if you are on one side of the line all is well but if you are on the other then you are not. As a result the UK consideration of airport noise effect is related to the 57 dB LAeq, 18 hr. noise contour. This level being considered the *approximate exposure for the onset of significant community annoyance*.
- This approach has its place but it is not in the assessment of noise exposure in all circumstances. It takes no notice of the existence of non aircraft noise; it does not accept the influence of individual loud noise, it does not accept that aircraft noise can be a significant adverse effect at some distance from the airport; it offers no information that is helpful to prospective residents. All it does is offer a very broad brush comparative index of one airport against another, or one situation against another.
- The response to aircraft noise is an extremely complex psychoacoustic situation and in addition to the physical noise parameters there are a large number of non-acoustic phenomena that need to be considered.

- This is a unique opportunity for British scientists and aviation experts to provide a model which could then be marketed worldwide, as internationally, nations recognise the adverse impact on health and well-being of significant noise intrusion on human life, especially if sleep is disturbed continually (WHO). In their response to the above Consultation (June 2008), the CCG suggested the commissioning of this valuable and environmentally important research to one of our world-class universities, such as Cambridge, UMIST or Cranfield.⁹
- It is disappointing and short-sighted that, so far as we are aware, even some 5 years later, no consideration or evaluation has been given or made on this important point.

8. Expansion at Heathrow.

- The CCG notes that Heathrow has a limit on airport movements to 480,000 per annum. 2011 figures stood at 476,000 which is the same as in 2007 and number of movements dropped below this in 2009 and 2010.¹⁰ This does not support any argument that growth will inevitably occur at the airport and that movements in the night time period must help to support this.
- Heathrow's operations hugely pollute overflowed communities. Figures taken from the DfT's draft Aviation Policy Framework consultation (October 2012) showed they account for *'approximately 70 per cent of people in the UK exposed to average noise from airports above 55 decibels. More than one in four people exposed to this level of noise around European airports lives near Heathrow... .. Heathrow's noise impact easily exceeds the combined impact of all the other hub airports in Western Europe, despite each having approximately similar numbers of movements'*.¹¹
- These are truly appalling statistics, although not very surprising to those of us who are overflowed by Heathrow operations. Clearly this is strong evidence against any further growth, both at Heathrow and in the SE, until robust and statutory measures are in place to immediately contain, and urgently, significantly reduce noise impact on those communities.
- The CCG accepts that a good proportion of this noise pollution will be during day time hours. However, whenever it occurs, it is hugely damaging to overflowed communities. There should be lower limits set for 'acceptability' at night than during the day, when some noise from aviation may be masked slightly by other background noise.
- The CCG questions why Heathrow is so sorely lacking in reducing noise impact compared to other Western European hub airports, as outlined above. It would appear that not only are these airports challenging Heathrow in its role as a leading world class hub airport, but are also better at managing environmental issues. Heathrow can, and should, do better.
- We make a strong recommendation that the relevant bodies at Heathrow consult with their colleagues at these other airports to find out how they do it – and then implement these findings at Heathrow. If funding for this is required, it should be sought from both the polluter, ie the aviation industry, and from the regulator, ie the Government.
- **8.1 Heathrow and the Chilterns AONB.** As Heathrow operations fly in the airspace over the Chilterns Area of Outstanding Natural Beauty, the following comments apply.
- The House of Commons Transport Select Committee's findings from its Inquiry on the Use of Airspace¹² reported that: *'Tranquility is a key factor in sensitive areas such as National Parks and Areas of Outstanding Natural Beauty. Current guidance appears to allow unchecked increases in aviation activity over these areas. Without some level of constraint, the noise environment in these areas might degrade progressively as traffic increases'*.
- And further that: *'The DfT and the CAA should examine the case for adopting maximum limits on noise*

⁹ <http://www.chilterncountrysidegroup.org> CCG Submission to TCN Consultation 2008 (3.5)

¹⁰ DfT Consultation Night Flying Restrictions April 2013 (3.5 and Table 1)

¹¹ DfT draft APF Consultation October 2012 (Fig 4.5)

¹² Findings from House of Commons Transport Select Committee in the Inquiry into the Use of Airspace (July 2009) <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmtran/163/163/pdf.3>

levels and the number of aircraft permitted per hour over sensitive areas such as National Parks and Areas of Outstanding Natural Beauty. The DfT should fund exploratory research on evidence-based limits¹³.' The CCG is unaware of any such measures or actions being implemented. This is particularly relevant to the Chilterns AONB which is overflowed by operations at Heathrow, London Luton and Northolt.

- In addition to informing policy for day time operations, these recommendations must be incorporated into any revised night noise regime and action taken to ensure they happen without further delay.

9. Achieving an equitable environmental noise policy.

- A better and more equitable policy would be for all airports, regardless of size, to be required to operate to the same environmental standards. It is a complete fallacy that because the airport is smaller, the noise and air quality pollution generated is less damaging to the quality of life of overflowed communities and to sensitive landscapes.
- The CCG welcomes the statement of: *'promotion of development of airport capacity in harmony with the environment....limiting or reducing the number of people significantly affected by aircraft noise'*.¹⁴ However, we would raise serious questions on whether these objectives can be adequately met through current policy.

10. The role of Government and the CAA in regulating noise at airports.

- As airports seek to expand and airspace is managed differently, the CCG would expect the Government and the CAA to be pro-active in establishing a regulatory noise role over all the UK's airports. It is unrealistic to expect individual commercial airports to make the same independent value judgements of their environmental impact upon overflowed communities. The CAA is, and should be, best placed to fulfil this obligation.

11. Suggestions for changes to bring benefits from improved operational procedures.

- Trials have already been carried out on trans-Atlantic routes which not only reduced noise impact, but also saved fuel and reduced greenhouse gas emissions. (*ref. Air Canada flight Frankfurt-Toronto 9.8.11*)¹⁵ For every reason, it makes absolute sense for airport and airline operators to seriously and urgently explore these 'gate to gate' procedures, and in particular for those Far Eastern long-haul flights, where savings may be even greater.
- The CCG welcomes trials¹⁶ which seek to improve operational procedures at Heathrow and indeed at all UK's airports, where there is potential to reduce environmental impact, including night noise. However, we remain concerned that the DfT and the aviation industry may seek to reduce night noise only at the expense of greater day time noise impact on overflowed communities. We do not support a position that reduction in noise cannot be achieved simultaneously for both day and night time operations.
- **Greater international co-operation between departure and arrival airports has the potential to make a hugely beneficial difference. This, and the eliminating of stacking at Holds, should be an urgent priority for discussion, agreement and trials internationally.**
- For most people the greatest environmental impact of aviation is noise from aircraft departing and arriving at airports particularly within approximately 20 miles of an airport. Some alleviation can be achieved by the use of 'optimum' routes in and out of airports called 'noise preferential routes'; these can help but do not solve the problem because the noise is merely moved laterally elsewhere.

13 ibid

14 DfT Night Flying Restrictions April 2013 (3.16)

15 <http://www.stockmarketsreview.com/news/167075/>

16 DfT Night Flying Restrictions Consultation April 2013 (5.74, 5)

- Significant improvements in the noise environment can however, be gained by adjusting the vertical profiles of departing and arriving aircraft. The perceived noise at ground level reduces markedly as aircraft altitude (height above mean sea level) increases so that in most circumstances aircraft flying above about seven thousand feet are barely heard at ground level. The sooner departing aircraft can reach this altitude and the longer arriving aircraft can maintain at or above this altitude then the better is the noise environment at ground level. How can this be achieved?
- It is common practice for commercial aircraft to use less than full engine power for take-off and to employ a technique called a 'reduced power take-off' so that, depending on ambient conditions, only sufficient power is applied to achieve a required, safe climb gradient. This is a safe and perfectly legal procedure and there are commercial advantages for operators in the use of less than full power but it does mean that aircraft do not achieve the best rate of climb of which they are capable.
- A compromise power setting, at say, somewhere between the 'reduced power' setting and full power would enable aircraft to achieve a steeper initial climb gradient than at present. Reaching seven thousand feet sooner would significantly reduce the noise footprint. Such procedures, if adopted, would not be popular with the airlines because they would incur higher operating costs as a result, but they could be very beneficial in relation to noise footprints. They would almost certainly need to be mandated by the aviation regulatory authorities.
- Steep and continuous aircraft climb profiles are sometimes currently impeded by the local air traffic control (ATC) environment when for instance, crossing tracks or holding patterns require departing aircraft to stop their climb early to achieve safe separation with other traffic. A review of the ATC procedures and airspace organisation at specific locations where such conflicts currently exist could greatly improve the noise footprint by allowing aircraft to climb quickly without hindrance.
- A good example of this situation has been highlighted by CCG in a previous consultation (TCN 2008) in relation to aircraft departing westwards from London Luton Airport and routing over the Chiltern Hills and below the Bovingdon (BNN) holding stack.
- The minimum altitude in the BNN holding pattern is seven thousand feet. Northbound departures from Heathrow (LHR) and Northolt also route underneath the BNN hold but because ATC require a minimum vertical separation of one thousand feet between conflicting aircraft their climb is restricted to six thousand feet altitude. In practice heavy, trans-Atlantic departures from LHR, which may also have used reduced power for take-off, can often only climb to five thousand feet by the time they reach BNN. Westerly departures from Luton are thus required to stay even lower at four thousand feet until they are some twenty miles from the airport and have crossed the Chiltern Hills which rise to nearly one thousand feet altitude.
- **The siting of the BNN Hold is a key issue for all Heathrow & LLA operations.**
- For arriving aircraft, the optimum type of final approach is a constant descent approach (CDA) from about four to five thousand feet and approximately 10 to 15 miles out from the runway; this results in low engine power settings, reduced fuel consumption and reduced noise. Although it is the flight crew who actually fly such approaches they can only be achieved with the active involvement of ATC controllers who vector aircraft from the airway system towards the airport and decide on its vertical profile.
- However, in the modern ATC organisation such 'area' controllers are usually located at a remote central control centre rather than at or near a particular airport and thus may have little knowledge of local topography and noise sensitive areas. Moreover, when there is little ATC activity, controllers often give arriving aircraft early descent and direct routings to the final approach point because this can save time and fuel.

- While this may suit airline operators the downside of these procedures is that populated areas can be subjected to higher than normal noise levels by overflying aircraft. Some visual indication on their radar scopes of the location of centres of population near particular airports would enable controllers to prevent this happening by vectoring aircraft away from them prior to final approach and descent. If implemented such procedures could significantly reduce the noise footprint in the vicinity of airports, particularly at night.

12. Capacity already available – why isn't it used?

- Quite clearly, there is ample space at Stansted¹⁷ for more aircraft movements and passengers, if indeed there is demand. There are good rail and road links between Stansted, London and other major UK conurbations. As there are currently a higher proportion of departures at night than at Gatwick and Heathrow, this indicates that more movements could be scheduled during the day. The CCG questions why this very modern airport, currently under-used, as any Stansted traveller will tell you, cannot accommodate the growth which the aviation industry insist is necessary to the UK's economic prosperity. Such growth does not, and should not be, during night time hours.

13. FOCUS ON IMPACT OF NIGHT NOISE ON COMMUNITIES

13.1 The significant impact of night noise on communities.

- We find the DfT is only just beginning to recognise the significant impact of night noise on communities. This is a welcome start but vastly overdue. The CCG found the April 2013 DfT consultation document on Night Flying Restrictions¹⁸ extremely narrow in its consideration of the impact of night operations, which would appear to indicate the limited importance which the DfT still places upon such a key issue for thousands of UK residents. **This completely contrasts with the approach of other major international airports who have mandatory night curfews in place, for example, at Frankfurt, Zurich and Sydney¹⁹ where obviously greater value is placed on the benefits of their population having undisturbed rest.**
- Our view is further reinforced by the Government's Aviation Policy Framework (APF) published March 2013 which devotes merely 2 paragraphs (3.34,35) to night noise, significantly less than that devoted to helicopters.

13.2 Is sufficient weight being giving to the significant impact of night flights?

- The CCG does not find that proper weighting is being, or will be given to the significant issue of night flights.
- For example, the APF applauds *'voluntary approaches such as the curfew at Heathrow which ensures that early morning arrivals do not land before 4.30am'*.²⁰ 4.30 am is EC night hours, so the Government continue to accept, and indeed commends, that EC guidance on operational hours can be ignored. Whilst the aircraft itself may not land before 4.30am, it will almost certainly have been circling and overflying sleeping communities before beginning final approach. To commend such a cavalier approach, simply because it is voluntary, is completely unacceptable and does nothing to give confidence to the public that 'balance' is being truly sought. **Such practice is entirely in the interests of the aviation operators and the airport and no-one else.**
- We also ask the question how this commendation helps the aviation industry to fulfil the DfT's obligations on noise disturbance as enshrined in EU law.²¹
- The CCG finds it astonishing that the DfT does not have an aviation model which separates day and night time operations.²² Considering that night operations are the greatest source of pollution and adverse impact and that there is pressure to expand these and further encroach on night time hours, **it is quite simply unacceptable that proper scientific analysis cannot be rigorously carried out by the Government Dept which bears statutory responsibility for aviation in the UK.**

13.3 Who or what drives demand for night flights?

¹⁷ DfT Consultation Night Flying Restrictions April 2013 (3.12 and Table 3)

¹⁸ *ibid*

¹⁹ Aviation Commission Discussion Paper 05 Noise (5.31)

²⁰ Aviation Policy Framework March 2013 (3.35)

²¹ DfT Consultation on Night Flying Restrictions April 2013 (1.10)

²² *Ibid* (6.29)

- The DfT's list²³ of the impact of night flights omitted the most important component: overflown residents, and placed air transport users first. **This absolutely indicates the balance of importance which is given by the DfT so that a traveller who may use a night flight once or twice a year is given more weighting than the sleeping population which may be disturbed several times a night, 24/7.**
- The CCG accepts that using the night for travel is an option some travellers positively choose; however many others will find this a disadvantage as rarely can proper sleep be achieved during a standard night time flight and this, in turn, has a knock-on effect on the following day. Jet-lag is a well known hazard of international travel and most travellers find it considerably lessened by travelling during the day. We find it unproven that night flights have considerable benefits.
- The CCG does not accept that night flights play an important role in increasing destination choice, nor in reducing travelling time.
- The CCG accepts that some airlines offer lower fares²⁴ to incentivise passengers to choose night time options. We believe this is industry, and not consumer, led. **We do not accept that night flights help to reduce the cost of day time flights; in fact, we would suggest the reverse is true, that the differential between day and night time flights can be more marked to encourage passengers to choose the less popular night flight.**
- We also find that whilst there may be monetary benefits to the traveller, to give a proper picture of cost/benefit, this should be weighed against the costs of health care, social welfare and other impacts on the quality of life for overflown residents.
- The point of night flights reducing travel times is unsubstantiated by hard evidence. There is a presumption that people '*negatively value time spent travelling*'.²⁵ This is a generalisation which is not supported by properly researched evidence. Many people actually value the time travelling for different reasons.
- **It would appear that profit to the aviation industry is more important than the health of the millions of residents overflown.**
- However, income to the public purse generated from night flights must be weighed against the greater demands on the public purse of greater health care and social welfare support needed by overflown residents.

13.4 Not all London airports are designated and regulated for night operations.

- It is completely unsatisfactory, that, although as the DfT state²⁶ '*government has long recognised [noise from aircraft operations at night remains widely regarded as the least acceptable aspect of aviation noise]*', there has been consistent failure to reduce, contain or eliminate this, and that there are still airports with significant night time operations, which remain undesignated and unregulated.
- The Group welcomes Government's aim '*to limit and where possible reduce the number of people in the UK significantly affected by aircraft noise*'²⁷ However, we remain concerned that the DfT's consultation paper on Night Flying Restrictions March 2013 focused any such reduction purely upon the 3 designated London airports, Heathrow, Gatwick and Stansted, and in particular, that it did not seek to even consider the application of these same regulations to all London airports, including London Luton (LLA), or indeed, nationally.

This approach completely contradicts the Secretary of State for Transport's opening comments in the APF March

23 Ibid (6.3)

24 Ibid (6.6)

25 Ibid (6.7)

26 Ibid (1.4)

27 Ibid (3.12)

2013: *'I have emphasised the importance of all our national airports. They are more than regional or secondary centres'*.

Government does recognise night noise from aviation has major impact on overflowed residents: *'The Government recognises that the costs on local communities are higher from aircraft noise during the night, particularly the health costs associated with sleep disturbance.'*²⁸ However, this recognition is too narrow as controls are not national and vary from the strict regulations in place for Heathrow, Gatwick and Stansted with full 24/7 operations permitted at others. London Luton (LLA) is the only London airport which is not regulated on night flights. **This is an unacceptable anomaly which should be rectified by including London Luton, which has an expansion application currently lodged with the local authority, effectively doubling passenger numbers, in the DfT's 2nd stage consultation on night flights operating at London airports.**

Indeed, in view of the Commission's brief and recognising the serious detrimental impact which night flights cause overflowed communities, it would seem pertinent to conduct public consultations on night noise for all airports in the UK.

Whilst the CCG welcomes those elements identified by the DfT as possible noise reduction measures, we remain **deeply concerned that no consideration is being given to the optimum solution to reduce night noise, ie. reduce the number of night flights. This is a key omission from the solutions being examined and we make a strong request for it to be included.**

13.5 Airports Commission

- We note that the DfT intends to feed the results of their recent Night Flying Restrictions consultation into the work of the Airports Commission and that this Commission's recommendations for managing night noise will be taken into account in any revised regime.
- However, due to the nature of the DfT consultation (see CCG comments on Consultation Principles²⁹), we find it highly unlikely that a balanced representation of views will be available to the Airport Commission. **The CCG wishes to express its serious concern that representation will be weighted in favour of the aviation industry and that the actual impact experience of residents may not be adequately and appropriately considered.**

13.6 Effect of night time aviation noise on residents

- At Heathrow *'most [night time] movements are scheduled services arriving after 4.30am'*³⁰ which means that thousands of overflowed residents are unnaturally deprived of sleep at a time of night when impact is likely to be greatest.
- Studies of sleep clearly reveal that it follows a rhythm and pattern which are important to quality of sleep, and thus its benefit to the human body. Most people are likely to be in a much lighter sleep as they approach the end of the natural 8 hour cycle and are therefore more likely to be disturbed.
- The DfT should establish webTAG guidance on assessment of specific impact of changes in night noise. Without this, there can be no evidence-based definitive judgement to inform decisions.
- The CCG strongly disagrees with the DfT's statements regarding scientific studies of impact of sleep disturbance upon health³¹. Regardless of whether the intrusion is aircraft, or some other noise event, it is noise and the person is disturbed. The level of noise can be measured, the level of disturbance can be measured, the effect of that upon the human body the next day, and longer term can all be measured.
- As the ERCD REPORT 1209 states, the science is *'sufficiently mature enough to include monetary*

28 Ibid (3.35)

29 Chiltern Countryside Group submission to DfT Consultation Night Flying Restrictions, Heathrow, Gatwick & Stansted April 2013 <http://www.chilterncountrysidegroup.org>

30 DfT Night Flying Restrictions Consultation April 2013 (3.7)

31 Ibid (6.57)

estimation of effects of sleep disturbance....' It is however of concern that it is not considered worthwhile to explore the effects of sleep disturbance upon children.

- There is plenty of research available with clear evidence which demonstrates '*association between stress responses and sleep disturbance*'. If the DfT truly believes this is not so,³² then it is imperative, given the responsibility which they bear for noise pollution on millions of UK residents, that they commission such research forthwith.
- The experiences of CCG supporters informs us that an individual movement of a very noisy aircraft is extremely disturbing to sleep and that that disturbance, dependent upon the sleep cycle which it breaks, can last much longer than the actual noise of the aircraft.
- However, severe disturbance can also occur where several aircraft, even the quietest, intermittently disturb during the night period. The overflowed resident may not perhaps be completely woken, but the disruption will affect the sleep cycle and thus quality of sleep, which in turn affects productivity and well being for the following day.
- The CCG finds it extremely disturbing that this year's DfT consultation specifically on night noise states: '*we [the DfT] are not aware of any conclusive evidence on the benefits of differing durations or timings in respite at night*'.³³ The CCG suggests there is plenty of evidence rooted in robust scientific research which clearly demonstrates the effect of disturbance on differing times of the sleep cycle. At the very least, the complaints log of each airport will give some basic information on numbers and frequency.
- If the DfT really cannot find this evidence, then **the CCG makes a formal request that the Commission obliges the DfT to fulfil their distinct responsibility to have this information before them to inform policy and procedures and that it should therefore be commissioned forthwith.**
- **The CCG is strongly opposed to scheduling which allows aircraft operations in critical periods of sleep for overflowed communities.** This places an unfair balance upon those communities, who suffer continuously and cumulatively, whilst the traveller experiences only a short term inconvenience, related to possible change of arrival time.
- We would suggest that clustering flights over a short period might be less disruptive than spreading the same number out throughout the night. However, the time when this 'clustering' happens is key in minimising that impact. The potential impact of this option can only be assessed after a period of detailed research.
- **The scheduling of night flights at all airports is an important area with potential benefits in noise/disturbance reduction if correlated to robust research studies on sleep disturbance. The CCG urges the Commission to instruct the DfT/CAA to carry out more work in this area.**
- There is unquestionable evidence which demonstrates that atmospheric emissions have negative effect on human health, not least for those people who already have breathing issues. As the DfT states: '*the atmosphere is more stable at night which means that pollutants are dispersed less easily...air pollution emissions at night can have a greater impact on local air quality*'.³⁴ **This is a substantive reason and driver for a reduction in actual night flight movements.**
- The DfT offers reasons for retaining night time operations³⁵. However these are all purely for the benefit of the airlines & the aviation industry. There is no benefit to others, not even travellers. There is certainly absolutely no benefit to overflowed residents who bear all the burden without any of the benefits. **This is a complete imbalance which should not be marginalised or endorsed by wealth-creation.**

13.7 Expansion

- The next night noise regime must take into account any plans for expansion of capacity at any UK

32 Ibid (6.12)

33 Ibid (5.68)

34 Ibid (6.14)

35 Ibid (5.70)

airport, particularly those in the South East. Regulation of all UK SE airports, regardless of size, should be established so that each operates under the same parameters, which bases the number of allowable night flights, for eg, as a percentage of that airport's daytime operations. However, this must be treated with caution, as this may allow smaller airports to increase the actual number of flights as they expand, when the aim should be to reduce, or indeed eliminate, night flights. Therefore, an agreed number of night flights will probably be the best option to provide stability to overflowed communities. The parameters should be set at the lowest possible level of noise impact on residents.

- Given both Gatwick and Stansted airports have daytime capacity for more aircraft movements, there is plenty of scope to reduce the current number of night quota movements and to introduce a respite period from at least 23.30 to 6.00 am to bring these UK airports in line with their European counterparts.
- **The aim should be to reduce night time noise without transferring it to day time noise.** This question is based on an assumption that growth is inevitable and that overall noise pollution cannot be reduced.
- The CCG would encourage operational procedures, as are being trialled³⁶, which allow certain departing aircraft to be re-directed earlier than usual, so that runway holding time is lessened, allowing successive departures at shorter intervals. This will not only reduce potential noise at night but also potential fuel costs and emissions, although this would have to be weighed against a greater throughput of aircraft. **The CCG remains concerned however that the benefit at night relates to 'unscheduled' night movements and does not seek to reduce the number of scheduled flights.**

13.8 Government expectations

- In its draft Aviation Policy Framework consultation October 2012, Government encouragingly stated: *'The Government expects industry to strive for continuous improvement in mitigation of noise from night flights through use of best in class aircraft, best practice operating procedures, seeking ways to provide respite wherever possible and **minimising the demand for night flights**'*. It is clear that to achieve these expectations, Government must now ensure that the aviation industry translates these requirements into robust and concrete action.
- The optimum solution to reduce night noise impact is to reduce/eliminate night flights; this is in line with Government expectations, as given above. **An actual reduction in night flights must be a key part of the objectives for any revised night noise regime.**
- There is extensive scope to influence people and industry to make choices aimed at reducing climate change and noise impact from aviation.

13.9 Noise Quotas

- The night noise contour maps reduce EC night hours by 1.5 per night³⁷ & should be set at 7.5 hours per night ie from 23.00-6.30am.
- The night quota period should be reduced from 23.30 to 23.00 and from 6.00 am to 6.30 am. The number of actual night flights should be reduced and the number of flights during the shoulder periods 23.00-23.30 and 6.30-7.00 am should be reduced.
- The CCG finds it disturbing that at Heathrow night quota period movements of QC/2 aircraft stood at nearly 50%³⁸. Even more disturbing is the DfT's approach to this as due to economic costs. We would suggest that the health and well-being of overflowed residents is more important than the aviation industry's financial well-being and profits. **This is an area where the cost-benefit ratio is completely out of balance and we do not accept that this is either reasonable or justified.**

36 Ibid (5.74)

37 DfT Night Flying Restrictions Consultation April 2013

38 Ibid (5.63)

- A quota count allows operation of noisier aircraft, when the objective is to reduce noise. Overflowed residents will be more disturbed by noisier aircraft, by the level of noise experienced, by the length of time which that noise lasts and by the number of intrusion events.
- The CCG finds that disturbance is perceived to be greater by a single noisier aircraft than by 2 quieter ones. This is particularly true at night, when even deep sleep can and is disturbed by a single, very noisy intrusion event. People are also likely to be disturbed where aircraft are clustered together, as noise from one intrusion begins the disturbance, which is then exacerbated by the next and so on, until sleep is absolutely broken. However, scheduling aircraft so they are some 20 minutes or so apart can create more broken sleep than several within a few minutes' intervals.
- **The CCG totally and strongly objects to any increase in aircraft movements during the night quota period.** The regime at Heathrow already concentrates existing night time movements and this should be a serious consideration, alongside reduction at all 3, for Gatwick and Stansted. In particular, Gatwick and Stansted have spare day time operational capacity which should be used to reduce the number of night flights and to accommodate any growth, if necessary.
- A limit on actual numbers of aircraft movements at night should be set. Airlines should not be allowed to 'carry over' quotas or 'sell' them on to other airlines, which may not operate the quietest aircraft.
- A system which allows an overall level of noise quotas does not contain the individual noise event. This has the effect of allowing a smaller number of noisier aircraft to operate, when in reality, an increase in quieter aircraft may reduce actual noise intrusion events. Where an airport relies heavily upon low-cost carriers, and especially those from developing nations, the noise impact is likely to be higher in terms of individual events.
- There should be a ban on all but the quietest aircraft during the shoulder periods at all UK airports, not just those airports which are designated.
- The CCG questions the impact of the economic climate on the commissioning of new, quieter aircraft and whether these might be delayed, due to financial constraints and/or fall in passenger demand.
- Indeed, it is somewhat concerning to read the data given by the DfT which shows that in winter 2011/12, the most recent season, the average quota count at Gatwick and Stansted rose '*due mainly to a reduction in the proportion of quieter aircraft types at each airport*'³⁹. In the present economic climate with pressure upon airlines and travellers, we fear this trend may escalate.
- We have concerns that the noisiest aircraft could be sold on to emerging economies and developing countries, which may then use these to operate in/out of other UK airports. This needs discussion at the highest level. It is pointless to reduce noise at one UK airport, only for the noisiest aircraft to pollute other UK, or indeed, other nations' communities or strategic landscapes.

13.10 Curfew at London's designated airports

- Whilst the current voluntary curfew at Heathrow is relatively successful, the CCG believes it would give greater security to residents if this became mandatory. However, to ensure that the night time disturbance did not increase if regulations became mandatory, the limits on operational movements would have to be at most what they are now with the curfew maintaining at least the present schedule.
- This is a key topic of great significance in the debate and research surrounding the possible expansion of Heathrow and the work of the Aviation Commission. **The CCG would expect this to be an integral part of the deliberations of this Commission and of Government policy.**

39 Ibid (5.42 & Fig 6)

- The CCG remains very concerned at the relatively high number of Heathrow flights which arrive in the shoulder period from 4-6.00 am, particularly those between 4.00-5.00 am.⁴⁰ This is still prime time for sleep for the majority of residents and we know people are disturbed artificially early by these pre-dawn arrivals.
- The CCG recommends the respite period now in place at Sydney (23.00-6.00am).
- The CCG welcomes the relative success of the voluntary curfew at Heathrow, but remains concerned at the number of night flights still operating at Stansted and Gatwick, where there is plenty of scope to extend day time flights, if growth is proven necessary.

13.11 Arrivals and departures at all UK's airports should be considered by ANMAC

- As the majority of night flights are arrivals, particularly at Heathrow where impact is great, the CCG would expect arrivals as well as departures to be the subject of the DfT's Aircraft Noise Management Advisory Committee (ANMAC) in their current review of the noise abatement procedures at noise designated airports.⁴¹ **As night noise is a key area of pollution for millions of residents in the UK, we would further expect this to cover all UK airports and not just those which are designated.**

13.12 Climate change

- There is more potential to reduce impact on climate change through reducing night flights throughout the UK, than for day time operations. This important point should not be minimised, or ignored by the aviation industry and Government.
- Research in 2006⁴² showed that whilst only 1 in 4 flights over the UK were at night, they accounted for at least 60% of the climate warming associated with aircraft condensation trails (contrails). Reductions in night flights would have greater positive effect.

CONCLUSION

The CCG make several substantive points throughout this document on additional assessments, research and analysis which we find necessary to inform the Aviation Commission's deliberations. We hope the Commission will seriously evaluate our recommendations and incorporate them into future work.

Chiltern Countryside Group September 2013

⁴⁰ Ibid (5.67 and Table 15)

⁴¹ Ibid (5.81)

⁴² http://www.leeds.ac.uk/news/artile/517/cutting_night