Public Inquiry into the proposed
Mixed use development on Land at the North East Sector, Crawley

Noise

Proof of Evidence by
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Crawley Borough Council
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1.0 QUALIFICATIONS AND EXPERIENCE

1.1 I am Stephen William Turner and I am the Director of Acoustics at Bureau Veritas. I hold a Masters degree in engineering from King’s College, Cambridge and an MSc in applied acoustics from Chelsea College, London University. I have worked in the field of environmental noise for over 30 years, assessing the effects of noise from a wide variety of sources including aircraft. I am a Vice-President and Fellow of the Institute of Acoustics responsible for its various Groups and Branches. I currently chair the joint Institute of Acoustics and Institute of Environmental Management and Assessment Working Party which is developing a guideline document regarding the noise issues of an environmental assessment. I am a contributing author to the textbook ‘Noise Control in the Built Environment’

1.2 Bureau Veritas is a world wide company that is over 180 years old. Its core business is in quality assurance but in the UK, over the last ten years or so, it has also developed into a multi-disciplinary environmental consultancy, primarily through acquisition.

1.3 The acoustics and vibration team contains some 35 qualified staff formed out of the former Acoustic Technology Limited and Casella Stanger. The latter company can trace its roots back to the former Greater London Council (GLC). I have been with that organisation all my working life since its GLC days. The current team is one of the largest independent organisations of its type in the UK.

1.4 I have been involved in evaluating the effects of noise from aircraft since about 1980 and have been involved in previous public inquiries into airport related development. These have included leading the air noise evidence on behalf of a consortium of local authorities lead by Surrey County Council at the London Heathrow Terminal 5 Inquiry. The thrust of my argument was
that the noise impact of a 5th terminal would be greater than that shown in the evidence of BAA. Although the Inspector ultimately approved the T5 application, he accepted my evidence and imposed an additional noise related condition (an annual movement limit of 480,000) that had not previously been offered by BAA. At present, it is that movement limit that is currently constraining the growth of the airport.

1.5 I was also appointed by the consortium of local authorities who were opposing the so-called Stansted Generation 1 project which was aimed at allowing maximum use of the existing runway. Again, I argued that the nature and extent of the impact would be greater than that shown by BAA and sought to secure conditions that would provide a degree of certainty regarding the extent of the impact. These proposals were accepted by BAA and the Inspector (although, subsequently, one of them was refused by the Government on the grounds that it would disrupt their policy of managing night noise across the three London Airports in a consistent manner).

1.6 I was also appointed by the Department for Transport to be a member of the non-Stated Preference peer review group for the study into Attitudes to Noise from Aircraft Sources in England (ANASE). That group comprised only two members, the other being the head of the Environmental Research and Consultancy Department of the Civil Aviation Authority.

1.7 For about the last ten years I have been a technical advisor to the noise and nuisance team at the Department for Environment, Food and Rural Affairs, assisting the policy officials on a wide range of issues. That work has, at times, involved me in briefing government ministers.

1.8 I have been engaged by Crawley Borough Council (“the Council”) to provide evidence regarding the impact of aircraft noise on this proposed noise sensitive development.
2.0 General Introduction

2.1 I understand that on 10th December 2008, the Secretary of State confirmed that a Public Inquiry should be re-opened to consider the proposal for a mixed use development ("the Development") on land at the North East Sector, Crawley. Of the nine issues that the Secretary of State wished to be examined, those that are most relevant to the noise impact are

- The extent to which the proposed development conforms with the emerging South-East Plan (CD65);
- The extent to which the proposed development would, if granted permission, accord with The Future of Air Transport White Paper 2003 (ATWP, CD37) and the Future of Air Transport Progress Report 2006 (R/CD9); and
- The extent to which the proposed development would be consistent with Planning Policy Guidance Note 24 (PPG24): Noise (CD33).

2.2 I shall also touch upon policies NE19 and LOC 1 from the West Sussex Structure Plan (WSSP)(CD43) and policy GD 17 from the Crawley Borough Local Plan 2000(CD44). However, Mr Fairham will explain that, until the WSSP is superseded by the final publication of the South East Plan, the Council accepts that GD 17 should be disregarded. I understand that the final publication is certainly anticipated during the currency of this re-opened inquiry.

2.3 I also understand that at the previous Inquiry a range of matters of common ground on noise matters were agreed, including:

- There was no objection, subject to mitigation, to the proposal regarding road traffic noise;
There was no objection, subject to mitigation, to the proposal regarding railway noise alone and railway noise mixed with industrial noise;

There was no constraint on the development as a result of noise from the current single runway operation of London Gatwick;

There would be an increase in aircraft noise on the development site were a wide spaced second runway to be approved as indicated in the Gatwick Airport Interim Master Plan (CD128); and

The best information on the possible future of aircraft noise that might affect the site with a wide spaced second runway is that contained in the Gatwick Airport Interim Master Plan (CD128).

I do not intend to disturb any of these matters previously agreed. At the time of preparing this proof I have not received any other draft Statement of Common Ground.

2.4 I have also reviewed Conditions 30 – 34 that were set out in the Inspector’s report from the previous Inquiry R/CD103). I see no reason to alter those conditions.
3.0 The Second Runway at Gatwick

3.1 The Gatwick Airport Interim Master Plan (CD128) considers the option for a second runway at the airport in response to the policy which requires that a second wide-spaced runway option be kept open as set out in the ATWP (Para 11.80) (CD37)

3.2 It is not disputed that aircraft noise exposure for some people living in the vicinity of Gatwick Airport would increase if a second runway at Gatwick was implemented. Depending on the mode of operation of the airport, some people currently affected by the airport may receive some relief for some of the time, but others will be newly affected. It is agreed that the development site would experience a significant increase in noise (as summarised in the previous Inspector’s report (R/CD103, Para 8.7)), as shown by the noise contours in CD128. The development site would be affected by westerly arrivals and easterly departures from the new runway. Both these modes of operation are included in the noise contours shown in CD128.

The Future of Air Transport (ATWP, CD37)

3.3 The ATWP considered possible development at Gatwick Airport and identified three issues. These were (CD37, Para 11.69)

1. Whether to overturn the 1979 agreement between West Sussex County Council and BAA which prevents the construction of a second runway before 2019;

2. Whether (regardless of the view on the first point) there should be support or retain options for an additional runway; and, if so,

3. Which option to support
3.4 The Government concluded that it would only be appropriate to overturn the agreement if there was no alternative way forward to providing additional capacity in the South East. Given that such alternatives were identified (namely, Heathrow and Stansted) the conclusion was not to seek to overturn the agreement.

3.5 In the consultation document that preceded the ATWP (The Future of Air Transport in the United Kingdom: South East (second edition), Paras 8.10 – 8.12), two options were identified for the situation where there would be one additional runway at Gatwick, - a close spaced option and a wide spaced option.

3.6 Analysis showed that the economic benefit which would be afforded by a second wide spaced runway was double that of a closed spaced runway (CD37, Para 11.73) and concludes, after considering other issues, that there is a stronger case for a wide spaced runway (CD37, Para 11.79).

3.7 At the time of the ATWP there was uncertainty both over the longer-term demand forecasts and whether or not a third runway at Heathrow could be operated within the defined environmental constraints. Given this uncertainty, the ATWP stated that the option for a wide-spaced runway at Gatwick should be kept open (CD37, Para 11.80).

3.8 Consequently, the ATWP required the Airport Operator to take steps to safeguard the land needed for a wide-spaced second runway (CD37 Para 11.81).

Air Transport White Paper Progress Report 2006 (R/CD9)

3.9 This document primarily provided information on the progress made in pursuing the policies set out in the ATWP. No change in policy was made.
regarding capacity in the south-east or the need to keep the option open for a new wide-spaced runway at Gatwick.

**Secretary of State decision on Heathrow (January 2009) (R/CD27)**

3.10 In January 2009, following a consultation, the Secretary of State for Transport confirmed that he felt that it would be possible to operate a 3rd runway at Heathrow within the previously defined environmental constraints. At first sight, this seems to deal with one of the uncertainties mentioned in Para 11.80 of CD37. However, this decision document also stated that the environmental conditions at Heathrow would be given legal force, and set out proposals whereby additional capacity would be released only if it could be demonstrated that the environmental limits would not be breached. My interpretation of that decision, apart from giving certainty to those affected by Heathrow that the environmental constraints would not be exceeded, is that there is still uncertainty regarding just what additional capacity Heathrow will provide.

3.11 Thus, the uncertainty previously described in the ATWP regarding what Heathrow can provide still exists, and hence the option for a wide spaced runway at Gatwick still remains. This decision document is silent on the question of keeping the option open for a second runway at Gatwick. Thus, the policy is unchanged.

**Emerging South-East Plan**

3.12 This document has been in preparation for several years and will be more fully dealt with in the evidence of Mr Fairham. With regard to Gatwick Airport, both the Panel and the Secretary of State felt that the original draft policy T9 for the airport did not properly reflect the content of the ATWP. A
proposed change was made by the Secretary of State so that the policy would

*safeguard land at Gatwick Airport for a possible new runway after 2019, in line with Panel’s recommendation.*

The resulting policy includes the following:

*Relevant regional strategies, Local Development Documents and Local Transport Plans will include policies and proposals that:*

* i) Support the development of Gatwick and Heathrow Airports and safeguard land at Gatwick for a possible new runway after 2019*

* ……*

* iv) Take account of airport operator masterplans produced in accordance with the ATWP*

3.13 Although the final plan is expected very shortly, the current position from government seems to be that a second runway at Gatwick should not be ruled out, thus making the South East Plan consistent with the ATWP.

**Recent Developments**

3.14 BAA announced in September 2008 their intention to sell Gatwick Airport. This appeared to be in anticipation of the result of the Monopoly and Mergers Commission report. Given the economic benefit that would accrue from a second runway (as set out in the ATWP, CD37), I believe that the new owner would wish to see their new investment fully meet its potential for growth and hence wish to develop a second runway. This view has been supported by a news item on 24th April 2009 which suggests that all
three bidders for the airport have a second runway as part of the business plan.

**Summary**

3.15 In summary,

- The ATWP did not rule out a second runway at Gatwick whilst there was uncertainty over the ability of Heathrow to provide the required capacity in the South East as well as uncertainty over that level of capacity;

- The ATWP recognised the strong economic case for additional capacity at Gatwick;

- The ATWP concluded that a new wide spaced runway clearly created the greatest potential economic benefit and required the Airport Operator to safeguard land accordingly;

- The Airport Operator reflected these wishes in their Interim Masterplan which included an indication of the likely noise impact of a two runway Gatwick;

- The Secretary of State has intervened to ensure that the emerging South East Plan reflects the policy in the ATWP (i.e. that of keeping the option open for a wide spaced runway and that the safeguarding of land is maintained);

- All the bidders for the ownership of Gatwick Airport are understood to have included in their business plans an additional runway at the airport.
3.17 Based on the above, therefore, it is my view that the assessment of whether or not the development being considered at this Inquiry should proceed on the assumption that there will be a second wide spaced runway at the airport. Consequently, it is my view that the conclusion reached by the previous Inspector (R/CD103, Para 12.59) still holds, namely that

the possibility of a second runway at Gatwick and the consequences of aircraft using that runway for the noise environment in the development are factors that should, on the information currently available, be afforded significant weight in the overall decision.

3.18 If anything, given the proposed sale of Gatwick and the indication that potential purchasers have included a second runway in their proposals, the position taken by the previous Inspector has been reinforced.

3.19 Furthermore, and as agreed in the Statement of Common Ground, the noise impact at the site should assume a two runway airport and is that which is shown in the Gatwick Airport Interim Master Plan (CD128).
4.0 The Air Noise Impact on the Site with a Second Runway at Gatwick

4.1 As indicated above, there is no disagreement that noise levels on the development site would rise with a wide spaced second runway operating. The extent of the noise impact that would arise due to the second runway is shown in the Interim Master Plan. This position is agreed in the Statement of Common Ground.

4.2 From inspecting the plans (Drawing 9 of CD128), it seems that the site is wholly within the 54 dB $L_{Aeq,16h}$ contour, is mostly within the 57 dB(A) contour and some of the site is within the 66 dB(A) contour. Around half the site is within the 60 dB $L_{Aeq,16h}$ contour. Mr Fairham will describe the number of houses that would be affected by the various levels of noise exposure.

4.3 There is a range of guidance available for assisting in determining the suitability of a site for residential and other noise sensitive development that is affected by aircraft noise, and I consider these in turn below

**ICAO ‘Balanced Approach’**

4.4 The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations, and was created with the signing in Chicago, on 7 December 1944, of the *Convention on International Civil Aviation*. ICAO is the permanent body charged with the administration of the principles laid out in the Convention. The Convention sets out principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner agreed by the signatory governments. The United Kingdom is one of those signatories.
The ICAO Assembly endorsed in 2001 the concept of a ‘balanced approach’ to aircraft noise management (Appendix C of Assembly Resolution A35-5). The ICAO Assembly reaffirmed this approach in 2007. The balanced approach comprises four principle elements:

- Reduction of Noise at Source;
- Land-use Planning and Management;
- Noise Abatement Operational Procedures; and
- Operating Restrictions.

The ICAO Air Transport Bureau document on this topic (R/CD60) describes further these principles and for land-use planning and management states that:

*Its main goal is to minimize the population affected by aircraft noise.*

It goes on to state that:

*Compatible land-use planning and management is also a vital instrument in ensuring that the gains achieved by the reduced noise of the latest generation of aircraft are not offset by further residential development around airports.*

I interpret this advice as meaning that we should avoid placing significant numbers of new dwellings in locations affected by aircraft noise, such as the proposed development site.

4.8 This regulation transposes Directive 2002/30/EC which concerns the establishment of rules and procedures with regard to the introduction of noise-related operating restrictions at Community Airports. The regulations require the Competent Authority, in this case of Gatwick Airport, the Department for Transport, when addressing noise problems at the airport to publish an environmental objective for the airport and to adopt a balanced approach. The regulations define “balanced approach” as an approach under which there is consideration of the available measures to address the noise problem at an airport, namely the foreseeable effect of a reduction of aircraft noise at source, land-use planning and management, noise abatement operational procedures and operating restrictions, i.e. the four ICAO balanced approach principles.

4.9 In developing the latest set of night noise restrictions for Gatwick, the requirements of R/CD4 were followed, resulting in environmental objectives and noise abatement objectives being declared for Gatwick (night flying outcomes CD122).

4.10 The environmental objectives for Gatwick are:

- Progressively to encourage the use of quieter aircraft by day and by night;

- To avoid allowing the overall noise from aircraft during the night quota period to increase above what was permitted in 2002-2003; and

- To meet noise abatement objectives as adopted from time to time. (CD122, Para 35)
4.11 The noise abatement objective for Gatwick concerns limiting the area of the 6.5 hour 48 dB(A) night quote period contour to 47 km² by 2011 – 2012. (CD122, Para 39)

4.12 The principles of the ICAO’s balanced approach can also be found in the ATWP (CD37, page 33). It states that the element of land-use planning and management is to ensure that

*inappropriate development is discouraged or prohibited around airports.*

It goes on to note that the relevant planning policy statement in this area is PPG24, Planning and Noise (CD33). There is a reference to updating PPG 24 and I understand this is referring to work which was underway when the ATWP was published regarding a general updating of all Planning Policy Guidance, moving them to Planning Policy Statements. Work did commence on revising PPG24 under this programme, but it was not completed.

4.13 Furthermore in Para 3.11 of CD37, it is stated that the basic aim of Government policy is to limit and, where possible, reduce the number of people in the UK significantly affected by aircraft noise. One of the measures expected to assist this aim is identified as through

*implementing the regulatory framework agreed by the International Civil Aviation Organisation (ICAO). The key elements of this framework have now been incorporated into UK law by the Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003.*

4.14 CD37 goes on to note that these regulations currently apply at ten airports in the UK. One of those airports is Gatwick.
4.15 Thus, the policy in the ATWP is clearly one of reducing, where possible, the number of people in the UK significantly affected by aircraft noise through, \textit{inter alia}, land use planning, following the guidance in PPG24.

\textit{Environmental Noise (England) Regulations 2006}

4.16 These regulations transpose European Directive 2002/49/EC, commonly described as the Environmental Noise Directive (END) (CD1). These regulations require member states to

- undertake noise mapping of major transport sources and large urban areas;
- prepare noise action plans based on the results of the noise mapping; and
- make information available to the public.

Gatwick Airport qualified as a major airport under the terms of these regulations. Consequently noise mapping was carried out in 2007.

4.17 The Regulations have made the Airport Operator the competent authority for developing the noise action plans and the Department for Environment, Food and Rural Affairs has recently published guidance to airport operators regarding the development of those action plans (R/CD56). At paragraph 3.12 the guidance states that Airport operators should

\textit{reflect the International Civil Aviation Organisation’s balanced approach for noise management as implemented into UK legislation through Statutory Instrument 2003/1742 including pro-actively engaging with the land-use planning process}
PPG 24 – Planning Policy Guidance Note 24 (CD33)

4.18 As indicated in paragraph 4.12 above, the ATWP makes an overt reference to PPG24 when referring to the ICAO balanced approach and reducing the number of people significantly affected by aircraft noise.

4.19 PPG24 was published in September 1994 and gives guidance to local authorities in England on how to minimise adverse noise impact on new noise sensitive developments by considering external noise levels on a development site.

4.20 Paragraph 12 of CD33 also states that account should be taken of any increase in noise exposure that may be expected in the foreseeable future:

Local planning authorities should consider carefully in each case whether proposals for new noise-sensitive development would be incompatible with existing activities. Such development should not normally be permitted in areas which are- or are expected to become subject to unacceptably high levels of noise. When determining planning applications for development which will be exposed to an existing noise source, local planning authorities should consider both the likely level of noise exposure at the time of the application and any increase that may reasonably be expected in the foreseeable future, for example at an airport.

4.21 Thus CD33 supports the use of the noise information as set out in CD128 in assessing this development proposal.

4.22 PPG24 states its general principles as follows:

The impact of noise can be a material consideration in the determination of planning applications. The planning system has the task of guiding development to the most appropriate locations. It will be hard to reconcile
some land uses, such as housing, hospitals or schools, with other activities which generate high levels of noise, but the planning system should ensure that, wherever practicable, noise-sensitive developments are separated from major sources of noise (such as road, rail and air transport and certain types of industrial development).

4.23 It goes on

Where it is not possible to achieve such a separation of land uses, local planning authorities should consider whether it is practicable to control or reduce noise levels, or to mitigate the impact of noise, through the use of conditions or planning obligations.

4.24 It seems clear, therefore, that the order of priority within PPG24 is firstly to separate the sensitive development from the noisy source, and secondly, if that is not possible, to use conditions to mitigate the noise impact. This suggests, therefore, that alternative less noisy sites should be considered first, before relying on noise mitigation at a noisier location.

4.25 PPG 24 defines Noise Exposure Categories (“NECs”) for noise sensitive development sites which are affected by road, rail and air transportation noise sources. These categories are denoted by letters from A to D, where A is attributed to situations where noise is unlikely to be a determining factor, and D to situations where planning permission should normally be refused on noise grounds. Categories B and C are attributed to situations where noise mitigation measures may make a site acceptable for development.

4.26 Recommended ranges of noise levels for each NEC for day and night time periods are given in the document in Table 1 in Annex 1, reproduced in Box 1 below:
4.27 On this basis, and with reference to Drawing 9 in the Interim Master Plan (CD128), the majority of the site would fall within Category B, with a small part at the southern end in Category A and a smaller part at the northern end in Category C.

4.28 Box 2 shows the specific guidance in PPG24 with respect to these categories:
4.29 The site Masterplan as shown in plan reference CSA/667/020 Rev D shows a mixture of noise sensitive development including dwellings and a school. For the dwellings, Condition 30 from the previous Inquiry limited the provision of residential development to those areas of the site within NEC A and NEC B and this constraint seems to be reflected in that plan.

**Characteristic of Aircraft noise compared with road and rail noise**

4.30 It can be seen that Annex 1 of PPG24 deals with the three distinct noise sources – road, rail and air. The principles of Noise Exposure Categories applies equally to all those sources, with the different boundary values reflecting detailed issues as described in Annex 2 of PPG24.

4.31 There is though a difference between road and rail sources, which are land based, and aircraft, where the source is elevated. For a residential development close to a road or railway, a noise barrier could be erected so that any further development away from the source would benefit from the shielding afforded by the noise barrier. Thus a major new noise sensitive
development can be accommodated in the vicinity of a road or rail source because of the shielding afforded by noise barriers close to the sources.

4.32 This principle can be seen in the design shown on plan CSA/667/020 RevD where some noise barriers are proposed.

4.33 The situation is different when the site is affected by aircraft noise. No such protection can be afforded as the source is elevated. This feature results in guidance in PPG24 that is unique to the situation of aircraft noise and proposed new housing.

**PPG24 Annex 3, paragraph 8**

4.34 Paragraph 8 of Annex 3 states that:

> Recommended noise exposure categories for new dwellings exposed to aircraft noise are given in Annex 1, but 60 Leq dB(A) should be regarded as a desirable upper limit for major new noise sensitive development.

As mentioned in Para 4.2 above, about half the site falls within this contour area.

4.35 Clearly, the proposed development does not accord with this part of the guidance because, if implemented, many people would be exposed to aircraft noise which no layout design can assist in mitigating.

4.36 Following this guidance also fits well with the reference to PPG24 in the ATWP (in the context of the ICAO balanced approached) and is a means of discouraging or prohibiting inappropriate development around airports.

4.37 Consequently, with regard to PPG24, it is clear that, uniquely in the case of a major noise sensitive development near an airport, consideration must not
only be given to the relevant advice in Annex 1 but also to the advice in Annex 3 paragraph 8.

**South East Plan**

4.38 Elements of this emerging plan have already been discussed at paragraph 3.12. The document’s policy on noise (NRM10) states, *inter alia*, that measures to address and reduce noise pollution will be developed at regional and local level through means such as:

- locating new residential and other sensitive development away from existing sources of significant noise or away from planned new sources of noise
- encouraging high levels of sound-proofing and screening as part of sustainable housing design and construction.

4.39 In the context of this proposal, the sentiment that new residential or other sensitive development should be located away from planned new sources of noise is particularly relevant.

4.40 In general, this policy seems to imply that the preferable approach is to locate new residential development away from existing sources and only when that cannot be done use mitigation measures.
Crawley Local Development Plan

4.41 Policy GD 17 provides guidance on the issue of new noise sensitive development. It is reproduced in Box 3 below:

Box 3

Extract from Crawley BC Local Development Plan

Policy GD17
The Borough Council will have regard to the latest published and finalised guidance regarding development and noise, the latest agreed predictions of aircraft noise and the latest agreed calculations of noise from other sources and will:

(i) require by a condition on any planning consent an adequate or commensurate level of protection from noise where residential or other similarly noise sensitive development falls within NEC - D or NEC - C zones;

(ii) not normally permit residential or other similarly noise sensitive development within a NEC - D zone.

Notwithstanding that it may be possible to install noise insulation measures for individual buildings, major noise sensitive development will not be permitted in areas subject to aircraft noise exceeding 60 dB(A) unless there are exceptionally compelling reasons.

4.42 It can be seen that the policies at (i) and (ii) reflect the advice in Annex 1 of PPG24. The final paragraph clearly reflects the advice in Annex 3, paragraph 8 of PPG 24.

West Sussex Structure Plan 2001-2016

4.43 West Sussex County Council prepared this document to cover the period 2001-2016 and provides the strategic context for decisions on the planning of land use and transport in the county.
4.44 The Structure Plan sets out policies to meet the needs of the communities and businesses of West Sussex for homes, jobs, facilities and services whilst protecting the character of the County and the environment in general.

4.45 There are two policies that are relevant to this issue, policy LOC1 and policy NE19.

4.46 Policy LOC1 refers to the locational strategy in connection with new development. Policy LOC1 (b) states

*Development requirements which cannot be met within towns and villages or at sites with existing planning permission (subject to review at renewal), should be provided for mainly in the form of large-scale mixed-use development:*

* (1) at the following sites….

* (ii) Crawley (North East Sector)*

namely, the subject of this proposal.

4.47 However, there is a footnote associated with the reference to Crawley (North East Sector). It states:

*Development at this location may be delayed or prevented, in whole or in part, due to the need to safeguard land for a possible second runway at Gatwick Airport (see paragraph 84)*

Paragraph 84 discusses the ATWP (CD37) and states, *inter alia,*

*The need to safeguard land for a possible second runway has implications for development at the North East Sector of Crawley.*
The safeguarding will relate directly to the land needed for the runway and the enlarged airport but also indirectly to land affected by height restrictions and aircraft noise.

4.48 The West Sussex Structure Plan, therefore, recognises that large-scale mixed-use development at the proposal site might be prevented by a two runway Gatwick airport.

4.49 In my view this is acknowledging that it is undesirable to permit major developments where the site is affected by aircraft noise (as described in Annex 3, paragraph 8 of PPG24).

4.50 Policy NE19, relates to Gatwick Airport and includes the following statements:

*New residential and other noise-sensitive development should not be permitted in areas most severely affected by noise. (NE19,a)*

*District planning authorities will include policies in local plans to:*

*ensure that all reasonably practicable measures are taken by the Airport operator to minimise any harmful environmental or other consequences of the Airport’s operation (b,2,vi); and*

*restrict residential and other noise-sensitive uses within the noisiest forecast 66 $L_{eq}$ contour around Gatwick Airport and ensure that adequate sound insulation is provided for new residential development between the noisiest forecast 60 and 66 $L_{eq}$ contours.’ (b,2,vii)*

4.51 My interpretation of this guidance is that the preferable approach is not to locate noise sensitive development in noisy areas. Only when that is not possible, the compromise is to avoid building within the 66 dB(A) contour
and to ensure that adequate insulation is provided for locations within the 60 – 66 dB(A) contours.

4.52 By not going down to 57 dB(A), the West Sussex Structure Plan appears not to accord with the advice in PPG24. However, PPG24 does give local planning authorities some flexibility over the definition of the Noise Exposure Category boundaries. Paragraph 9 of the main text of PPG24 it states

*where there is a clear need for new residential development in an already noisy area some or all NECs might be increased by up to 3 dB(A) above the recommended levels. In other cases, a reduction of up to 3 dB(A) may be justified*

4.53 Thus the advice in NE19 could be seen as reflecting this aspect of PPG24 through invoking this flexibility.

4.54 The advice in NE19 would clearly apply to proposals for, say, one or two new houses to be located within the 60 – 66 dB(A) noise contour. However, as indicated above, and with specific reference to the proposed development site, CD43 does reflect the guidance in PPG24, Annex 3, paragraph 8 by noting that large scale mixed use development might be prevented here due to a two runway Gatwick.

*Further development*

4.55 As mentioned in paragraph 3.10, the document, Adding Capacity at Heathrow: Decisions Following Consultation (R/CD27), sets out the Government’s conclusions on the development of Heathrow airport following a consultation. A wide range of issues are covered in the document, but at paragraph 68 the Secretary of State asks the airport operator
to consider extending its noise insulation and mitigation schemes to all community buildings and households in the new 57 dB(A) contour who will experience an increase in noise of 3 dB(A) or more.

4.56 This is a significant change in policy. Previously, the ATWP (CD37) at paragraph 3.24 required airport operators, with respect to new airport development to

*offer acoustic insulation to any residential property which suffers from both a medium to high level of noise (63dBA Leq or more) and a large increase in noise (3dBA Leq or more).*

4.57 Thus the Government has reduced by 6 dB(A) the threshold at which the mitigation should be instituted. This seems to reflect a recognition that certainly all those within the 57 dB(A) contour would be affected by aircraft and should be offered protection.

4.58 In the ATWP (box on page 34 after Para 3.14), the Government describes 57 dB(A) as the onset of significant community annoyance. This does not mean no one is significantly annoyed by aircraft noise below 57 dB(A), it is simply a convenient descriptor of that level of noise exposure.

4.59 It is possible to estimate the community reaction to noise using the noise contour values based upon the results of social surveys undertaken in 1980s. The Civil Aviation document CAP 725, CAA Guidance on the Application of the Airspace Change process sets out in Section 4, Appendix B, Annex 4, Table 3 the relationship between the percentage of people highly annoyed with the corresponding contour value.

4.60 Annoyance due to environmental noise is recognised as an adverse effect and is an issue addressed by the World Health Organisation in its Guidelines for Community Noise (CD100). Consequently, it is appropriate
to consider the likely annoyance caused in order to obtain a measure of the impact of aircraft noise. These results are reproduced in Table 1 below.

<table>
<thead>
<tr>
<th>Contour Band</th>
<th>% Highly Annoyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>54 – 57</td>
<td>6.6</td>
</tr>
<tr>
<td>57 – 60</td>
<td>11.1</td>
</tr>
<tr>
<td>60 – 63</td>
<td>18.0</td>
</tr>
<tr>
<td>63 – 66</td>
<td>28.0</td>
</tr>
<tr>
<td>66 – 69</td>
<td>40.7</td>
</tr>
<tr>
<td>69 – 72</td>
<td>54.9</td>
</tr>
<tr>
<td>72 - 75</td>
<td>68.2</td>
</tr>
</tbody>
</table>

4.61 It can be seen that even below 57 dB(A) some 6 – 7 % of those affected by aircraft noise would be highly annoyed.

4.62 There are two aspects of these results that need to be borne in mind. Firstly, it is unclear the extent to which these values vary with the implementation of sound insulation treatment. On the one hand, there would be a benefit (a satisfactory internal environment with windows closed), but on the other, the outside amenity is still affected by aircraft noise and some or all of the annoyance felt could relate to that aspect of the residents’ lives.

4.63 The second point is that the Government has acknowledged that people are more annoyed by all levels of aircraft noise than they were in 1985. This was stated when the results of the Attitudes to Noise from Aviation Sources in England (ANASE) study was published in November 2007. This study arose from a recommendation by the Inspector at the Heathrow Terminal 5
inquiry and sought to update the previous work undertaken which produced the results in Table 1 above.

4.64 The Department for Transport identified two key conclusions from the ANASE study:

First, that people are more annoyed by all levels of aircraft noise than they were in 1985, when the last major study in this field was carried out.

Secondly, there is no identifiable threshold at which noise becomes a serious problem. Even relatively low levels of noise can cause some annoyance, which rises as noise increases.

4.65 Although concerns were expressed about the robustness of the study, it is clear that the Government believe that the situation has changed from the 1980s and that people are more annoyed than before.

4.66 It might be for this reason that the move was made by the Government to require the airport operator of Heathrow to offer insulation from 57 dB(A) (with the 3 dB(A) increase) with the runway 3 decision.

4.67 If the development here is approved, conditions will be imposed on the developer to achieve a certain level of sound insulation for the residential properties so that a satisfactory internal noise environment can be achieved. As indicated by Condition 30 (R/CD103), for some dwellings a satisfactory internal noise environment will only be achieved with windows closed. Thus for some residents there could be a choice between having a satisfactory internal noise environment with windows closed or having the windows open and reducing the noise insulation. Having to make such a choice could be a source of annoyance.
4.68 Furthermore, no such measures will be possible for the external areas on the development site. These areas include not only private gardens, but also the public open spaces. The enjoyment of these spaces would undoubtedly be reduced by the aircraft noise and for some of those living there that could be a source of annoyance.

**External Amenity**

4.69 As indicated above, although conditions can be applied to provide a satisfactory internal noise environment through the use of sound insulation, no such remedial measures are possible for the external space.

4.70 This is another reason, in my view, why the guidance in Annex 3, paragraph 8 exists only in the context of aircraft noise. Whereas the use of barriers can make worthwhile reductions in the noise from land based sources such as road and rail traffic, and hence the external amenity protected, the same is not true for aircraft sources.

4.71 If the proposal for this site was accepted, the mitigation set out in the agreed conditions from the previous Inquiry would achieve a satisfactory internal noise environment, but the external environment would be affected by the aircraft and reduce the quality of the living experience there. If the two runway Gatwick was operated at capacity, it is likely that there would be an aircraft departure every 90 seconds (as at happens now at Heathrow). In that circumstance, there would be periods when the sound of one aircraft would not have receded before the next movement is heard.

4.72 Consequently, I would expect that some people living on this site would be highly annoyed by the aircraft noise.
Conclusion

4.73 I conclude from this assessment that the range of guidance advises that:

- New development on the scale proposed should not be permitted at locations affected by aircraft noise if at all possible;

- If no alternatives are available, only then should consideration be given to permitting development with appropriate mitigation measures for the dwellings (and other noise sensitive buildings);

- Even with this mitigation it seems likely that some of those living there will be highly annoyed by the aircraft noise and hence experience a significantly reduced quality of life than might otherwise be the case;

- It is recognised that, with regard to airports, noise from airport operations is one of the biggest issues that has to be faced. It is no different here, the noise issue is important and should be considered accordingly.
5.0 **Primary School**

5.1 Part of the development proposal includes a new primary school. Examining plan CSA/667/020 Rev D it seems to have been located towards the noisier part of the site with respect to the aircraft noise.

5.2 Guidance regarding the effect of noise on schools can be found in Building Bulletin 93 (CD121), published by the former Department for Education and Skills (DfES). This document aims to provide a regulatory framework for the acoustic design of schools in support of the Building Regulations. It gives supporting advice and recommendations for planning and design of schools and provides a comprehensive guide for architects, acousticians, building control officers, building services engineers, clients, and others involved in the design of new buildings.

5.3 It contains acoustic performance standards with the objective of providing conditions in schools that facilitate clear communication of speech between teacher and student and between students, and that do not interfere with study activities. These performance standards include indoor ambient noise level limits which may be affected by the external noise environment.

5.4 It also gives recommendations and guidance concerning the choice of site for a new school and the control of external noise as it might affect outdoor teaching.

5.5 The guidance advises that noise levels of no more than 50 dB $L_{A_{eq},30\text{min}}$ are desirable in external teaching areas. Furthermore, for playing fields, BB93 recommends a desirable upper limit of 55 dB $L_{A_{eq},30\text{min}}$.

5.6 I concur with the view that with appropriate noise insulation and ventilation a satisfactory teaching environment could be achieved within the school. I
also agree with the Inspector (R/CD103, Para 12.55) that it is unlikely that the BB93 external standards would be achieved.

5.7 Data in document GWB[5/5] from the previous inquiry (Page 11/12) shows that $L_{A_{max}}$ levels of 67 dB to 80 dB would be likely in the vicinity of the school. At these levels, external teaching would be interrupted with each movement and, given the possible frequency of aircraft events, these interruptions could occur as often as every 90 seconds.

5.8 Thus, it is far from ideal to locate a school on this site.
6.0 Alternative Development Sites

6.1 It is clear that the guidance advises that noise sensitive development should not be placed close to noisy sources if at all possible. I have been asked by Crawley Borough Council to consider alternative locations where the housing need of the region might be met. I have examined the air noise environment at these locations both with the current level of activity at Gatwick and with the situation with a wide-spaced second runway at Gatwick Airport.

**Crabbet Park**

6.2 I have concluded that this site currently lies in NEC A, outside the 57 dB $L_{A_{eq,16h}}$ noise contour, and that with the second runway in operation, it would continue to remain in NEC A, in fact, outside the 54 dB $L_{A_{eq,16h}}$ noise contour.

**Site West of Ifield**

6.3 I have concluded that currently this site lies in NEC A, outside the 57 dB $L_{A_{eq,16h}}$ noise contour. With the second runway in operation, this site would continue to lie in NEC A, outside the 57 dB $L_{A_{eq,16h}}$ noise contour.

**Pease Pottage**

6.4 This site lies in NEC A, outside the 57 dB(A) contour currently (and probably outside the 54 dB(A) contour currently), and certainly lies in NEC A and outside the 54 dB(A) contour in the future.
Site west of Bewbush

6.5 This site lies in NEC A, outside the 57 dB(A) contour currently (and probably outside the 54 dB(A) contour currently), and certainly lies in NEC A and outside the 54 dB(A) contour in the future.

6.6 I understand that four other sub-regional strategic development locations are also under consideration. These are:

West of Horsham

6.7 This site is currently exposed to noise levels in NEC A, i.e. below 57 dB L_{Aeq,16h} and probably below 54 dB(A). With the second runway in operation, this site would be in NEC A, and outside the 54 dB L_{Aeq,16h} noise contour.

West of East Grinstead

6.8 This site is currently exposed to noise levels below 57 dB L_{Aeq,16h} and probably below 54 dB(A) and hence is in NEC A. With the second runway in operation, this site would be in NEC A and outside the 54 dB L_{Aeq,16h} noise contour.

North West and North East Horley

6.9 These sites are currently exposed to noise levels below 57 dB L_{Aeq,16h} and probably the 54 dB(A) contour and hence is in NEC A. With the second runway in operation, this sites would be also be in NEC A and outside the 54 dB L_{Aeq,16h} noise contour.

Conclusion

6.10 I conclude, therefore, that there are number of sites that could be used for housing and associated development all of which have a much lower
exposure to aircraft noise than the development site. As I have described above, the guidance suggests that these sites should be considered for development ahead of the much noisier site that is the subject of this Inquiry.
7.0 Conclusions

7.1 My evidence has primarily considered three of the issues that the Secretary of State wished to be examined at this Inquiry, as well as touching on other policies. My conclusions for each are set out here:

*The extent to which the proposed development conforms with the emerging South-East Plan (CD65)*

7.2 Policy T9 of the emerging plan requires that land is still safeguarded for a possible second runway at Gatwick. Thus, it should be assumed that there will be an aircraft noise impact on the site. The extent of the impact is such that all the housing on the site would qualify for an offer of acoustic insulation if the criteria to be applied to the third runway at Heathrow were applied here.

7.3 Policy NRM10 of the plan also requires new sensitive development to be located away from existing sources of significant noise or away from planned new sources of noise.

7.4 The proposed development would place new sensitive development near a planned new source of noise. Consequently, it does not conform with these policies emerging South-East plan.

*The extent to which the proposed development would, if granted permission, accord with The Future of Air Transport White Paper 2003 (ATWP, CD37) and the Future of Air Transport Progress Report 2006 (R/CD9)*

7.5 For several reasons, the proposal does not conform to the ATWP. One of the Government aims in the ATWP is to reduce the number of people significantly affected by aircraft noise. Allowing this development would
increase by around 3,300 the number of people affected by aircraft noise. Furthermore, given that some of those living on the site would be expected to be highly annoyed by the aircraft noise, that means there would be an increase in the number significantly affected.

7.6 One of the measures that Government wish to see used to achieve that goal is the ICAO’s balanced approach to ensure that inappropriate development is discouraged or prohibited around airports. The Government relies on PPG24 to assist in achieving that goal, including the advice of Annex 3, paragraph 8 of PPG24, which uniquely deals with aircraft noise.

7.7 Allowing this proposal would not accord with that PPG24 guidance and hence not with the ATWP. The progress report did not alter this aspect of the ATWP and hence the proposal would not accord with that document either.

The extent to which the proposed development would be consistent with Planning Policy Guidance Note 24 (PPG24): Noise (CD33).

7.8 As indicated above, the proposal does not accord with Annex 3, paragraph 8 of PPG 24. This is a major disadvantage which in my opinion should be given significant weight in the overall balancing exercise. The principle set out in this element of PPG 24 is found in other policies such as Crawley Borough Council’s GD 17 and the West Sussex Structure Plan’s LOC1, and should not be ignored. I have explained why such guidance exists uniquely for aircraft noise compared with other transport sources. Thus when considering large scale residential development near an airport Annex 3, paragraph 8 must be considered as well as the advice in Annex1.

7.9 Furthermore, the proposal for the school would not achieve a satisfactory noise environment for the external teaching areas and play areas.
7.10 There appear to be several potential alternative sites in the region that are not affected by aircraft noise on which housing development could occur that would not conflict with the relevant elements of the emerging South East plan, the ATWP and PPG 24.

**Overall Conclusion**

7.11 The aircraft noise will not permit the residents living in the proposed North East Sector development to enjoy fully their homes and the surrounding open spaces. Consequently it would be expected that many would be dissatisfied by the presence of the aircraft noise, with some being expected to be highly annoyed by the aircraft noise and hence significantly affected. It is, therefore, my view that all other avenues must be properly explored and indeed ruled out before resorting to granting consent for this scale of noise sensitive development in this location.

Date: 2\textsuperscript{nd} May 2009