

Stansted Airport
'Generation 1' Inquiry

PINS Ref: APP/C1570/A/06/2032278

Notes for Opening
on behalf of
The National Trust

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Introduction

- 1.1 The body which is known as the National Trust will be well known to the Inquiry. Its status and purposes are shortly described by Mr Turner¹. It was established in order permanently to preserve land and buildings for the benefit of the nation. Within its remit, it is the guardian of that which made England what it is. The Trust has a number of important concerns about BAA's G1 proposals, but sees that many are addressed by others and so will not add to the material on those other topics. It focuses on the effects on Hatfield Forest which it owns for the benefit of the nation as a national asset for the nation to enjoy – in perpetuity².
- 1.2 The Trust has no desire to be here. It is an unnecessary drain on its limited resources. Its presence and participation at the Inquiry is a direct result of BAA's
- (i) failure to address the importance of Hatfield Forest as a cultural resource or at all, and to assess the effects of its G1 proposals on that resource,
 - (ii) its failure to address adequately or at all the effects of its G1 proposals
 - (a) on the fabric of the Forest (air pollution) and
 - (b) on the experience of its visitors (aircraft noise), and
 - (iii) its failure even to consider possible effective mitigation for any of those effects.

¹ NT1/A p1.

² NT/1A §2.1, §3.3 and A^x 1.

Hatfield Forest – Historical and Social Context

- 2.1 Historically, a Forest is as much a concept as a physical entity: but it is always both. It is not a 'big wood' ³. Forests were places where Forest Law was established to protect the King's deer. A Deer Park was private land. By contrast, a Forest was a place where other interests in the land already existed but where Forest Laws were overlaid. Even though a Forest was a place for deer, it was a comparatively minor use of the land. The main users were the local people who already managed the semi-natural landscape of pre-medieval times. Forest Law added another layer of rights and obligations where other pre-existing rights, interests and obligations already overlapped. The results of the complex interactions of the various competing but complimentary interests have survived for centuries. They shaped the management of the Forest and Hatfield Forest today still displays the historically complete and complex interactions of a medieval Forest. Hatfield Forest is properly described as inherently timeless.
- 2.2 The general physical layout of Hatfield Forest has been established in much the same form for over 1,000 years. Forest Law was established over the area of the Forest in about 1100 – shortly after the Tower of London was completed. I leave some generalised markers of history over the subsequent centuries. Hatfield Forest was over 100 years old when the Magna Carta was signed. Robert the Bruce inherited Hatfield Forest in 1304. It saw the Wars of the Roses and saw Columbus set sail for the Americas. It had already been established for nigh on 500 years when the Spanish Armada set sail for England. It saw the 'Gunpowder Plot', the English Civil War and the Great Plague and the Fire of London. It was here when Captain Cook set sail for Australia. It saw Napoleon defeated at Waterloo and the effects of the carnage of WWI. It remained, throughout, much as can be seen today. Stansted airfield was constructed more or less overnight in 1942/43 and was first used for charter flights in 1946 ⁴.
- 2.3 Hatfield Forest is a place of grassland plains with areas of scrub, coppiced woodland and a wide variety of species of pollarded trees. It is an area where local residents could graze their animals on the grassy plains. They could take the wood from the coppices and pollarded trees for fuel, fencing and building materials. The landowner could take the timber and the game. The deer would shelter in the scrub and coppice and be hunted along the plains – rarely, if ever (it seems) by the King.

³ See Turner NT/1A p4 §4.1.

2.4 Hatfield Forest is only a little smaller than once it was, but its supreme interest lies in the fact that

*" ... all the elements of a medieval Forest survive: deer, cattle, coppice woods, pollards, scrub, timber trees, grassland and fen, plus a seventeenth-century lodge and rabbit warren."*⁵ (original emphasis)

But that short encapsulation tends to understate the position in relation to the trees. One or more of those elements might be found in a variety of places, but the sheer longevity of the Forest and its trees marks it out. In the western world ancient trees are very rarely found outside England:

*"Old trees are a rarity in civilised countries. ... From Boulogne to Athens one rarely sees a tree more than 200 years old [they are cut for timber well within their prime]. ..."*⁶

There is a special ecological and biodiversity importance to the veteran trees⁷ of Hatfield Forest. Neither the trees nor the ecological and social system of which they are part can be recreated without going back hundreds of years. Hatfield Forest, and all its constituent parts and practices, is

*" ... almost certainly unique in England and possibly in the World. [It] is the only place where one can step back into the Middle Ages to see, with only a small effort of the imagination, what a Forest looked like in use."*⁸ ... *" [It] is the unique survival, in full working order, of this aspect of human affairs at the zenith of its complexity."*⁹ – with its roots firmly planted in medieval England.

2.5 Hatfield Forest is readily accessible to all. The Trust manages it for the benefit of the nation. It is a NNR and a SSSI¹⁰. Visitors enjoy the comparatively long periods of tranquillity between periods of heightened aircraft activity at STN. They enjoy the Forest for its solitude as well as for its recreational features. It is unique and it is timeless.

⁴ ES vol 4 p32 §3.6.1-2, CD/7.

⁵ Rackham, cited Turner NT/1A p2 §3.1.

⁶ Rackham, cited Turner NT/2A A^x 5 p240.

⁷ English Nature defines a veteran tree as 'a tree which, because of its great age, size or condition is of exceptional value culturally, in the landscape or for wildlife'.

⁸ Rackham, cited Turner NT/1A p2 §3.1.

⁹ Rackham, cited Turner NT/2A A^x 2 p19.

¹⁰ Except for a small area near the visitor centre.

2.6 BAA will be very well aware of Hatfield Forest. But in its appraisal of the effects of its G1 proposals on Hatfield Forest, BAA's material reveals more paper than assessment, more words than substance and more gloss than analysis.

Hatfield Forest – BAA's perspective on the Cultural Heritage

3.1 BAA produces an ES with a volume called "Archaeology & Cultural Heritage"¹¹. This is, as its title suggests, a volume which purports to address cultural heritage as well as archaeology in its narrower sense. It purports specifically to address potential impacts on "the cultural heritage resource"¹² including

*" ... [I]ndirect effects on historic features, such as Listed Buildings and Scheduled Monuments resulting from material changes in environmental factors such as noise or visual intrusion, occurring largely during operation of the Airport"*¹³

And

*" ... including ... direct impacts to settings (reducing the appreciation of the resource such as Listed Buildings and Scheduled Monuments)."*¹⁴

It is notable that the criteria adopted for assessing impact include

*"intrusion on setting, change in noise or visual ambience."*¹⁵

But nowhere in the analysis of effects is the 'base line', or the future setting or visual (or other) ambience of Hatfield Forest addressed at all. Is Hatfield Forest and its attributes described in the analysis? No. Is Hatfield Forest even mentioned in the assessment of effects? No.

3.2 It is then, remarkable, that without any specific assessment of Hatfield Forest, its ambience, significance or historical or cultural associations, the volume concludes that:

*"**No** direct primary or secondary impacts (including issues of setting) to Designated Sites^[16] within ... the broader [sic] 1km Study Area have been identified from the 35mppa case. This is due to two factors:*

- *Most of the proposed facilities are effectively screened at ground height from the land outside of the Airport boundary by topography, vegetation or existing facilities or structures; and*

¹¹ ES vol 4, CD/7.

¹² ES vol 4 §1.1.1, CD/7.

¹³ ES vol 4 §1.1.1, CD/7.

¹⁴ ES vol 4 §2.1.2, CD/7.

¹⁵ ES vol 4 §5.2.3, CD/7.

¹⁶ As defined in the Glossary in a manner which would embrace Hatfield Forest: ES vol 4, at front, CD/7.

- *Where potential increases or changes in noise or light have been identified from the proposals the net impact of such potential effects is generally negligible compared to existing impacts from existing facilities.”¹⁷ (emphasis added)*

Hatfield Forest - BAA's other assessments

- 4.1 Compare this position with the position described in the Landscape and Visual Impact volume of the ES. Here, its authors (working to the same limited 1km assessment zone) describe the part of Hatfield Forest closest to the airport as having a
- “ ... sense of place ... characterised by an assemblage of rural features, a strong sense of history and a feeling of timelessness. ... Because of the historic and recreational importance of Hatfield Forest, the views from Takeley Hill are probably some of the most sensitive to adverse change in the whole [1 km] study area.”¹⁸*

Where is any of that ‘sense of place’ and ‘strong sense of history’ or ‘feeling of timelessness’ reported in the Cultural Heritage assessment from the cultural heritage perspective? Nowhere. Where are the effects on these factors described? Nowhere.

- 4.2 The authors of the Landscape and Visual Impact volume of the ES ultimately draw the conclusion that there is an impact on the Forest within the 1 km zone (from on-airport lighting) but say that the impact is much the same as the base case¹⁹. We may differ over the conclusion, but we also note the limitations on the study. Whilst landscape and visual impacts are sometimes inter-muddled with landscape character impacts in the assessment, that is not the main point here. The main point is that the effects of the sight (and sound) of aircraft in the air are not addressed (except when they are within the airport perimeter). That is because (it seems) airborne aircraft only enter into the equation when addressing the landscape character of the airport itself. They do not enter the equation when assessing visual impact or impact on the landscape or historical character of areas outside of the airport – not even within the limited 1km study area.
- 4.3 So, if and to the extent that the Cultural Heritage ES draws on the Landscape and Visual impact volume (and it does not so say) it suffers the same failings: impacts on setting, character and ambience of Hatfield Forest from the sight and sound of aircraft

¹⁷ ES vol 4 p15 §10.3.1, CD/7.

¹⁸ ES vol 9 §11.3.83 -84, CD/12.

¹⁹ ES vol 9 §11.3.83 -84, CD/12.

in flight have not been addressed. Admiral Lord Nelson was famous for this kind of approach, but it is not appropriate for an ES which is designed to address “*changes in environmental factors such as noise or visual intrusion*” and changes in “*the appreciation of the resource*” and “*intrusion on setting, change in noise or visual ambience.*” At least two of the specific parameters identified in the Cultural Heritage volume (visual ambience and intrusion from the operation of the airport) plainly cannot be imported into the cultural heritage assessment from the Landscape and Visual Impact volume because they were not addressed there either.

- 4.4 But what of air noise in its own right? Once again, the words ‘Hatfield Forest’ do not appear at all in the Air Noise volume of the ES²⁰. Despite the assessment of the nature and character of even only a fragment of Hatfield Forest in the Landscape etc volume, Hatfield Forest is not ranked by BAA as being a ‘sensitive use’ for air noise purposes²¹. It is (subject only to being rolled up in an overall broad brush assessment of the whole area by reference only to the Leq contours) ignored. It is then specifically ignored as a result of being excluded from the category of ‘sensitive uses’ which do otherwise attract further consideration in this volume²².
- 4.5 But what of the air noise assessment itself? In the Air Noise volume of the ES, the main thesis adopted by BAA is that (i) the only material metric is the $L_{Aeq, 16h}$ (Leq) contour and (ii) anything less than a 3dB change in Leq will not be noticed. That assessment is wrong in its own right and is, in any event, inadequate for assessing the impact on a resource such as Hatfield Forest. If Leq is used as the only or main parameter for assessing the effects of ‘air noise’, its use can be positively misleading – and BAA will be well aware of this.
- 4.6 BAA will well know that the DfT recognises that a change in ‘air noise’ reflecting even ‘only’ ½ dB Leq can be significant²³. But yet in its ES BAA still brushes off changes of 1, 2 and up to 3 dB Leq as ‘unnoticeable’ without further analysis of character and place – or at all²⁴. This broad brush application of folk lore simply will not do for the purposes of assessing the effects at Hatfield Forest. A singularly important value of Hatfield Forest is the comparative tranquillity which can be experienced in between aircraft ‘events’ and groups of aircraft ‘events’. (Take-offs and landings tend currently

²⁰ ES vol 2, CD/5.

²¹ See eg ES vol 2 p21 §10.2.6, CD/5.

²² See eg ES vol 2 p21 §10.2.6, CD/5

²³ See Stigwood NT/3A p21 §5.13.

²⁴ See eg ES vol 2 p27 §10.6.1, CD/8.

to be 'clustered', with gaps between clusters.) Because of the low background sound levels in the Forest, each aircraft will be heard and be a noticeable distraction for longer periods than in an urban context. The tranquillity of the Forest is certainly currently disturbed for the duration of each event. Each event lasts for some little time, so the period of respite between events is less than the number of events would suggest.

4.7 But, as Mr Stigwood demonstrates²⁵, because of the manner in which the airport currently operates (and as it is expected to operate at 25mppa), there are still comparatively long periods of freedom from 'air noise' at various times of day²⁶. An increase in numbers of aircraft movements to the levels postulated by BAA's G1 proposals will involve a marked spreading of the additional movements throughout the day²⁷. The additional numbers and the manner of accommodating the additional numbers for the G1 proposals will, therefore, have a disproportionate impact on the periods of tranquillity which is so much a feature of the whole experience of the Forest – part of its "*strong sense of history*", its "*timelessness*" and its "*sense of place*". The inevitable changes in "*noise and visual intrusion*" and in the "*appreciation of the resource*" as well as the "*intrusion on setting*" will be patent – but they are all wholly ignored by BAA. So, whilst Mr Rhodes is lately drawn onto the field as a 'sweeper', and now Mr Charles produces additional material, the BAA die is already cast and these elements are still ignored.

4.8 BAA also addresses air quality. It has an Air Quality volume in the ES. What is common ground is that whilst BAA's G1 proposals

*"... will cause deterioration in air quality [to varying degrees], there are no beneficial effects"*²⁸

The Trust has formally raised a series of questions in order the better to understand BAA's modelling work on air quality so far as it affects Hatfield Forest for the predicted annual mean concentrations of NO_x²⁹. This modelling work is a crucial element in the assessment of impacts on Hatfield Forest's trees, vegetation, dependent ecology and overall biodiversity.

²⁵ Stigwood, NT/3A p41 et seq.

²⁶ Stigwood NT/3A p41 et seq.

²⁷ As confirmed, eg at ES vol 9 p18 §10.2. 20, CD/12.

²⁸ ES vol 3 §5.3.4, CD/6.

²⁹ See Dr Nick Haycock, NT/2C A^x 4.

- 4.9 But the modelling work and the overall assessment have serious shortcomings for addressing the effects on vegetation. Whilst the Air Quality volume asserts that the modelling work has used "*best practice*"³⁰ it emphatically has not in the context of its suitability for assessing effects on vegetation³¹. Whilst there are many detailed and other points to be resolved, I focus on the model 'validation'. BAA's G1 proposals have been promoted in accordance with its own timetable – it has not been taken by surprise. It has had the opportunity to ensure that that its model was based on (and validated against) a spread of robust baseline data. But it is plain that it has 'validated' against an insufficiently robust database – in time and in space. The model, which looks to annual mean NO_x concentrations over a wide area
- (i) has only been 'validated' against 7 months' measured data³²,
 - (ii) has only been 'validated' against one monitoring station within this wide area³³, and
 - (iii) has no reliable cross-checking (or co-location) data against which to check the alignment of measured and modelled results³⁴.

The model validation is (expressed at its kindest) weak. The highest that even BAA's team feels able to report on the validation of the model is that the validation exercise provides something of a "*sanity check*"³⁵. BAA plainly needed more time and data in order to secure a robustly validated model, but appear to have taken no steps to address matters.

- 4.10 The ecological value of Hatfield Forest is recognised by its status as a NNR and as a SSSI. It is common ground that, at its lowest, it is of European (international) significance³⁶. BAA's approach to addressing the effects on a site with such attributes using a make-do-and-mend modelling approach is wholly inadequate. It undermines the ability of the ultimate decision-maker to address the Biodiversity Duty³⁷. BAA had and continues to have the resources and the time to carry out an incontrovertibly thorough modelling appraisal which was properly validated and it has not (at least not yet) done it. It would be wholly irresponsible to shelter behind a defective appraisal on the basis that it is 'all that we have got to go on' – the job must be done properly if

³⁰ ES vol 3 p4 §5.1.1, CD/6.

³¹ Haycock NT/2A p17 *et seq* §§3.3 - 3.8.

³² Haycock NT/2A p14 §3.4.

³³ Haycock NT/2A pp18, 19 §§3.4.2, 3.5.2.

³⁴ Haycock NT/2A p19 §3.5.1.

³⁵ Haycock NT/2A p18 §3.4.2.

³⁶ ES vol 10 p43 §8.12.15, CD/13.

³⁷ Natural Environment and Rural Communities Act 2006 s.40.

the biodiversity duty is to be addressed. The tools and the resources are available, but BAA has not deployed them.

- 4.11 But it goes further. The only NO_x concentrations which have been assessed are the annual mean NO_x concentrations. There is no mention at all (still less any assessment) of the NO_x concentrations over shorter time periods than an annual mean: which can be just as, if not more, damaging for vegetation³⁸. The WHO makes recommendations over maximum 24-hour mean atmospheric NO_x concentrations³⁹, but BAA has singularly failed to address that aspect at all.
- 4.12 But there is, says BAA in the ecology volume of the ES, no possible mitigation for NO_x concentrations in any event, other than to monitor the resulting levels⁴⁰ – with no suggested strategy (or controls over airport operations) for addressing or halting any harm which that monitoring reveals. BAA would continue to fiddle while Rome burned. This Forest contains trees (with dependent ecology contributing to a rich biodiversity) which are many centuries old. The balance which has been struck over the centuries deserves more respect.
- 4.13 The potential threats from NO_x concentrations are apparent and real. BAA must demonstrate that the assemblages in Hatfield Forest will not be adversely affected by air pollution from its G1 proposals. A biodiversity resource which is unique in Europe, if not in the World is at stake.

Summary

- 5.1 The obvious place to find a central assessment of the effects of BAA's G1 proposals on Hatfield Forest would be the Cultural Heritage volume of the ES, but there is no such assessment. And save for one reference in the Landscape and Visual Impact volume to one aspect of the effects on Hatfield Forest (within the 1 km zone), BAA has failed to address the quality and the qualities of Hatfield Forest as a whole. The conclusions in the Ecology volume of the ES depend upon the work done for Air Quality, and that work is flawed and incomplete. As is the assessment in the Air Noise volume. In short, the individual assessments in the ES for
- Landscape etc (i) Ignores the visual impact and effect on the landscape

³⁸ Haycock NT/2A p122 §4.1.1.

³⁹ Haycock NT/2A p22 §4.1.

⁴⁰ ES vol 10 §13.2.1, CD/13.

character of Hatfield Forest associated with the sight and sound of approaching and departing aircraft and (ii) fails to address these effects on the special character of the Forest.

- Cultural Heritage Ignores the effect of the sight and sounds of the airborne aircraft on the setting and ambience of the Forest.
- Air Noise (i) Relies almost exclusively on the Leq average of averages without (ii) addressing the effect on tranquillity within the Forest and (iii) fails even to acknowledge the Forest as a sensitive place. It also perpetuates (and relies upon) the myth that 3dB universally marks the onset of perception of change for a 16 hour LAeq.
- Air Quality The assessments depend upon an inadequately validated model and are flawed and incomplete.
- Ecology Whilst the ecology ES recites that Hatfield Forest is of “*European significance*”, it relies upon the output of the air quality modelling exercise and is dependent upon its insecure results.

These individual assessments are incomplete where they are not flawed. Whilst BAA has not even attempted to address (or at least, to report) the cumulative effects of these factors on Hatfield Forest, no such assessment can soundly be based upon this material.

Overall

- 5.2 We should not need to be here. We have to be here because BAA’s basic assessments variously ignore Hatfield Forest, are dismissive of the inevitable impacts on the Forest, or understate the impacts through incomplete and flawed analysis.

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