



WYCOMBE AIR PARK

Noise Management & Action Plan

2013 – 2018

**This is a draft document
subject to formal adoption and approval by the Secretary of
State for Environment, Food and Rural Affairs**

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Forward by General Manager Airways Aero Associations Limited

Wycombe Air Park (Booker) has a long history of flying activity, having been identified by the RAF in the 1930s as a location where a civilian flying school could provide elementary training to military pilots. In the intervening 80 years the airfield has provided training to future pilots, being proud of its strong and continued links with both the community and academia. In addition, the airfield maintains a thriving core of recreational pilots and associated activities.

Of course, we are acutely aware of the responsibility we have within the community. Inevitably, the nature of our activity brings challenges, not least the impact of the noise we create. This is an unfortunate by-product of aviation and over the years we have developed practices and procedures that endeavour to ameliorate our impact. The recent introduction of GPS tracking technology has assisted us in identifying many of the underlying issues whilst ensuring greater transparency. That said, we are not complacent and recognise that we must continue to embrace new ideas and technology in order to manage environmental noise within the context of sustainable development.

Looking to the future, we believe we have a strong part to play within the community and, as part of our ongoing relationship with Wycombe District Council, welcome the opportunity to discuss our roles and responsibilities in seeking local solutions to issues we generate. This Noise Management & Action Plan plays a single, but significant, part in that process.

We are wholly committed to behaving as a responsible and good neighbour.



David Phillips

November 2013

1.0 EXECUTIVE SUMMARY

1.1 This draft document looks towards building on the existing noise management measures in place at Wycombe Air Park. It sets out to manage and, where possible, reduce the effect of noise on the surrounding community.

1.2 The proposals set out in this draft Noise Management and Action plan aim to:

- Demonstrate our ongoing commitment to noise reduction and mitigation
- Engage with the surrounding community to better understand their concerns
- Meet the requirements of the EU Environment Noise Directive and associated regulation

1.3 Section 2 of this document sets the scene and describes the process followed in the generation of this plan. We have liaised with a wide-spectrum of shareholders ranging from district councils through parish councils to representative groups and organisations. The action plan considers both noise and nuisance, the latter being a notable issue to some elements of the community.

1.4 The regulatory framework is described at Section 4 with Section 5 highlighting the wide-ranging noise amelioration measures we already have in place. It must be emphasised that the air park has voluntarily adopted a large number of different procedures over the years to the point whereby the nature of our activity significantly diverges from normal aviation practise. Furthermore, whilst helicopter activity has remained relatively constant for the past two decades, overall activity is less than half that of the early 1980s.

1.5 Section 6 presents the results of noise mapping completed by the CAA in 2012 with our forward looking plan being described at Section 7. Many of our proposed measures are dependant on the renegotiation of the Head Lease with Wycombe District Council; we cannot commit to significant expenditure without the assurance of a renewed tenancy. Obviously, noise abatement may form part of the lease renewal and we remain committed to ongoing positive discussions with Wycombe District Council.

1.6 Perhaps the most important elements of the draft plan are the responses at Appendix D as these clearly indicate areas of mutual agreement, reappraisals by the Air Park and areas where there is still some divergence of opinion.

2.0 INTRODUCTION

2.1 Purpose

This Draft Noise Management and Action Plan has been prepared to show how Wycombe Air Park intends to manage noise issues and effects arising from airfield operations and, where possible, improve the noise climate around the airfield during the period 2013 to 2018. It reflects our commitment to controlling the adverse effects of our activity and minimising its impact on the local community.

The Draft Noise Management and Action Plan has been prepared in accordance with the Environment Noise (England) Regulations 2006 (referred to in this document as ‘the Regulations’) and is based on the results of strategic noise mapping produced under the terms of the Regulations, reflecting the Government’s aim to limit and where possible reduce the number of people significantly affected by aircraft noise. Noise Action Plans are a legal requirement throughout the European Union under the EU Environmental Noise Directive (Directive 2002/49/EC).

Noise from aircraft, particularly those which fly repetitive circuits, continues to be a significant concern for elements of our surrounding community. Through this Noise Management and Action Plan, we are seeking to formalise the noise management programme that we have been undertaking in recent years into a set of actions that will enable us to make worthwhile improvements. Importantly, we wish to look beyond the legal framework of Noise Action Plans, wanting to proactively engage with the community in developing local solutions to wider issues. We welcome your feedback on the proposals we are making.

2.2 Scope

The Action Plan must be drawn up for places near the Air Park, which means those places affected by noise from the Air Park as shown by the results of strategic noise mapping. Strategic mapping was undertaken in July 2012. The Action Plan is required to consider noise issues from aircraft taking off and landing within the area shown on the maps within the outer recorded contour line. The maps are included at Appendix A. It should be noted that in recognising the wider context of noise impact the Air Park has procured additional maps to incorporate both helicopter and Summer month $L_{Aeq,16hr}$ data. In this respect, the Action Plan goes beyond the legal requirements of the Regulations. This Draft Action Plan includes actions for the period 2013 to 2018.

2.3 Process and Consultation

The Regulations require the airfield operator to prepare an Action Plan for the Air Park. Airways Aero Associations Limited wholly operates the Air Park on behalf as the head leaseholder with Wycombe District Council being the landlord. The Government has provided guidance on the scope, process and approach that is to be followed.¹ The Regulations include specific requirements that the Action Plan should meet.

We have engaged with the Wycombe Air Park Joint Consultative Committee (JCC) at a number of levels in the preparation of this document. We have also liaised with Wycombe District Council, organisations operating from the Air Park and have obtained specific technical advice from DfT and Defra. Strategic noise mapping was carried-out by the CAA (ERCD). As part of the action plan process the Air Park is required to carry out a formal public consultation exercise. The consultation will be through the JCC whose members include representatives from local residents associations and groups together with members of the district and parish councils. The Air Park considered that the consultation should be in two phases – initially within the JCC followed by a wider public consultation. The JCC discussed the need for wider consultation and the overwhelming opinion was that the JCC represented enough of the affected community to warrant no formal consultation outside of the committee; the Air Park accepted this view. Following the consultation, Wycombe Air Park will carefully consider all the views expressed and comments received, and where possible, reflect these in the final plan. The Draft Wycombe Air Park Noise Management and Action Plan will then be submitted for adoption to the Secretary of State for Transport by 1 December 2013. The Secretary of State will then form a view regarding

¹ Guidance for Airport Operators to produce airport noise action plan under the terms of the Environmental Noise (England) Regulations (as amended) – Defra March 2009

whether or not the Draft Noise Management and Action Plan meets the requirements of the Regulations and whether or not the plan is appropriate for adoption. If the requirements are met the Secretary of State for Transport will recommend to the Secretary of State for Environment, Food and Rural Affairs that the Noise Management and Action Plan should be adopted.

3.0 WYCOMBE AIR PARK LOCATION & DESCRIPTION

Wycombe Air Park is a medium sized General Aviation airfield located to the South of High Wycombe, immediately adjacent to the M40 motorway being bounded by an Area of Outstanding Natural Beauty. The airfield has been under continuous use since the late 1930s initially providing flying training under contract to the MoD. Barring a small enclave of former military housing located on the airfield boundary, the closest significant residential areas are Booker & Sands to the North East and Lane End & Frieth to the North and West. The airfield is surrounded on three sides by the Chilterns Area of Outstanding Natural Beauty. There are a number of semi-rural/rural habitations in the immediate area many of these supporting, or having previously supported, the agricultural industry. Wycombe District Council let the Air Park in its entirety to Airways Aero Associations Ltd (formerly part of British Airways) with this lease being due for renewal in September 2014.

3.1 Air Park Details

The Air Park has one hard runway (06/24) which is 753m in length and 23m wide. There are two grass runways, 06/24 and 35, of length 610m and 695m respectively. The Air Park has two departure and two arrival routes for runways 06/24 (hard and grass) with a single departure and arrival route for runway 35. Additionally, gliding activity takes place from the area to the South of the grass runway with all gliders being launched by aero-tow.

Flying activity reflects that of most General Aviation airfields with a wide spectrum of private and commercial training, visiting aircraft, recreational flying and maintenance. There are no scheduled flight operations. There is significant aviation business diversity at the airfield with a vintage aircraft restoration company, three aircraft engineering companies, a gliding club, two fixed-wing flying schools (one of which operates microlights) and two helicopter operators. In total, there are 135 employees at the Air Park who either directly support or are reliant upon the flying activity. Over recent years the Air Park also has developed links with local universities providing flying training to over 70 students as part of their BSc (Hons) studies during the 2013 academic year. The Air Park operates a system of preferential runway use in favour of the hard runway 06/24. Direction of runway usage is very much determined by weather conditions although, due to the presence of gliding activity, fixed wing powered activity is predominantly constrained to operating in the airspace to the North and West of the airfield.

In addition to aircraft noise originating from Wycombe Air Park, the surrounding areas to the North and East are affected to varying degrees by road traffic noise generated from the M40 motorway.

4.0 BACKGROUND TO NOISE AND REGULATION

There are three main tiers of regulation governing aircraft noise in the UK: International, European and National.

4.1 International Regulation

At an international level, the International Civil Aviation Organisation (ICAO) sets progressively tighter certification standards, known as Chapters for noise emissions from civil aircraft to which member countries' fleets must conform.

In addition to these specific requirements, the ICAO requires member states to adopt a "balanced approach" to noise management which looks beyond individual aircraft to reduce noise impact through:

reduction of aircraft noise at source;

land-use planning;

changes to operational procedures;

and restrictions on the use of the noisiest aircraft.

4.2 European Regulation

The European Union (EU) is increasingly assuming responsibility for the regulation of noise standards. The Directive of most relevance to Wycombe Air Park is EC Directive 2002/49/EC (Environmental Noise Directive or END), which requires member states to create noise maps of noise from all transport sources in urban areas by 2007, and to adopt action plans to manage noise by 2008. The Directive also aims to harmonise methods for measuring noise across the EU. This is the Directive under which we have produced this Draft Noise Management and Action Plan.

4.3 National Regulation and Policy

The UK Government has an important role in setting and developing the policy framework for aircraft noise control at UK airports and has prescribed a range of controls on aircraft noise impacts. In December 2003 The Future of Air Transport White Paper outlined several new policies for airports which control, mitigate and compensate for aircraft noise.

Full details of the range of aircraft operations related noise controls are set out in statutory notices and published in the UK Aeronautical Information Package and elsewhere as appropriate. These controls include aspects such as Continuous Descent Approaches (CDAs), noise abatement procedures and night flight limits.

The UK government also passes Acts of Parliament and Regulations which deal with aircraft noise as detailed below:

The Civil Aviation Acts of 1982 and 2006 grant the Government and airports powers to introduce noise control measures, including mitigation. Section 5 of the Acts indicates that it shall be the duty of the CAA to have regard to the need to minimise so far as reasonably practicable any adverse effects on the environment and any disturbance to the public, from noise, vibration, atmospheric pollution or any other cause attributable to the use of aircraft for the purpose of civil aviation. The Air Park is currently subject to a Section 5 application from Wycombe Air Park Action Group (WAPAG).

These Acts also permit an airport operator to charge aircraft operators for use of the airport based on noise and emissions. Airport operators can thereby introduce differential charges to incentivise the use of quieter and cleaner aircraft.

The Aerodromes (Noise Restrictions) (Rules and Procedures) Regulations 2003. They reflect the adoption of the ICAO balanced approach to achieving noise objectives. The regulations also set out the procedures which airports should follow when considering noise related operating restrictions.

The Environmental Noise (England) Regulations 2006. These regulations transpose the requirements of EC directive 2002/49/EC into UK law. They place a duty on the Secretary of State to produce strategic noise maps and, under Regulation 18, airport operators are obliged to produce Noise Action Plans based on the strategic noise maps. Once prepared and adopted, the Noise Action Plans must be reviewed at least every five years and whenever a major development occurs affecting the noise situation.

Aeroplane Noise Regulations 1999. These regulations set out the noise certificate requirements for both propeller and jet aeroplanes registered in the UK. They stipulate that no aircraft can land or take off in the UK without a noise certificate issued by its competent authority, which meets at least equal requirements to those for UK registered aircraft. The regulations make reference to noise certification standards and noise limits issued by ICAO and also provides a list of aircraft that are exempt from the ICAO noise certification.

The Noise Policy Statement for England (March 2010). This sets out the long term vision for Government noise policy which is to:

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development

There are five guiding principles of sustainable development:

Ensuring a Strong Healthy and Just Society

Using Sound Science Responsibly

Living within Environmental Limits

Achieving a Sustainable Economy

Promoting Good Governance

4.4 Planning Policy

The Government's land use planning policies for aircraft noise are set out in National Planning Policy Framework published March 2012. This document gives advice on how the planning system can be used to minimise the adverse effects of noise.

4.5 Implementation of the END in England

The Environmental Noise (England) Regulations 2006 (the Regulations) which implement the END in England came into force on 1st October 2006.

The Regulations provide for:

The preparation of strategic noise maps for large urban areas (referred to as agglomerations), major roads, major railways and major airports;

The preparation of action plans based on the results of the noise-mapping exercise;

Publication of the noise maps and action plans.

The Regulations help identify:

Whether there are any people unnecessarily exposed to high noise levels, suffering accordingly and causing a cost to society; and

What areas of relative quiet we might or could have, thus enabling us to develop measures to protect them and not have the noise environment inadvertently eroded.

This information will enable a better understanding of how the noise environment near major roads, railways and airports is changing. Policies can be developed that will enable strategic noise management to be carried out alongside the processes and procedures that already exist to address individual situations.

The Regulations require the noise mapping and action plan process to be taken forward on a five-year rolling programme. Major airports were included in the first round of mapping with Wycombe Air Park being encompassed by the second round². Noise action plans (NAPs) “designed to manage noise issues and effects, including noise reduction if necessary” based on the noise maps must be developed to address the noise climate established during the mapping process. The action plans must contain a complete description of the measures to be taken to reduce noise pollution.

As part of the Second Round of the END, Wycombe Air Park is required to produce a noise action plan since the L_{den} 55dB(A) contour abuts the High Wycombe (Booker) agglomeration. Where the noise contours for the airport affect an agglomeration it is necessary for the airfield operator to ensure that the action plan is complementary to that of the agglomeration. It is expected that this specific plan will ultimately form part of a wider High Wycombe Agglomeration Plan.

4.6 Measuring Noise

The UK uses the Equivalent Continuous Sound Level, dB L_{Aeq} for this purpose which provides average noise levels for the busiest hours of the day, between 0830 – 2000 over the busiest three months of the year, from mid June to mid September. This is the most common international measure of aircraft noise.

The Government believes that communities become significantly annoyed by aircraft noise above 57dB L_{Aeq} . However, Wycombe Air Park recognises that whilst the 57 dB L_{Aeq} contour provides some basis for action to identify and try to reduce the noise climate, it does not on its own communicate the full extent of noise and annoyance impact on local communities.

The Environmental Noise (England) Regulations 2006 require that strategic noise mapping should be conducted at five yearly intervals. The regulations require a different range of noise parameters: L_{day} , $L_{evening}$, $L_{Aeq-16hr}$, and dB L_{den} . These parameters are based on air traffic movements over the entire year, unlike conventional dB L_{Aeq} contours that are based on air traffic during the busiest summer months. Contours for strategic noise mapping are presented in 5 dB steps from 55 dBA to 75 dBA.

The fundamental differences in methodologies for calculating dB L_{Aeq} and dB L_{den} contours leave it difficult to make meaningful direct comparisons. In general terms, the area of the dB L_{den} contours tends to be larger than those for dB L_{Aeq} due to the weightings for evening and night flights. Although the weightings do not directly accord with perceptions, it is clear from community engagement and surveys that night time and evening activity tends to cause greater annoyance and disturbance than flights during the daytime. It is also clear to the Air Park that quantifiable noise mapping is only one part of the issue with there being a more subjective repetitive annoyance factor brought about by circuit flying in the vicinity of Frieth and Lane End. Furthermore, whilst background noise levels to the East of the airfield are typical of populated areas, the ambient levels to the West are lower, being more representative of the rural environment surrounding many general aviation airfields.

² Second round noise mapping is to take place for agglomerations which have a population in excess of 100,000 persons and a population density such that member state considers it to be an urbanised area.

5.0 NOISE MANAGEMENT AT WYCOMBE AIR PARK

Over the years the Air Park has developed and implemented procedures with the aim of managing and monitoring noise associated with aircraft movements. In 1991 DfT commissioned the “O’Connor Report”³ which was an independent study into aircraft noise mitigation measures at both Redhill Aerodrome and Wycombe Air Park. The report was wide-ranging and made a number of interesting observations about training aerodromes, not least the rationale behind increased activity at weekends and the sensitivity of recreational flying training to weather conditions. The report also acknowledged that it was inevitable that trainee pilots would digress from noise management measures. The report analysed procedures that were already in place, making a small number of additional recommendations which were addressed by the Air Park. However, the report concluded that:

“... apart from the points noted above I see no way of making the noise abatement procedures or their enforcement more effective.”

O’Connor went on to state:

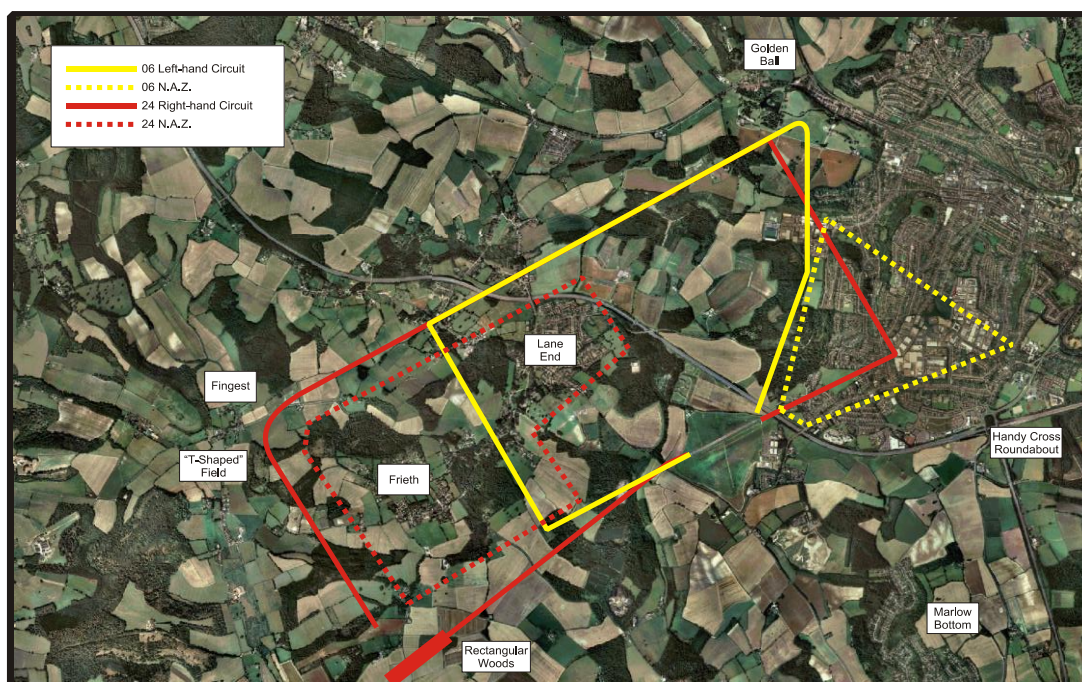
“Only a reduction in overall movement rates, or the removal of helicopter operations, would have a major effect on the attitude of the local population.”

The O’Connor Report has been used as a key reference document by many parties for over two decades. Importantly, a large number of his observations and recommendations still have relevance.

5.1 In Place Noise Management Procedures

A significant number of procedures have already been adopted by the Air Park:

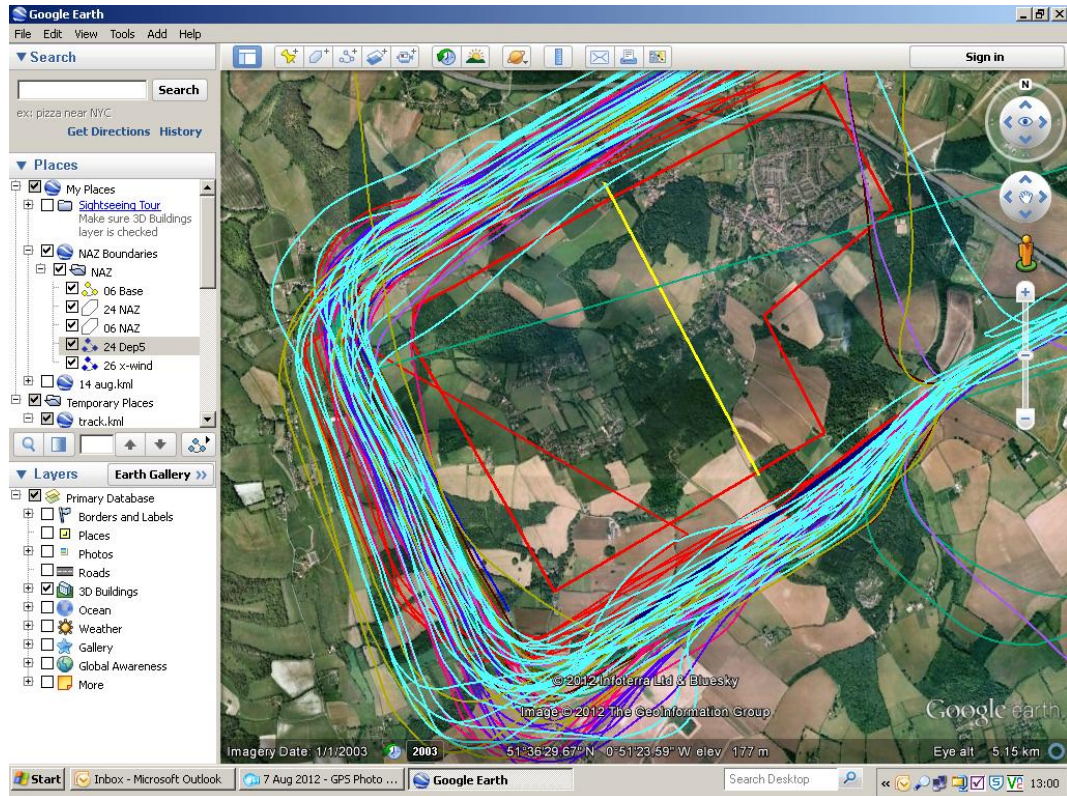
Distorted and extended circuit pattern on runway 24 designed to avoid the residential areas of Frieth and Lane End. This pattern commences with a 10° left turn immediately after departure before ensuring a continuous climb to 2 nautical miles and 1000ft to the South West, extending outside of the protected airspace ordinarily provided by the Aerodrome Traffic Zone (ATZ) before turning around the outside of Frieth. Normally, such a pattern would extend only one nautical mile from the departure end of the runway and, for safety, remain well within the ATZ.



³ Study into Aircraft Noise Mitigation Measures at Redhill Aerodrome & Wycombe Air Park – November 1991

The implementation of a large non-standard left turn after departure on runway 06 in order to avoid properties located beneath the extended centre line of runway 06/24 (Booker/Sands).

Introduction of GPS tracking for aircraft operated by the Air Park's flying school in order to ensure compliance with agreed noise abatement procedures (see exemplar image below). Data obtained is used to debrief pilots, identify trends and respond to complaints.



Example of GPS data log

Voluntary provision of Noise Abatement Zones (“no fly” areas).

Phasing-out of older twin-engined training aircraft, these having been replaced by modern quieter technology.

Landscaping of the aerodrome boundary, including the building of an earth bund, to reduce helicopter noise impact to a specific conurbation.

Robust pilot briefing procedures.

Individual complaint handling by senior management.

Regular Joint Consultative Committee meetings, reconstituted in November 2012 to:

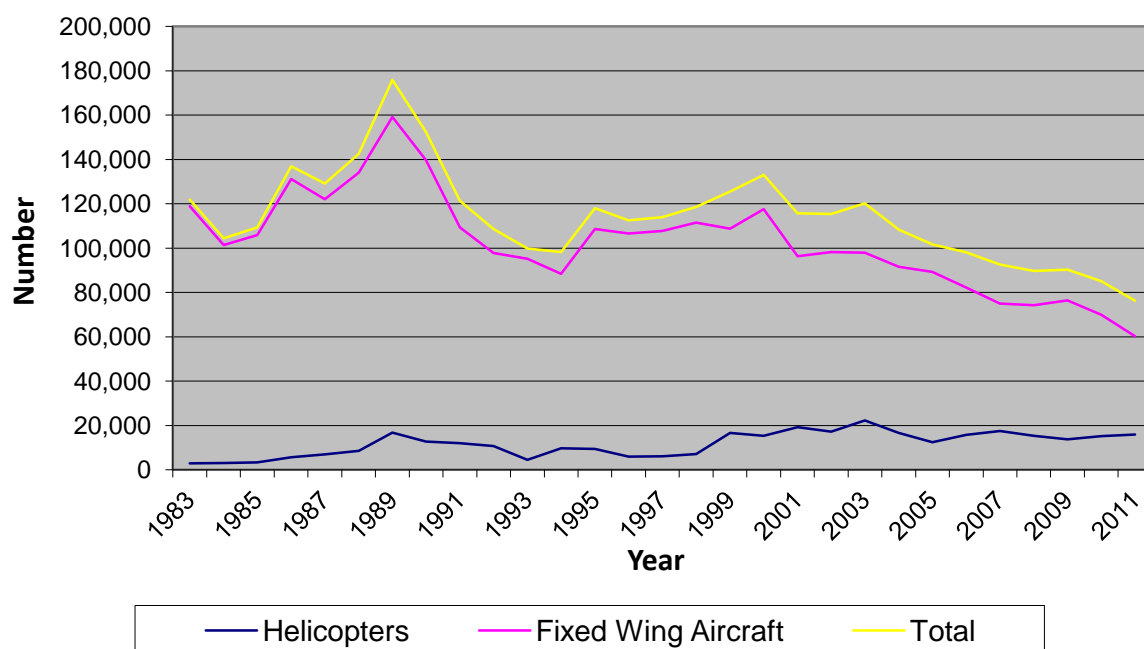
- ensure more representative and balanced membership;
- enable public attendance;
- develop more proactive and worthy communication;
- adjust voting rights, removing the vote of the Air Park operator;
- provide greater transparency across the community with online publication of minutes.

The Air Park believes that the recently reconstituted JCC should make a significant impact regarding our relationship with the community and there is now scope for real progress to be made through this forum.

5.2 Aircraft Movements

The total number of aircraft movements at the Air Park has reduced by 54% since the O'Connor Report was produced. In 1990 (the last year's data available to O'Connor) there were a total of 152,352 movements whereas in 2011 there were 70,365 movements. We have no clear statistical data relating to how many of these movements relate to circuit flying but would estimate this to be in the order of 60-70%. It is accepted that over the same time period the level of helicopter activity has increased (from 12,754 to 15,942) but this has remained relatively consistent since the mid 1990s. In 2011 helicopters accounted for 26% of all movements but attracted only 19% of total complaints received with one specific hotspot contributing 62% of these observations. Considering the current economical climate, the Air Park does not anticipate that there will be any significant change in demand for general aviation activities over the next five years.

Aircraft Movements at Wycombe Air Park



5.3 Objective for the Management of Aircraft Noise

Wycombe Air Park has set the following long term objective for the management of aircraft noise:

“Working within the frameworks of Noise Policy and Sustainable Development established by national and local government, the Air Park seeks to be a responsible neighbour, continuously aiming to minimise as far as reasonably practicable the impact of aircraft noise.”

6.0 NOISE MAP PRODUCTION

Strategic air noise maps were produced in terms of L_{den} , L_{day} , $L_{evening}$ and $L_{Aeq,16h}$. As the Air Park does not operate during the night time hours (23:00 – 07:00) the L_{night} noise maps were not produced.

The INM noise modelling software used data relating to the geometry of the runways and routes. All data was provided by the Air Park, with the exception of the glider tug routes that were provided by the Booker Gliding Club. Figure 1 illustrates the aerodrome geometry with runway and helipad labels as described below, Figure 2 the fixed wing routes and Figure 3 the helicopter routes. Note that red and blue lines denote arrival and departure routes respectively.

Figure 1: Aerodrome geometry and INM runway designations

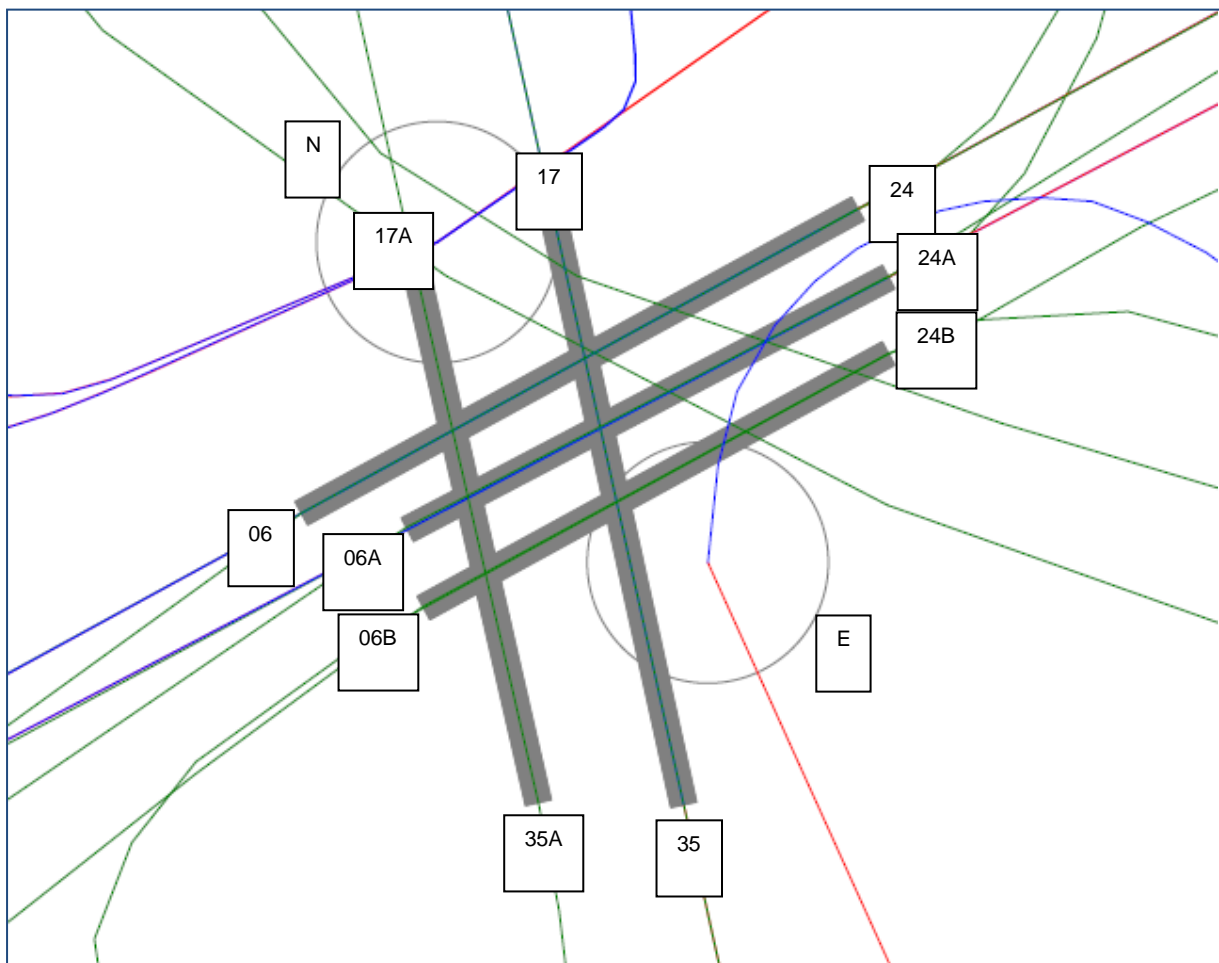


Figure 2: Fixed wing route geometry

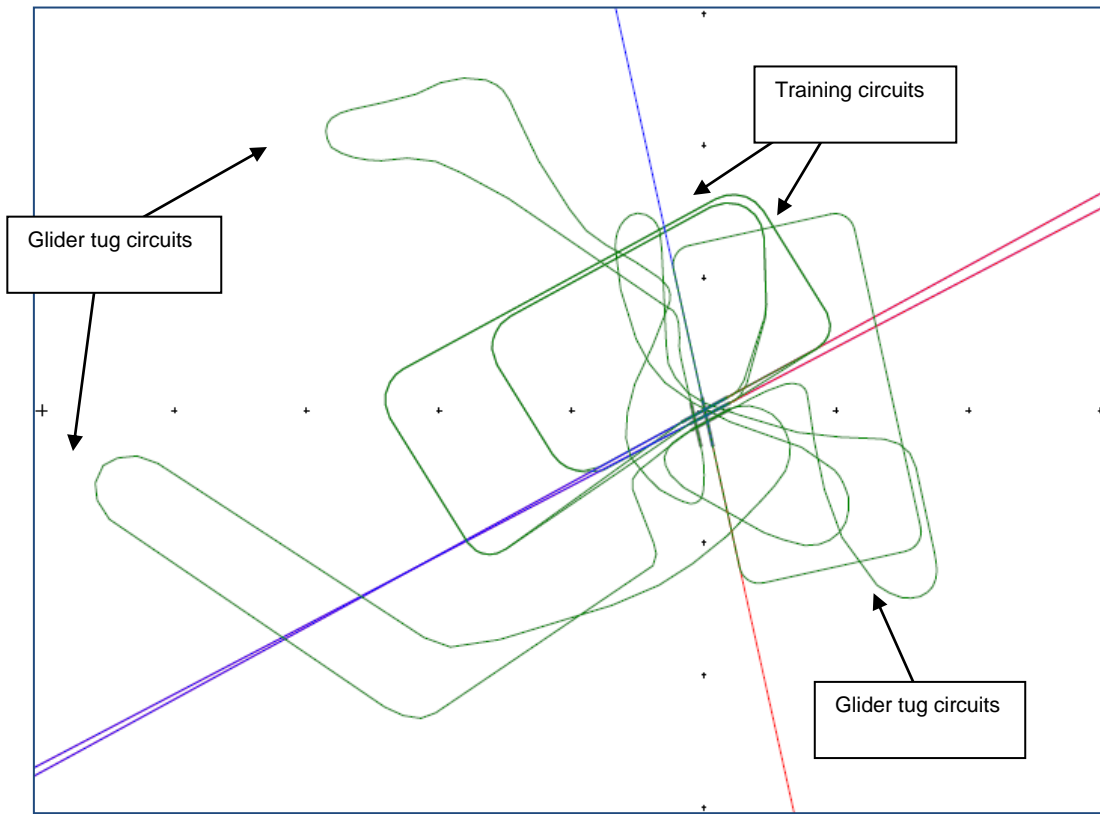
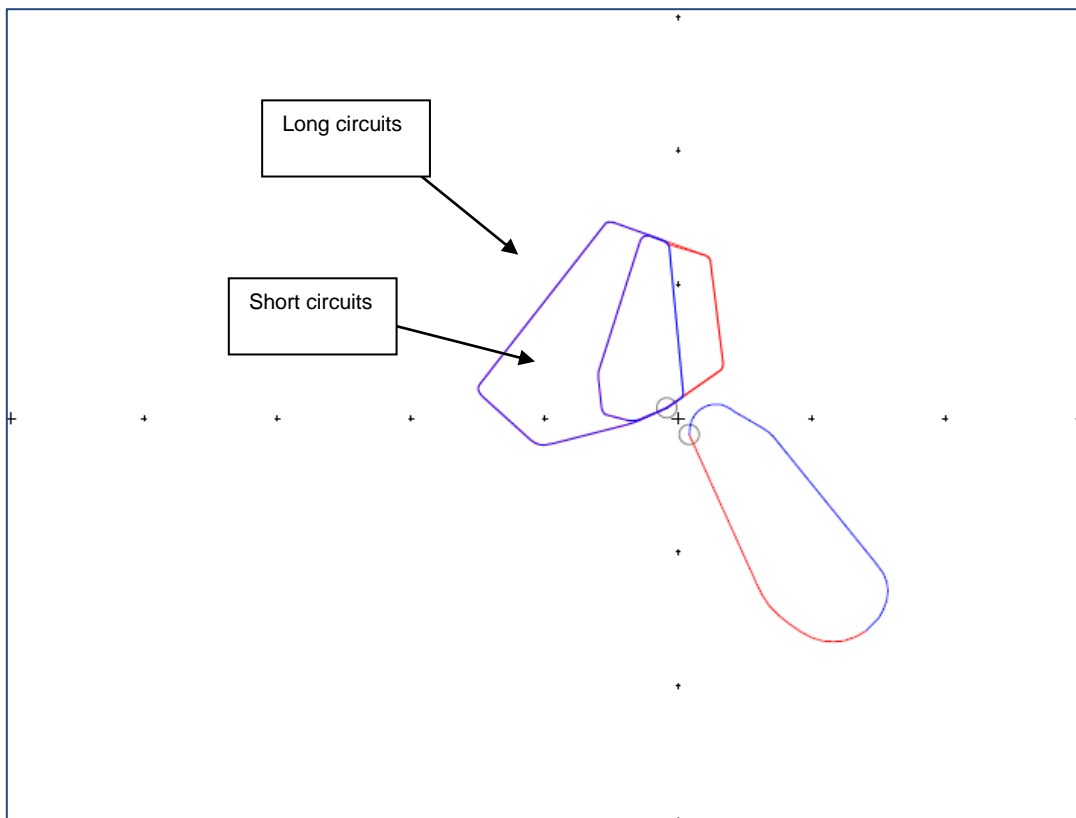


Figure 3: Helicopter route geometry



The Air Park comprises one asphalt strip (runways 06 and 24), a parallel grass strip to the south of the asphalt strip (also runways 06 and 24, denoted 06A and 24A in INM – see Figure 1), and an approximately perpendicular second grass strip used only in a northerly direction (runway 35). Additionally, gliders and tugs operate from a grass area parallel to, and further south of, the 06-24 grass strip (denoted 06B and 24B in INM) and a similar grass area approximately parallel to, and to the west of, runway 35 (denoted 35A).

Helicopter operations were modelled to operate from the N and E training areas.

Fixed wing departures and arrival operations occur only on runways 06, 24 and 35. There is a left-hand and a right-hand training circuit for aircraft using the asphalt (06-24) and grass (06A-24A) runways – see Figure 2. The circuits lie to the north of the runways so that left-hand circuits operate from runways 06(A) and right-hand circuits operate from runways 24(A). There is also a right-hand training circuit for aircraft using runway 35 which lies to the east of the aerodrome. An alternative left-hand (southern) circuit also exists for runway 24 but was not modelled separately for this study as it is used relatively infrequently.

There are three glider tug circuits, one each for runways 06B, 24B and 35A.

There are clockwise and anti-clockwise helicopter circuits lying to the north of the aerodrome operating from training area N. There are both large and small circuits with departures on the clockwise circuit to be spread over a range of headings. An approximate mean heading has been modelled to avoid over-complicating the geometry without significantly affecting the results. There is also a clockwise circuit operating from training area E.

As INM does not support helicopter circuits, routes have been modelled as separate departure and arrival routes with coincident end and start points respectively. INM extrapolates these tracks out to the edge of the grid beyond the end/start points, but as this occurs well outside the extent of the contours, the effect is considered to be negligible.

Having no radar at the Air Park, no information was available on flight tracks, so valid dispersion assumptions could not be made. No dispersion has therefore been applied to the aircraft tracks.

The study assumes flat terrain at an elevation of 520 feet above mean sea level as identified in the UK AIP (Aeronautical Information Package).

Aircraft Movements

The INM noise modelling software used data relating to the numbers and types of aircraft operating during the assessment period. The annual 2011 movement numbers (one movement equals either one arrival or one departure) were as follows:

Table 1: Aircraft Movement Numbers

Movement type	Number of movements
WAC/AFC fixed wings	26,276
Glider tugs	16,042
Visitors (mostly PA28 equivalents)	12,026
Visitors (Larger Turboprops)	79
Based helicopters	15,942
Total	70,365

Runway and route splits

Aircraft movements were split between the runways as follows. It is estimated that 95% of arrival, departure and circuit operations on runways 06 and 24 occurred on the asphalt strip (06-24 in Figure 1), and the remaining 5% occurred on the parallel grass strip (06A-24A in Figure 1).

Table 2: Runway modal split

Runway direction (mode)	Percentage split
24	67%
06	27%
35	6%

The traffic splits between helicopter 'Long' and 'Short' routes from the N training area are as follows:

Table 3: Helicopter route split

Runway / direction	Long route	Short route
06 / anti-clockwise	60%	40%
24 / clockwise	50%	50%

Daytime / Evening

The daytime and evening split for all aircraft (fixed-wing and helicopter) movements are shown in the table below:

Table 4: Period split

Period	Relevant metric	Movement split
Daytime (before 19:00)	L_{day}	99.486%
Evening (after 19:00)	$L_{evening}$	0.514%

Fleet Mix

Information on fixed-wing training aircraft which operated during 2011 was correlated by using aircraft registration number. The aircraft types for these were obtained and appropriate INM model aircraft types were allocated to each aircraft type using the INM substitutions list. Detailed information could not be provided for the glider tugs, so movements were split equally across the current fleet.

GASEPF and GASEPV are standard INM aircraft model types to represent generic General Aviation Single Engine Propeller Fixed pitch, and General Aviation Single Engine Propeller Variable pitch aircraft types. These were never made part of the ICAO Aircraft Noise Performance (ANP) database and therefore the PA-28 is considered to be the most appropriate model substitution for the types operating at the air park. Consequently, where INM suggested using aircraft model types GASEPF or GASEPV to represent real aircraft, the Piper PA-28 was used instead.

Detailed aircraft type information could not be provided for the ‘visitors - larger turboprops’ category. The Piper PA-31 was used to model these movements.

Helicopter modelling is based on 35% of helicopter movements being undertaken by the Robinson R22, 35% by the Robinson R44, 20% by the Aerospatiale AS355F1 and AS355F2 (both modelled by a SA355F), and the remaining 10% by an Augusta A109.

The fleet mix model input data is presented in Table 5.

Table 5: Aircraft movements input data by type

Group	INM TYPE	Daytime	Evening	Total
Training aircraft (Wycombe Air Centre and Airways Flying Club)	BEC58P	714	-	714
	CNA172	15,316	73	15,389
	PA28	9,230	62	9,292
	PA30	881	-	881
Glider tugs	PA28	15,960	82	16,042
Visitors (mostly PA28 equivalents)	PA28	11,964	62	12,026
Visitors (Larger Turboprops)	PA31	79	0	79
Based helicopters	R22	5,551	29	5,580
	R44	5,551	29	5,580
	SA355F	3,172	16	3,188
	A109	1,586	8	1,594
Total		70,003	362	70,365

Aircraft Profiles

Each model aircraft type has its own vertical climb/approach/circuit profile. Standard profiles were used in the model except in the following cases:

Fixed wing circuit maximum altitude increased from 900 feet to 1000 feet in accordance with the Air Park requirements on circuit height (QFE).

Helicopter circuits were modelled using standard arrival and departure profiles with maximum altitude set to 750 feet in accordance with Air Park procedures on circuit height (QFE).

Profile for PA30 adjusted to a maximum altitude of 987 feet so that the profile fits the ‘short’ circuits operating from 06 and 06A.

The take-off weight of an aircraft affects the level of noise it produces. INM used the journey distance as a proxy for take-off weight, as a greater weight of fuel is required for more distant destinations. The journey distance is expressed in terms of stage length, a unit which represents ranges of distance. Stage length 1 covers a range of 0 – 500 nautical miles which accounts for all departures from Wycombe Air Park. All departures were therefore set to stage length 1.

Validation

CAA (ERCD) staff visited the Air Park on 1st July 2012 and again on 10th July 2012 to measure noise levels of aircraft in order to check the accuracy of the INM model types. Sufficient measurements were made to validate operations of the CNA172 and PA28; i.e. the most common fixed wing aircraft types operating in 2011 as shown in Table 5.

Comparing measurements and INM predictions, the results indicated that INM tended to over-predict noise from these aircraft types. The input movement numbers were therefore adjusted so as to implement the following modifications to the noise levels:

CNA172: -2.8 dB on circuits and departure, -4.6 dB on arrival.

PA28: -1.9 dB on circuits, -1.0 dB on departure, -4.1 dB on arrival.

As there is no differentiation between departures and arrivals with circuit operations, PA28 circuits were validated using the departure adjustment of -1.9 dB which is more conservative than using the -4.1 dB adjustment for arrivals.

Since the mapping of helicopter movements is not covered by the Directive, helicopter model types were not validated for this study.

Noise Modelling Results

Noise calculations were made on a 10 m by 10 m INM Standard-type grid with an extent chosen to accommodate contours down to 50 dB(A). Separate grids were calculated for fixed-wing only operations, and fixed-wing plus helicopter operations. All grids were interpolated to align with Ordnance Survey grid intersections.

Contours were plotted for the interpolated grids for L_{den} , L_{day} and $L_{evening}$ at levels from 55 to 75 dB(A) in 5 dB steps where possible, and $L_{Aeq,16h}$ from 54 to 72 dB(A) in 3 dB steps. Air noise maps representing fixed-wing and helicopter movements during a typical summer day in 2011 were produced in terms of $L_{Aeq,16h}$. Summer is defined as 16th June to 15th September inclusive.

The areas and indicative population and number of dwellings enclosed by the contours were calculated based on extrapolated 2011 census data provided by CACI.

The area, population and dwellings data tables are presented below together with the various contour plots. Results have been provided for each contour level on a cumulative basis, and are shown separately with and without helicopters.

Contour area, and indicative enclosed population and dwellings

L_{den}, fixed-wing only

Noise level, dB(A)	Area, km ²	People	Dwellings
≥55	0.61	8	4
≥60	0.20	0	0
≥65	0.06	0	0
≥70	0.02	0	0
≥75	0.00	0	0

L_{den}, fixed-wing and helicopters

Noise level, dB(A)	Area, km ²	People	Dwellings
≥55	1.10	8	4
≥60	0.48	0	0
≥65	0.20	0	0
≥70	0.07	0	0
≥75	0.02	0	0

L_{day}, fixed-wing only

Noise level, dB(A)	Area, km ²	People	Dwellings
≥55	1.13	8	4
≥60	0.40	0	0
≥65	0.14	0	0
≥70	0.04	0	0
≥75	0.01	0	0

L_{day}, fixed-wing and helicopters

Noise level, dB(A)	Area, km ²	People	Dwellings
≥55	1.87	51	21
≥60	0.77	0	0
≥65	0.34	0	0
≥70	0.14	0	0
≥75	0.05	0	0

L_{evening}, fixed-wing only

Noise level, dB(A)	Area, km ²	People	Dwellings
≥55	0.00	0	0
≥60	0.00	0	0
≥65	0.00	0	0
≥70	0.00	0	0
≥75	0.00	0	0

L_{evening}, fixed-wing and helicopters

Noise level, dB(A)	Area, km ²	People	Dwellings
≥55	0.05	0	0
≥60	0.02	0	0
≥65	0.01	0	0
≥70	0.00	0	0
≥75	0.00	0	0

L_{Aeq16h}, fixed-wing only

Noise level, dB(A)	Area, km ²	People	Dwellings
≥54	1.08	8	4
≥57	0.58	8	4
≥60	0.31	0	0
≥63	0.16	0	0
≥66	0.08	0	0
≥69	0.04	0	0
≥72	0.02	0	0

L_{Aeq16h}, fixed-wing and helicopters

Noise level, dB(A)	Area, km ²	People	Dwellings
≥54	1.79	51	21
≥57	1.05	8	4
≥60	0.63	0	0
≥63	0.39	0	0
≥66	0.24	0	0
≥69	0.13	0	0
≥72	0.07	0	0

**Summer Average L_{Aeq16h} , fixed-wing and
helicopters**

Noise level, dB(A)	Area, km ²	People	Dwellings
≥54	2.21	59	25
≥57	1.30	8	4
≥60	0.78	0	0
≥63	0.49	0	0
≥66	0.30	0	0
≥69	0.17	0	0
≥72	0.09	0	0

NB. Annex VI of directive 2002/49/EC states that the population data should be rounded to the nearest 100 people. However, for information, and in the context of the small aerodrome and small noise exposure contours, exact numbers from the modelling are provided here.

7.0 WYCOMBE AIR PARK APPROACH TO MANAGING NOISE - OUR MANAGEMENT AND ACTION PLAN

The proposed Noise Management and Action Plan is set out below and is reinforced with the table at Appendix B which reflects timelines, performance indicators and people affected.

7.1 Actions to Manage the Effects of Aircraft Noise

The majority of training aircraft operated at the Air Park are based around relatively old technology which was developed long before environmental issues were of any significant concern. There are two main aircraft types within our training fleet, the two-seat Cessna 152 and the four-seat Piper PA28. In recent years, aircraft technology has advanced and the latest designs of general aviation aircraft have a noticeably smaller noise footprint. The Air Park has operated a small number of such aircraft in the recent past and anecdotal evidence is that the annoyance level of such aircraft is significantly reduced. **Consequently, we will develop a programme to phase-out our Cessna 152 aircraft and seek to replace them with modern, more environmentally friendly aircraft. This process will be accelerated on successful renegotiation of the Head Lease and, subject to availability, we aim to complete fleet renewal over a period of 12 months.**

Looking at legacy aircraft, many of these can be retrofitted with exhaust silencers. Silencers are used extensively in Germany and the majority of our four-seat aircraft fleet could be retrofitted. In the past, there has been some dispute about the affect of such silencers with results from previous trials being questioned. However, it is clear to us that any reduction in overall noise impact brought about by the use of silencers would be extremely well received. **Consequently, the Air Park has commenced fitting silencers to the PA28 aircraft fleet with three of five aircraft having been modified to date.**

We are currently in the process of renegotiating the Head Lease with Wycombe District Council. As part of this process there is significant discussion surrounding the management of aircraft noise and the provision of respite from repetitive circuits over or near specific locations. The Air Park feels that constraining flying training activity (ie restrictions on training circuits for certain time periods at weekends) presents an unacceptable business risk and therefore prefers to consider alternative methods for the provision of respite to the majority of stakeholders. It is clear that the main area of concern is in the Lane End and Frieth communities and the Air Park is exploring the opportunities that could be presented by alternating circuit directions to the North and South of the airfield such that Lane End and Frieth are presented with significant and measurable respite. It is entirely feasible that we could deliver a 50% reduction in circuit activity to the North of the airfield whenever the predominant runway (Runway 24) is in use. Our suggestion would be to alternate fixed-wing and helicopter circuits between the North and South of the airfield on a mutually agreed basis using JCC as the mechanism for formulating and agreeing the necessary criteria. The Air Park recognises that this course of action would increase the noise footprint to the South of the airfield which is currently reserved for night time and glider-tug operations. The Department for Transport (DfT) states that there is no legislation or guidance that precludes over-flights of national parks or AONBs. It goes on to state that "Government policy will continue to focus on minimising over flight of more densely populated areas below 7,000 feet. However, where it is possible to avoid over flight of national parks and AONBs below this altitude without adding to the environmental burdens on more densely populated areas, it clearly makes sense to do so." We feel that there is a fine balance to be made between protecting the environment for one area against reducing the annoyance factor for another. **The Air Park believes that such a balance might be achieved by alternating circuit directions and we desire to consider this option as part of the Head Lease negotiations.** Importantly, adoption of such a policy would require notable infrastructure changes at the Air Park together with CAA regulatory approval and, as part of our lease negotiations, we are in the process of ascertaining the investment required to achieve such an outcome. That said, we believe that by adopting this method the level of respite presented to the majority of stakeholders may be far more effective than that achieved by prohibiting training circuits during designated time periods. However, cognisant of the significant changes being considered, we would particularly welcome early cross-community comment regarding this option before committing to any change. In accordance with DfT guidelines **any proposed development of this option would be subject to further consultation.**

7.2 Actions for Monitoring Aircraft Noise

The recent introduction of GPS tracking devices for our fixed-wing training aircraft together with voluntary use by helicopter operators has brought many advantages and has been very positively received by stakeholders. The system allows for identification of errant aircraft, confirmation of compliance with designated routes, re-training opportunities and identification of trends, particularly in areas where there is a specific issue (ie helicopters over Spring Coppice). The GPS data also helps increase transparency and mutual trust. We accept that the system has some deficiencies and does not provide complete visibility of all aviation activity which takes place at the Air Park. Cognisant of this fact, **we will encourage the voluntary use of GPS tracking by all Air Park residents and will mandate the use by based operators (helicopters and fixed wing). We will be proactive and act positively on information obtained from GPS tracking devices.** We are most keen to maximise the potential of such technology.

The current complaint handling system is somewhat laborious and there is scope for error or omission. Furthermore, it does not lend itself to the easy identification of trends or the interpretation of data. **We will develop a modern complaint registration and handling system which will enable us to gather data, identify trends and generate relevant reports for the JCC. Predominately web-based, we will endeavour to ensure that community comment is not hindered or dissuaded due to inefficient feedback mechanisms. We will use this information, combined with GPS sourced data, to educate pilots and, where necessary, deliver a tiered system of pilot admonishment.** We will continue to collate complaints through other mechanisms and feed these into the appropriate database.

7.3 Actions for Communicating with the Local Community

For a number of years there has been much negative comment about the efficacy and relevance of the Wycombe Air Park JCC. In addition to a change of personalities, recent changes have brought public participation, a representative balance of interested parties, the inclusion of organisations which were previously excluded, the adoption of voting rights in accordance with DfT guidelines and a revised constitution (see Appendix C). 'Ownership' of the Committee has transferred to the membership and, in accordance with best practice, the Air Park has adopted a role as a facilitator rather than executive. **We recognise the importance of the JCC and will continue to contribute towards the evaluation and evolution of the JCC.**

8.0 FINANCIAL IMPLICATIONS

The estimated costs of implementing the Noise Management and Action Plan are set out below.

Action	Estimated Cost	Notes
Phase out Cessna 152 aircraft and replace with new technology	£600,000	Based on estimated capital cost of £100,000/aircraft
Equip PA28s with Silencers	£12,000	Based on £2,000/aircraft. Additional annual maintenance cost of approximately £3000.
Developing alternate circuit strategy	TBN	Various options to be considered as part of Head Lease negotiations.
Extension of GPS tracking across Air Park based aircraft	£50/aircraft	Encourage aircraft operators to make investment
Development of online complaint handling system	£2000	

9.0 CONSULTATION

9.1 A key improvement to the management of noise at Wycombe Air Park was the reconstitution of the Joint Consultative Committee which included changes to representation and voting rights. From the outset the Air Park included the JCC in the development of the Noise Management and Action Plan and it was due to this iterative process a number of changes and agreements were progressed. The JCC discussed the draft Management and Action Plan at length and overwhelmingly decided that the structure and representative nature of the JCC was broad enough to encompass the requirements for public consultation. The JCC consists of representative from each affected parish council together with District Council, airfield operators and representatives from residents associations' and lobby groups. A full list of consulted organisations can be found at Appendix C.

9.2 Written responses were received from the majority of JCC organisations, a précis of these being at Appendix D. In the round, the responses were positive and supportive of the consultative approach although, inevitably, there were some issues where mutual agreement could not be reached.

Glossary of Acoustic and Technical Terms

Agglomeration An area having a population in excess of 100,000 persons and a population density equal to or greater than 500 people per km² and which is considered to be urbanised.

dB(A) A measure of sound pressure level ("A" weighted) in decibels as specified in British Standard BS EN 61672-2:2003

$L_{Aeq,T}$ The A-weighted equivalent continuous sound pressure level which is a notional continuous level that, at a given position and over the defined time period, T, contains the same sound energy as the actual fluctuating sound that occurred at the given position over the same time period, T

L_{day} The L_{Aeq} over the period 0700 – 1900, local time (for strategic noise mapping this is an annual average)

$L_{evening}$ The L_{Aeq} over the period 1900 – 2300, local time (for strategic noise mapping this is an annual average)

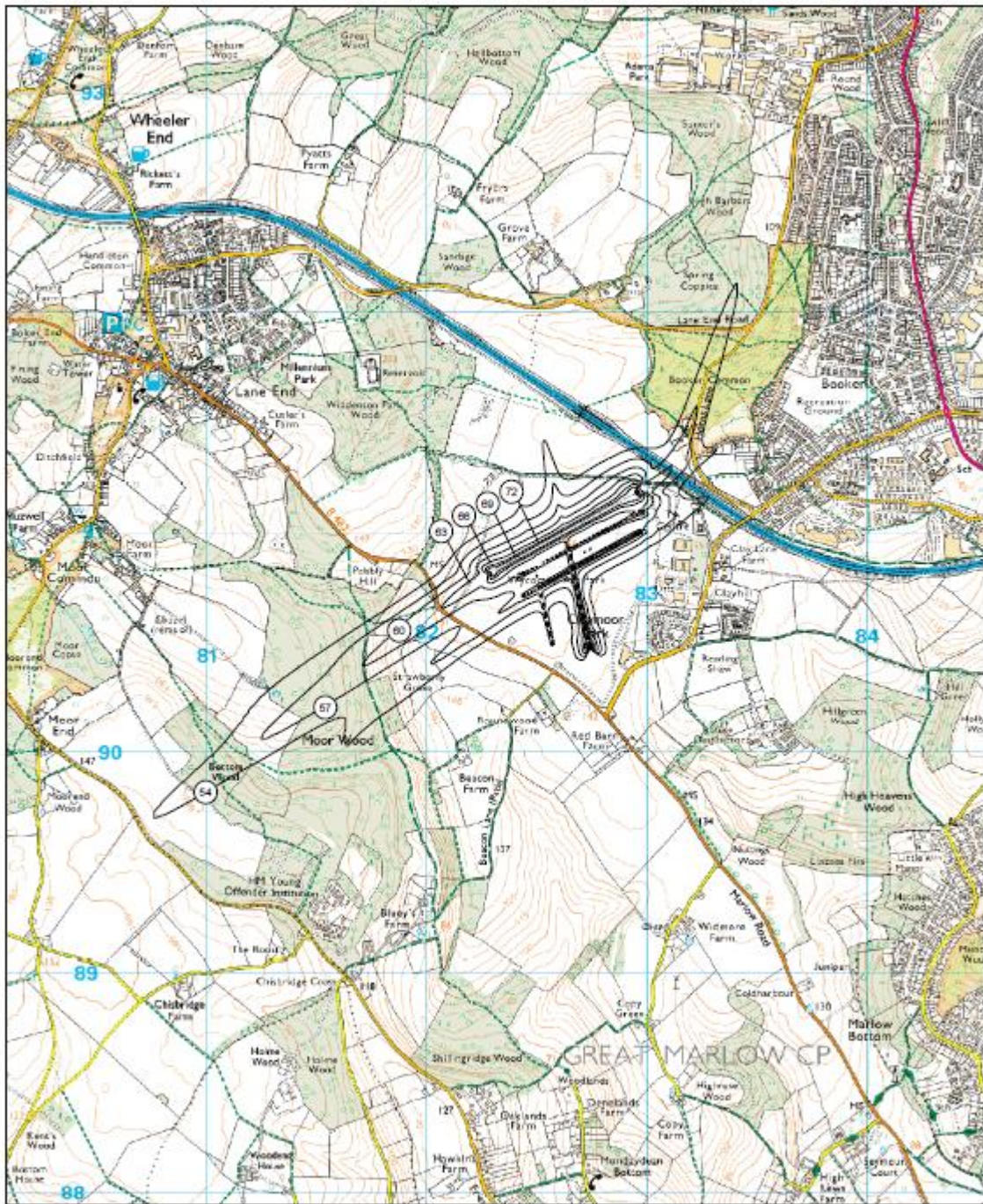
$L_{Aeq,16h}$ The L_{Aeq} over the period 0700 – 2300, local time (for strategic noise mapping this is an annual average)

L_{den} The L_{Aeq} over the period 0000 – 2400, but with the evening values (1900 – 2300) weighted by the addition of 5 dB(A), and the night values (2300 – 0700) weighted by the addition of 10 dB(A).

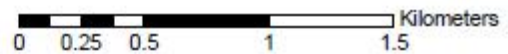
Appendix A to Wycombe Air Park Noise Management and Action Plan 2013 - 2018

Wycombe Air Park 2011 END Round 2 Noise Contours
LAeq,16h

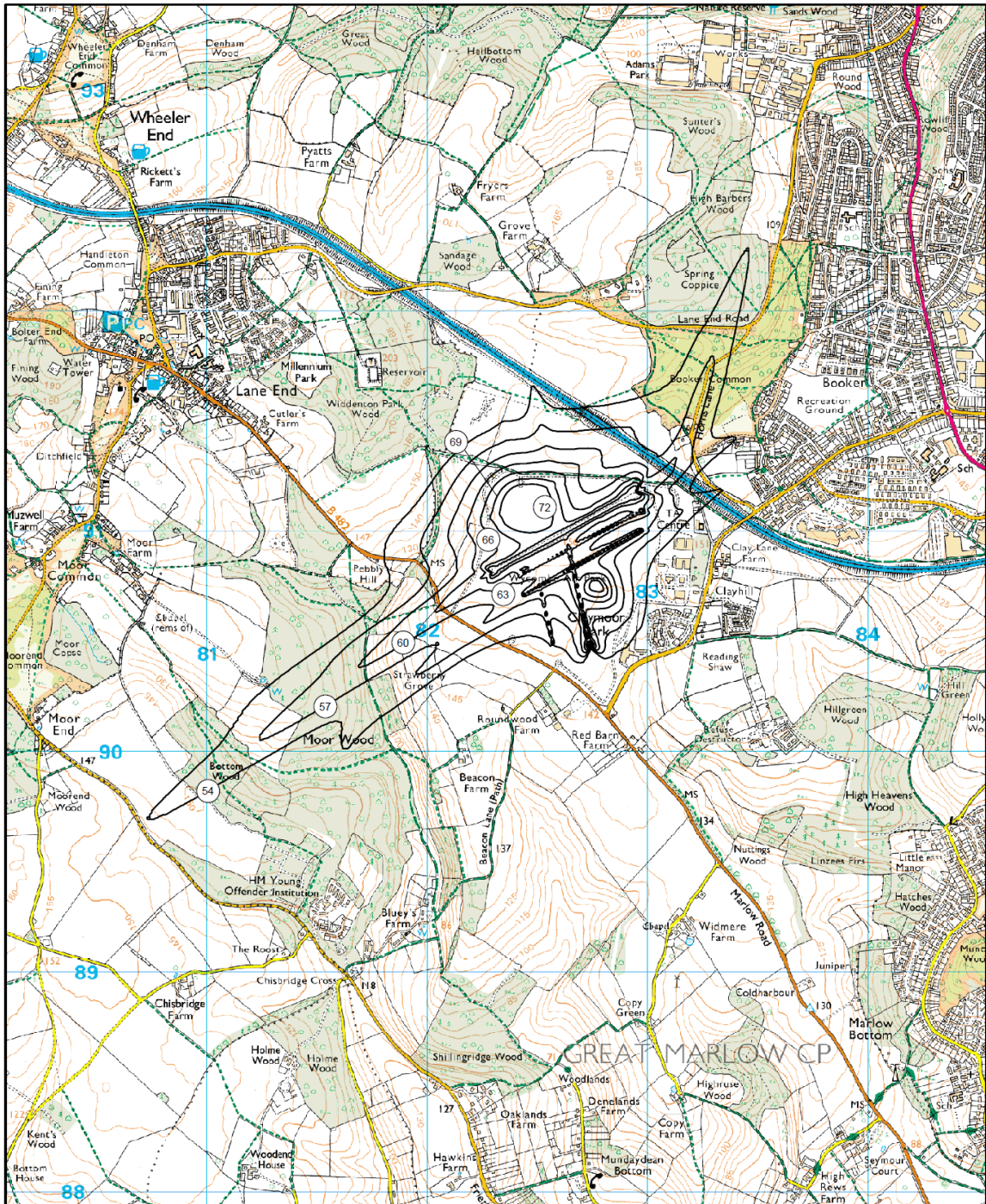
(fixed-wing movements only)



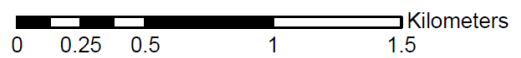
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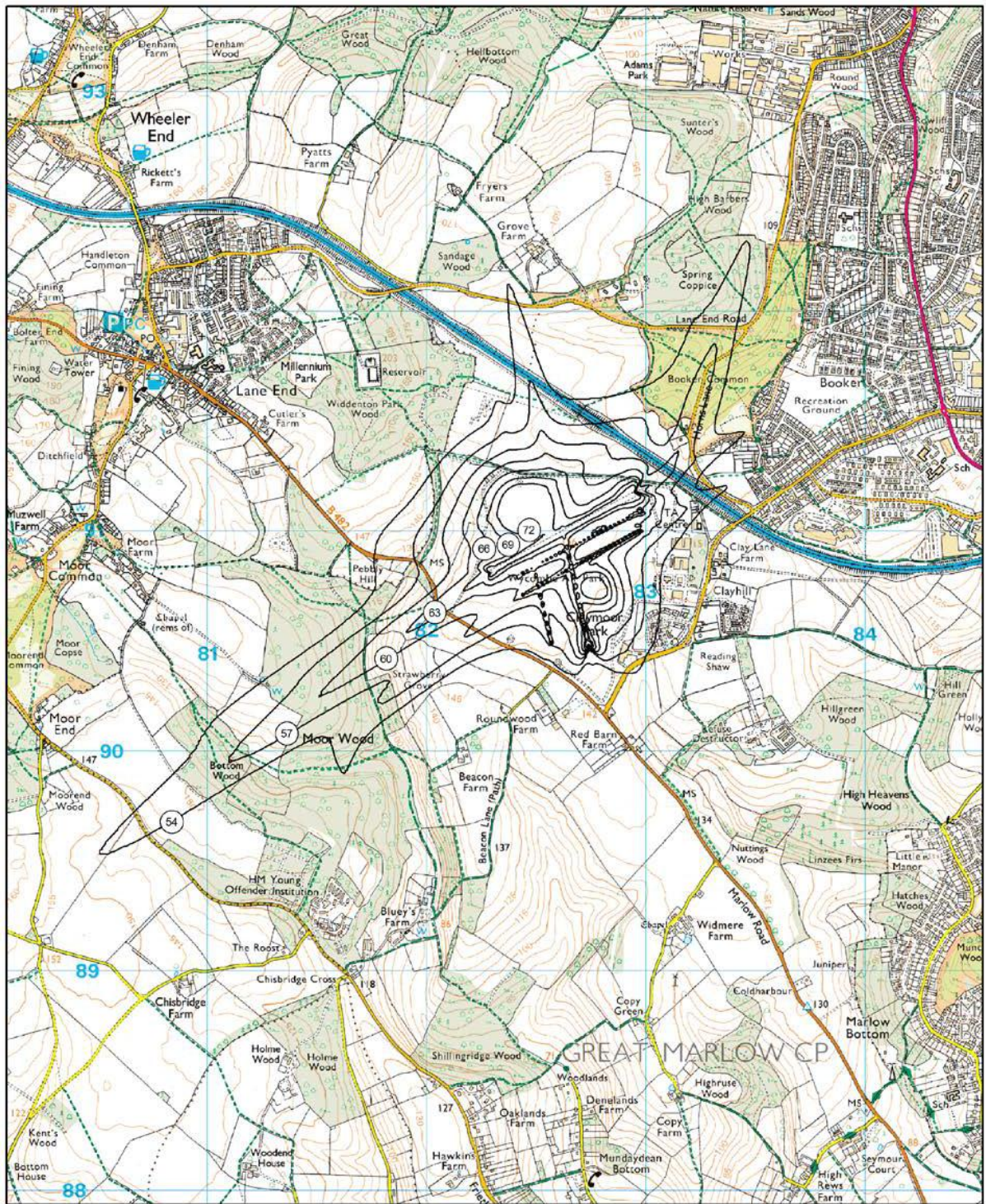
**Wycombe Air Park 2011 END Round 2 Noise Contours
LAeq,16h
(fixed-wing and helicopter movements)**



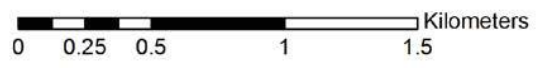
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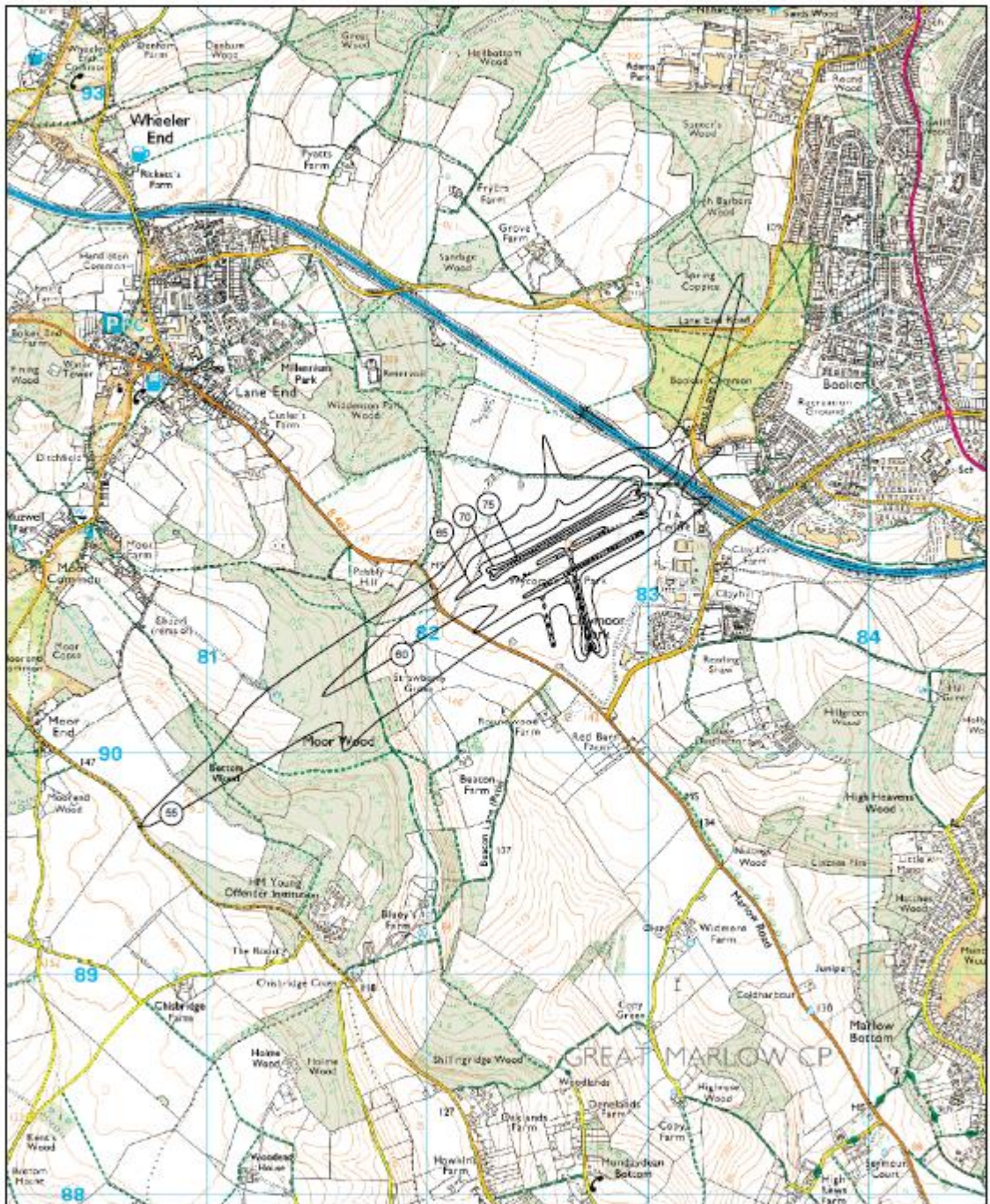
Wycombe Air Park 2011 Summer Noise Contours
L_{Aeq,16h}
(fixed-wing and helicopter movements)



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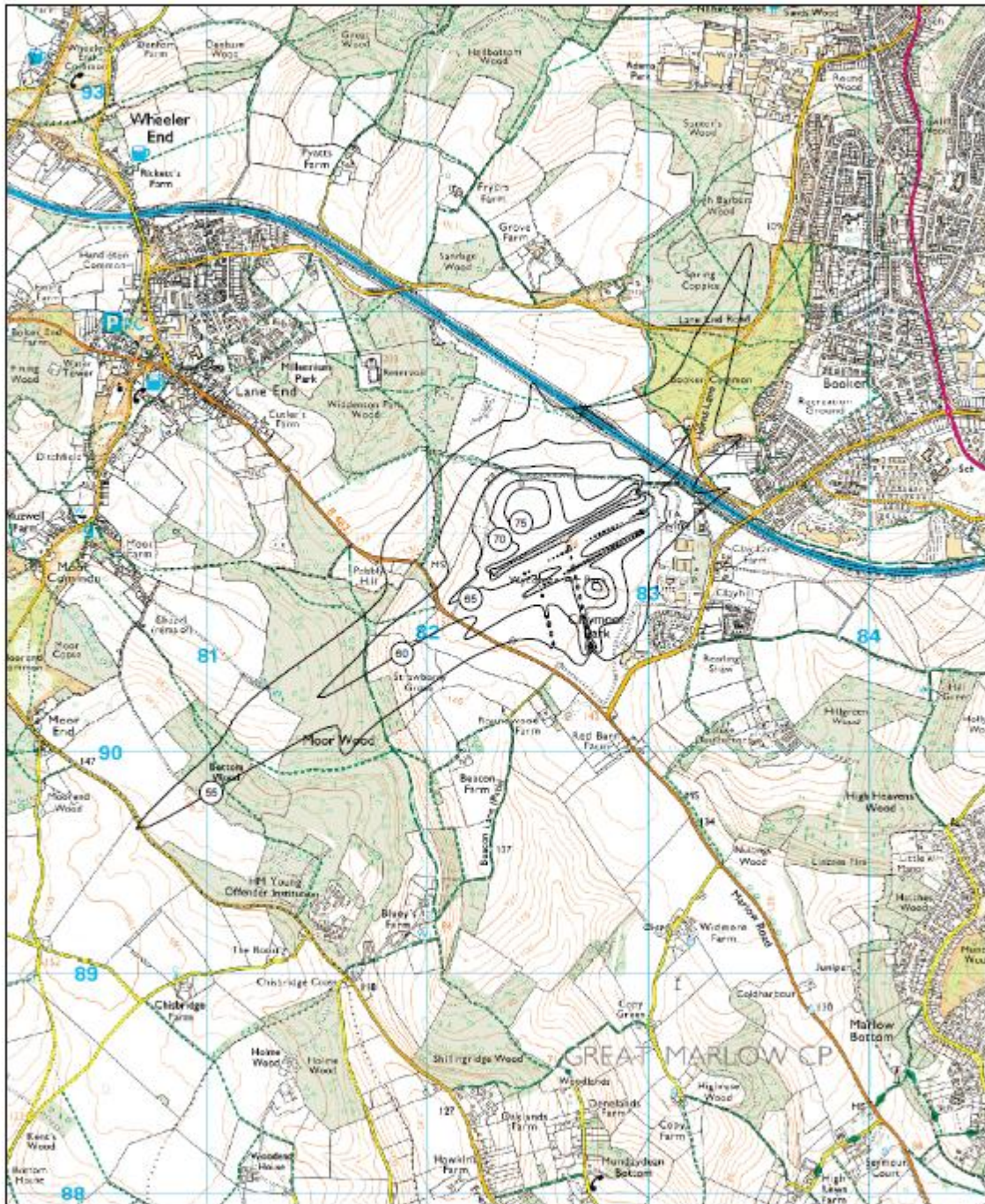
Wycombe Air Park 2011 END Round 2 Noise Contours
Lday
(fixed-wing movements only)



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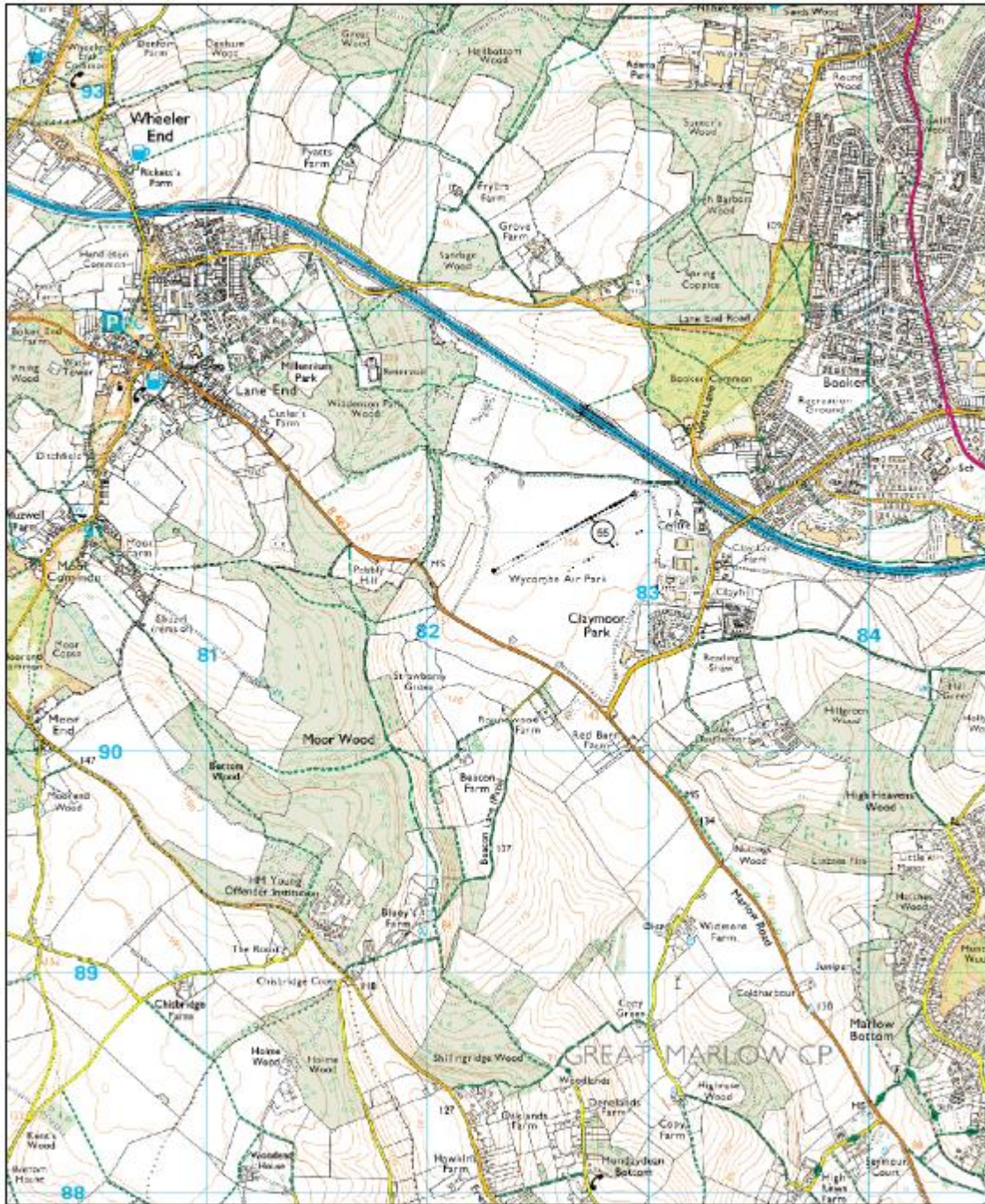
Wycombe Air Park 2011 END Round 2 Noise Contours
Lday
(fixed-wing and helicopter movements)



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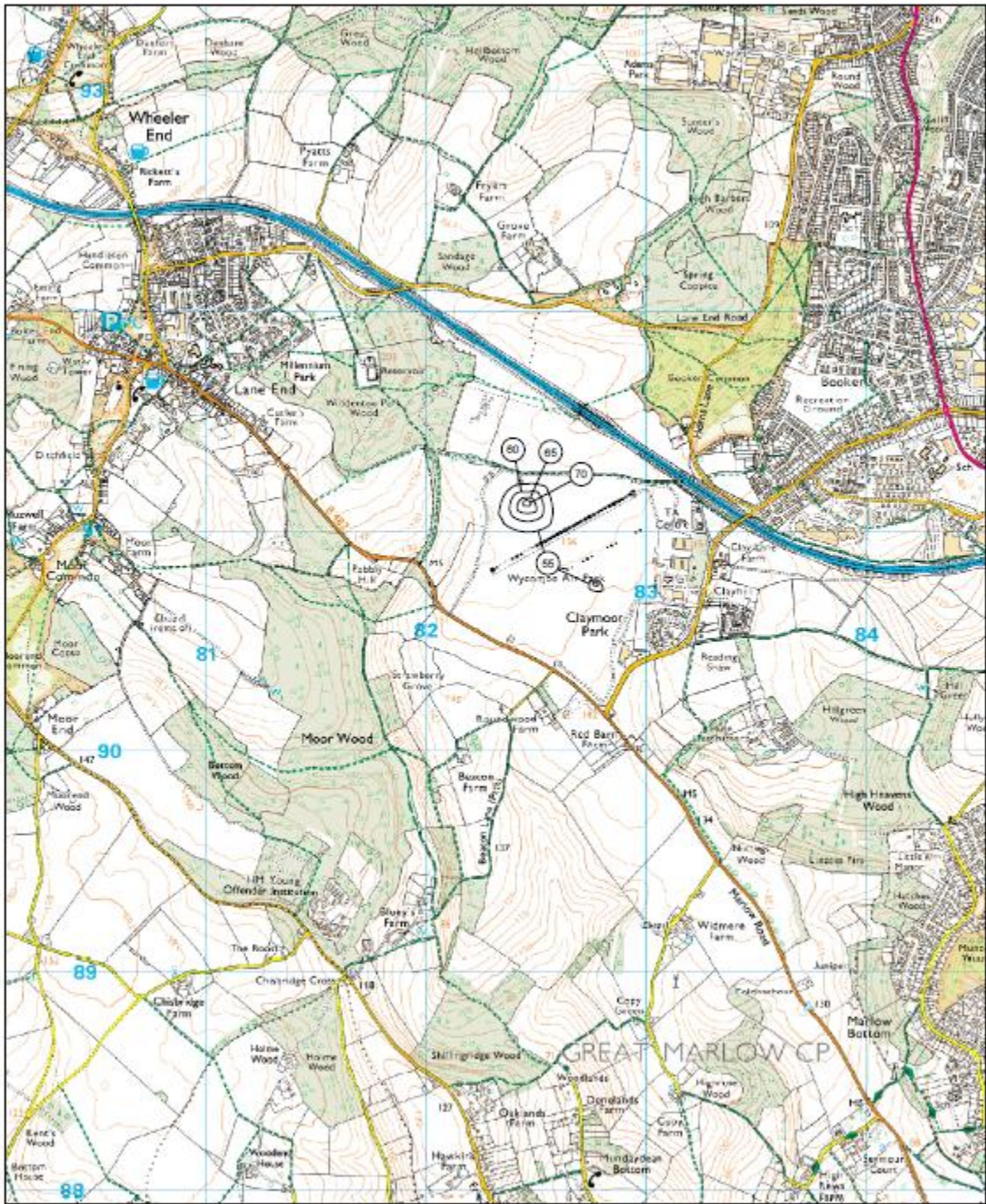
Wycombe Air Park 2011 END Round 2 Noise Contours
Levening
(fixed-wing movements only)



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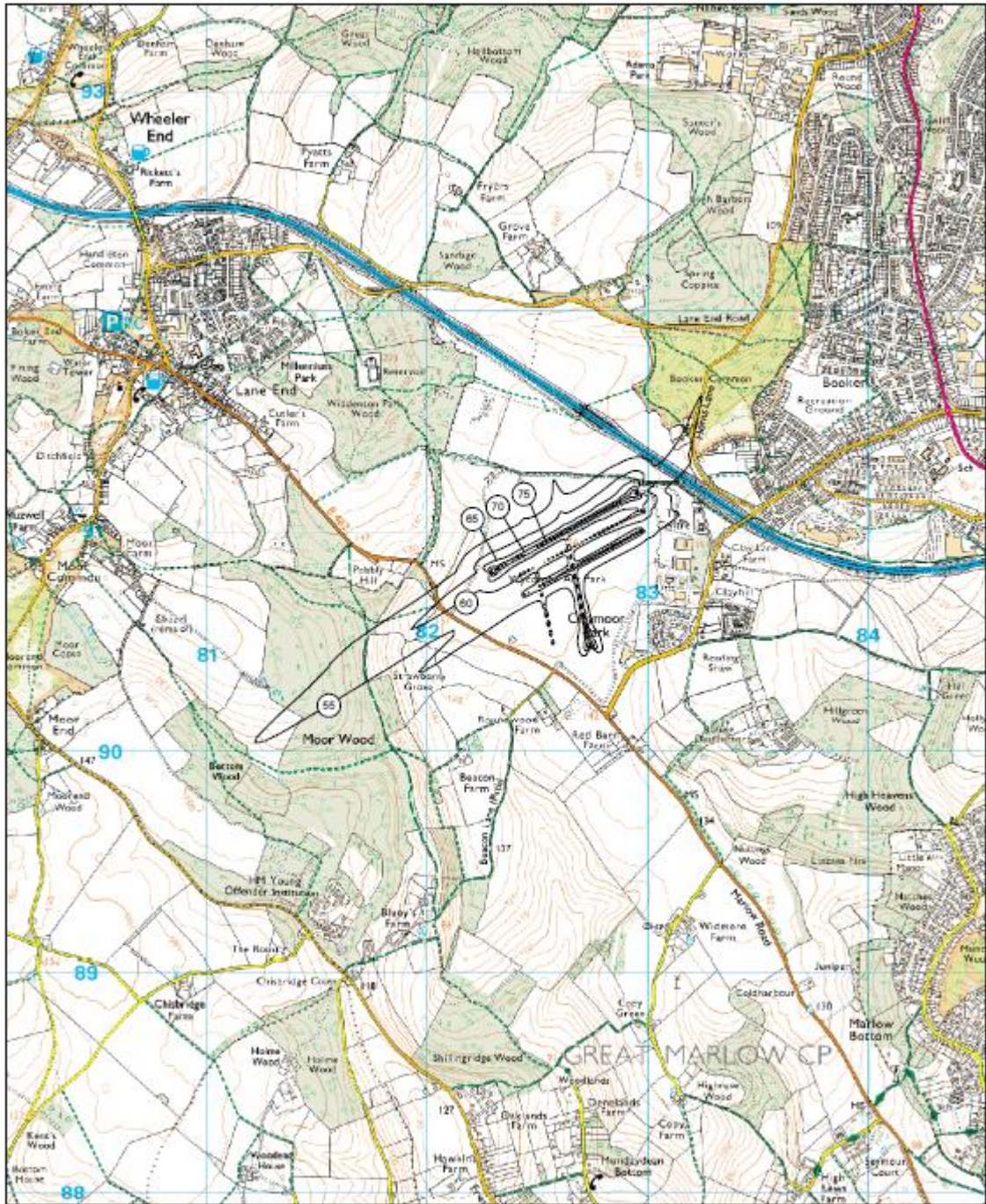
Wycombe Air Park 2011 END Round 2 Noise Contours
Levening
(fixed-wing and helicopter movements)



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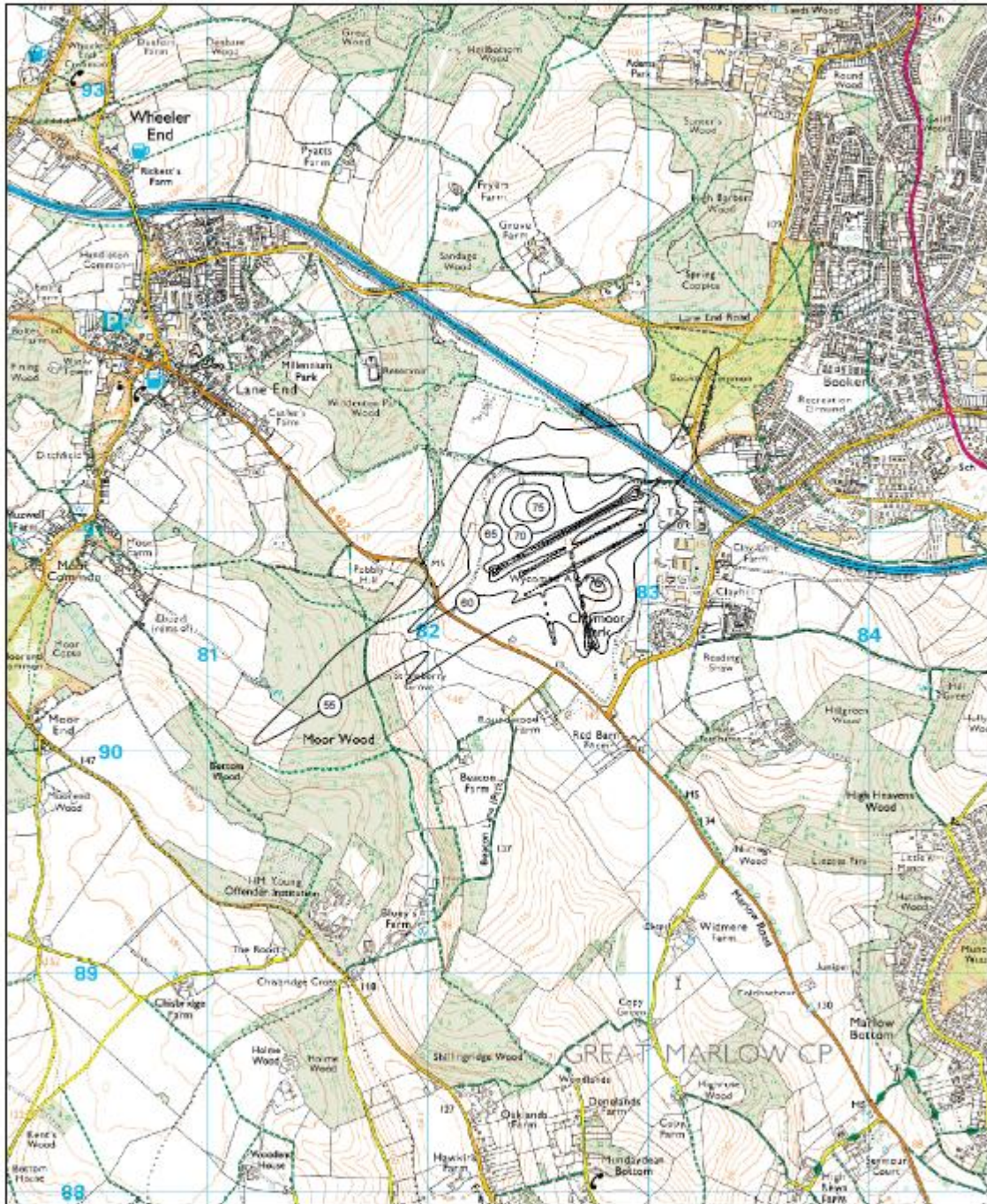
Wycombe Air Park 2011 END Round 2 Noise Contours
Lden
(fixed-wing movements only)



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1 Kilometers

Wycombe Air Park 2011 END Round 2 Noise Contours
Lden
(fixed-wing and helicopter movements)



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Appendix B to Wycombe Air Park Noise Management and Action Plan 2013 - 2018

	Action	How Delivered	Impact	Timescale	Performance Indicator	No. of people affected by the action
1	Investigate new, quieter technology training aircraft	Phasing-out noisier legacy machines, exploring economic viability of operating new quieter, fuel efficient aircraft	Reduced noise footprint	Immediate. Successful outcome of Head Lease negotiation would facilitate acceleration of replacement	Future noise mapping to indicate change in footprint	All residents, particularly those within the 57 dB LAeq, 16 footprint
2	Adopt alternative noise mitigation measures where feasible, including fitting of aircraft silencers to training aircraft	Commence fitting of silencers to the noisier PA28 fleet	Reduced noise footprint	Immediate	Future noise mapping to indicate change in footprint	All residents, particularly those within the 57 dB LAeq, 16 footprint
3	Enhance GPS tracking activity	Encourage wider use of GPS tracking across all air park residents. Mandate use for based helicopter operators (already voluntary)	Improved pilot awareness and compliance. Ability to enforce. Greater transparency with community stakeholders. Identification and resolution of specific issues (eg Spring Coppice).	Ongoing	Reduction in noise complaints and greater compliance	N/A
4	Continued evaluation of JCC role	Improved communication between Air Park and community.	Community trust and awareness	Ongoing	Community feedback (JCC)	N/A
5	Provide a robust complaint	Develop online reporting procedures and	More meaningful and	September 2013	Community feedback (JCC)	N/A

	handling procedure	data handling	comprehensive responses to individual issues. More transparency in producing reports to JCC etc. Assist the airfield in understanding problems and resolution. Mechanism for identifying individual operator/pilot trends.			
6	Continue to investigate opportunities that may arise to create respite	In tandem with opportunities that may be presented during Head Lease negotiations, explore the ability to employ a variable circuit strategy	Reduced noise annoyance	September 2014	Reduced noise complaints from current hotspots without affecting economic sustainability	N/A

Appendix C to Wycombe Air Park Noise Management and Action Plan 2013 - 2018

WYCOMBE AIR PARK JOINT CONSULTATIVE COMMITTEE

TERMS OF REFERENCE AND CONSTITUTION

1. The name of the Committee is Wycombe Air Park Joint Consultative Committee (JCC).
2. The JCC is established to act as a means of consultation in relation to Wycombe Air Park in that:
 - a. it enables the aerodrome operator, communities in the vicinity of the aerodrome, local authorities, local business representatives, aerodrome users and other interested parties to exchange information and ideas;
 - b. it allows the concerns of interested parties to be raised and taken into account by the aerodrome operators, with a genuine desire on all sides to resolve any issues that may emerge;
 - c. it complements the legal framework within which the aerodrome operates.
3. The JCC should not:
 - a. detract from or constrain the responsibility of the aerodrome owner and/or operator to manage the aerodrome;
 - b. prevent interested parties from raising concerns directly with the aerodrome, or through other channels.
4. The members of the Committee shall be appointed by their respective represented bodies or organisations named in Part II of the Schedule hereto who shall be entitled to appoint, at their sole discretion, the number of members set opposite their name in the second column of the Schedule.
5. The bodies or organisations shall be entitled to appoint a deputy for each of their members and such deputy shall be entitled to attend meetings of the Committee in the event of the appointed member being unable to attend and such deputy shall be entitled to act in the same manner as if he were the duly accredited delegate.
6. Members appointed shall hold office for a period of three years but may be re-nominated by the body or organisation they represent.
7. A member appointed by a body or organisation named in the Schedule who ceases to be a member or officer of that body or organisation shall thereupon cease to be a member of the Committee unless specifically appointed by that body or organisation to continue to act as its representative.
8. Any member who either fails to attend or provide a deputy at more than two consecutive meetings shall be deemed to have resigned unless the Committee determines otherwise. The body or organisation nominating that member shall then be invited to nominate a replacement representative as at paragraph 9 below.

9. On the death, resignation or other cessation of membership of a member the body or organisation by which the member was appointed shall be invited to appoint a replacement representative to serve for the balance of the period of office of the original member.
10. The Committee shall have the power to co-opt additional members not exceeding two in number to serve as Chairman and/or Vice-Chairman . These posts shall be held for a period of three and two years respectively or other periods as the Committee may determine. The post of Chairman shall be filled by a co-opted individual.
11. Any member may be accompanied by an officer or other adviser but any such officer or adviser shall not address the Committee without the approval of the Committee or have the power to vote in any circumstance.
12. The Committee shall hold three regular meetings in each year. Additional meetings may be held if the Committee deem it necessary.
13. No business shall be transacted at a meeting of the Committee unless there shall be present at least one third of the representative members or duly appointed substitutes including at least one representative of WDC, Parish Councils, Residents Groups and Aerodrome Based Operators thus reflecting a fair balance of parties normally represented.
14. Normally matters at a meeting shall be determined by a majority of votes of the representative members present and voting shall be by way of acclamation or by a show of hands. In the instances where there is an equality of votes the Chairman will have a casting vote.
15. The regular meetings will normally consist of two sections. The first section, lasting approximately 30 minutes shall be reserved for public comments and questions. The formal second section shall be for Committee discussion regarding matters appearing on the agenda. The public may be allowed to observe but not participate in this section.
16. A secretariat shall be provided by the aerodrome operator the duties of which shall be to:
 - a. prepare minutes of the Committee and distribute them to all members;
 - b. issue notices of meetings of the Committee and to place on the agenda matters requested by members for the committee to consider;
 - c. circulate relevant documents;
 - d. assist the committee on sourcing policy and technical guidance, where appropriate.
 - e. publicise and communicate the activities of the Committee .
17. Alterations to this Constitution shall only be made by resolution of a two thirds majority of the Committee.

SCHEDULE

Part I

TERMS OF REFERENCE

1. To provide for the purpose of Section 35 of the Civil Aviation Act 1982 a means of consultation with respect to any matter concerning the management or administration of the Air Park which affects the interests of:
 - a. the users of the Air Park,
 - b. the local authorities in whose area the aerodrome or any part thereof is situated or whose area is in the neighbourhood of the aerodrome, and
 - c. other organisations representing the interests of persons concerned with the locality in which the aerodrome is situated

2. To serve as a forum for the consideration of the interests of the Air Park, its users and the local population and business community, and to act as a means of exchanging information and views between the various interests. In particular, the committee should:
 - a. consider aerodrome issues as they affect the communities represented or the amenities of the aerodrome
 - b. make suggestions to the aerodrome where this might further the interests of the communities represented
 - c. stimulate the interest of the local population in the development of the aerodrome
 - d. monitor the environmental impact of all aspects of the operation of the aerodrome and to advise on operating procedures resulting from such monitoring with a view to minimising noise or other pollution from whatever source
 - e. to protect and enhance the interests of users of the aerodrome
 - f. discuss with the aerodrome formal procedures for recording complaints about aircraft noise and other adverse effects of the aerodrome.
 - g. consider the contribution of the aerodrome to the local and regional economy.

SCHEDULE

Part II

REPRESENTATION ON COMMITTEE

Wycombe District Council	2 Officers in a non-voting, consultative capacity
	5 Councillors representing the local wards specifically listed below: Booker and Cressex Chiltern Rise Greater Marlow Hambleton Valley Sands
Airways Aero Associations Ltd (representing Air Park Management)	1 Non-Voting
Booker Aviation (representing fixed wing operations)	1
Wycombe Air Park Action Group	1
Booker Gliding Club	1
HeliAir Ltd	1
Helicopter Services Ltd	1
Booker Common and Woods Protection Society	1
Great Marlow Parish Council	1
Hambleton Parish Council (including Frieth)	1
Lane End Parish Council	1
Marlow Bottom Parish Council	1
West Wycombe Parish Council	1
Sands Residents Association	1
Frieth Village Society	1

Appendix D to Wycombe Air Park Noise Management and Action Plan 2013 – 2018

Responses Received from Representative Organisations

Serial	Source	Observation	Response	Action
1	Wycombe District Council	Welcomed the commitment to invest in new aircraft and understood that this can only be made when new Head Lease in place.		
2		Believe the case for secondary silencers has been made and feels that aircraft not due for replacement should be fitted forthwith. Aircraft that will not be replaced within three years after date of new Head Lease should also be incorporated in silencer program. Commitment should not rely upon funding from local stakeholders.	Agreed. Since the drafting of this Management and Action Plan the airpark has instigated a silencer fitting program. There are currently three aircraft fitted with silencers and others are modified as and when they enter scheduled maintenance.	
3		Believes the case for a Southern circuit should be explored further. Doesn't believe that a decision can yet be made as it depends upon consultation feedback, CAA safety audit and lease negotiations with the Council. A decision will have to be made on what is a fair balance.	Agreed	
4		Welcomes the introduction of GPS tracking. Should be extended forthwith with suitable resources put in place to analyse data gathered	Agreed. GPS monitoring is currently in place for the fixed-wing flying school and one of the based helicopter operators.	

5		Welcomes the proposal to improve the complaints system and believes this should be as easy as possible to use.	Agreed. The Airpark is working on a comprehensive system.	
6		Welcomes recent changes to the JCC and believes that the constitution and management of the JCC should be kept under constant review		
7	Chilterns Conservation Board	Welcomes the investigation into alternating circuit directions and would wish to take part in future discussions on this element		
8		Considers that the Air Park has a duty to comply with both the National Planning Policy Framework as well as Section 85 of the Countryside and Rights of Way Act 2000		
9		Offers that the Board should have a seat on JCC and would provide further supporting evidence in support of this request		
10	Hambledon Parish Council	Does not believe that any beneficial changes should be based on Head Lease renewal discussion	Many of the proposed actions require investment by either AAA Ltd (the leaseholder) or sub-tenants. As the Head Lease terminates in September 2014, it is unreasonable for AAA or sub-tenants to commit to major expenditure until the nature of any head lease renewal, assignment or indeed termination is ascertained.	
11		The Council strongly supports progressing trials of the alternative Southern circuit.	The Air Park agrees that this option would make a considerable contribution towards respite for some areas which are currently affected by	

			the Northern circuit pattern	
12		The Council would like to see some form of restriction on weekend circuit flying stating that no evidence has been presented to support the commercial non-viability of such action.	The Air Park has previously offered to share sensitive commercial information with JCC representatives; this offer has only been taken-up by Hambledon Parish Council. Having observed the requirement of 7-day operations, the council then asked whether this was an accurate reflection of our business throughout the year as much of our weekday business was predicated on university contracts. In the last year, we have had non-stop university student flying from the last week in September until mid-august.	We accept that respite is a major issue for elements of the community but, despite much effort by both the Air Park and concerned residents, have yet to identify a mechanism that would present an acceptable compromise whilst retaining the financial viability of the Air Park. The Air Park remains open to Jcontinued discussion regarding the viability and practicality of respite
13		The Council questions the <i>need</i> for a resident to fund silencers	There is no need for a resident to fund silencers - the offer was made and the Airpark accepted. Circumstances subsequently changed and the Airpark has now embarked on a program of self-funded silencer installation.	The Air Park considers that this matter is now resolved. Three of five aircraft now have silencers fitted and the other two will be modified by December 2013. We will extend the fitting of silencers to other fleet aircraft if there is a hiccough in the fleet replacement program for the C512s.
14		The Council suggested that the Air Park should consider launching gliders by winch and not aero-tow	The Air Park understands that there may be some difficulty here as the airfield may not be big enough to accommodate a winch launch system. Furthermore, there are additional risks associated with combined winch/power/helicopter operations.	Investigations indicate that the take-off run available is insufficient for winch launched operations. Furthermore, the presence of winch cables on an active airfield with both helicopter
15	West Wycombe Parish Council	The Council noted that whilst overall movements had significantly reduced since the 1980s, helicopter	The Air Park accepts that the proportion of helicopter movements has increased. However, the number	The Air Park would welcome observations regarding helicopter issues in order to ascertain the

		movements have remained relatively constant and therefore proportionally greater but note that there are no specific measures to mitigate the effect of this activity	of complaints about helicopters remains proportionally less than for fixed wing and, if one were to put aside entirely valid complaints from one very specific location, there is little in the way of complaints	nature and scale of the problem.
16	Lane End Parish Council	The Council trusts that the new complaints system will allow a mix of access for public including telephone, online, letter and face-to-face	The Air Park will work with the JCC to provide a robust and diverse mechanism for complaint handling.	
17	Sand Residents Association	The noise contours are not measured but theoretical and take no account of inaccurate routing	Noise measuring and production of the action plan was undertaken in accordance with the DEFRA directives. The Air Park accepts that the noise footprint mapping does not necessarily capture all the issues and recognises that nuisance is also an issue. The bulk of the Draft Noise Action and Management Plan attempts to address the latter rather than focus on the mandated noise contouring.	
18		The introduction of GPS does not seem to give any better station keeping	The Air Park feels that GPS tracking has improved station keeping and is slowly ensuring that a greater proportion of pilots comply with local flying procedures	
19		Any proposed variation to Southside circuits would be of no benefit to Sands	Noted. The Air Park wishes to remain open-minded about this embryonic proposal and would accept that full consideration and consultation would be required if this option were to be pursued. Importantly, as this requires significant infrastructure change at the Air Park, we feel that Southside circuits would require discussion as	

			part of Head Lease renewal discussions.	
20		The Action Plan does not propose any form of respite or Noise Abatement Zone for runway 35	Please see our comments at Serial 11 regarding respite. We will investigate the options of providing a 35 NAZ.	A NAZ for RW35 would present significant problems. The main issue is the provision of legally required 'glide clear' capability in the event of an engine failure. The current routes allow for such capability whilst an extended NAZ would not make this achievable.
21		Statistics provided by the Air Park claim a downturn in movements. Previously there has been some confusion about the counting of movements and presentation of data	The Air Park current assesses aircraft movements in accordance with recognised practice. (ie a 'touch and go' is classified as two movements). Indeed, we support the opinion that the current method of movement monitoring may well inflate previous figures. There can be no doubt that total movements have significantly decreased over the years.	
22	Wycombe Air Park Action Group (WAPAG)	The action plan does not address the issue of respite	See comments at Serial 11	
23		The action plan does not address the phasing-out of helicopters	See comments at Serial 14	
24		The methodology used to collate data for the action plan does not show the true impact on the ground.	Please see our comments at Serial 16. Additionally, we accept that the INM does not necessarily capture all the relevant data. Indeed, it should be noted that the helicopter noise mapping was not prescribed as part of the action plan although best effort was made to incorporate the potential impact. DEFRA clearly stipulate the content and methodology required by action plans and the Air Park feels that it has met	

			the criteria whilst offering additional information and proposals.	
25		Averaging noise techniques using LAeq have no place at a predominately daylight hours airfield	Agreed, hence the decision to incorporate additional Summer month LAeq16hr data.	
26		The Southside circuit respite option has not yet been tested and may prove unworkable.	The Air Park flew a number of Southside circuits on 16 February 2013 with ground observation being made by various representatives of Wycombe District Council. That said, there is still some significant work to be completed here and we accept that it may be un-workable. We currently only wish for stakeholders to remain engaged in developing and assessing this option.	
27		Whilst welcoming the plan for quieter aircraft it is disappointing to note that nothing is to be done immediately to measure and classify aircraft by noise output/nuisance factor and to place limits on the use of such aircraft	All certified aircraft currently hold a Noise Certificate issued by the CAA. There is a mechanism by which airport operators can charge aircraft by reference to their noise footprint rather than by weight (the method normally adopted at general aviation airfields). The size of Wycombe Air Park already constrains the size of aircraft operated from the airfield and this already limits the potential noise footprint (it is a reasonable assumption that, in general, larger aircraft create more noise). The Air Park would not wish to take additional business risk by constraining activity already undertaken by based aircraft. However, we do commit to taking a lead within the GA industry in	The Air Park will investigate the option of charging by noise and not weight in order to encourage the use of quieter aircraft.

			procuring new, quieter aircraft and the fitting of silencers. We feel that, in the broadest sense, the industry is becoming more environmentally conscious and consider ourselves as a key player in this arena.	
28		Helicopters appear to be excluded from the plan yet, from the perspective of noise nuisance these are the most objectionable aircraft. We also note there is still no agreement to stop helicopters flying over Moor Common	Whilst we accept that helicopter noise may be an issue we have little supporting evidence apart that provided from residents at Spring Coppice. We welcome data regarding helicopter operations in order that the management and action plan can be developed.	