

**12<sup>TH</sup> ANNUAL REPORT OF THE SECTION 106 PLANNING AGREEMENT  
BETWEEN BIRMINGHAM AIRPORT LIMITED AND  
SOLIHULL METROPOLITAN BOROUGH COUNCIL**

**EXECUTIVE SUMMARY**

Birmingham Airport is the new rebranded name for the Airport. However, the company which operates Birmingham Airport is still formally known as Birmingham International Airport Limited (BIAL), trading as Birmingham Airport. The Airport will be referred to, throughout this report, as Birmingham International Airport Limited (BIAL) or the Airport Company.

This report has been written to give an update of the operations at Birmingham International Airport Limited (BIAL) in relation to the Section 106 Planning Agreement between Solihull Metropolitan Borough Council (SMBC) and the Airport Company, Birmingham International Airport Limited (BIAL).

The Section 106 Agreement consists of eight schedules. This report is laid out under the heading of each of the eight schedules in the order that they appear in the Agreement.

The noise and track keeping system (ANOMS) used at BIAL provides the latest technology for tracking aircraft and monitoring noise levels. A remote terminal has been installed for the use of the Airport Monitoring Officer based at Solihull Metropolitan Borough Council.

This report will also give an update on airport developments that have taken place at the Airport during 2010.

Ongoing monitoring has shown that the Airport Company continues to comply with its obligations in the Agreement.

Compiled by Beverley Hill, Airport Monitoring Officer, Solihull Metropolitan Borough Council

**ACKNOWLEDGEMENTS**

I would like to acknowledge the assistance provided by members of staff at BIAL and the Environment Agency

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## Glossary of Terms

Numbers in square brackets [ ] refer to references at the back of the report

**Airport Company** – Birmingham International Airport Limited (BIAL), operators of the aerodrome licence and legally bound by the Section 106 Agreement

**AMO**- Airport Monitoring Officer

**airside** - area of airport accessible only after proceeding through security checks, customs and passport control

**annual limit** - the yearly total of **ATMs** allowed during the night time period (2330 to 0600) (**exempt movements** are excluded)

**ANITA-Airport and NEC Integrated Transport Access**

**ANOMS (Airport Noise & Operations Monitoring System)** - aircraft noise and tracking monitoring system used by **BIA**

**apron** - areas of airfield used for operations and for the temporary holding of stationary aircraft

**ATF (Airport Transport Forum)** - BIAL led forum to aid the development of a sustainable transport strategy. Set up in accordance with the DEFRA white paper "Developing an integrated transport policy" [1]

**ATM (Air Transport Movement)** - a landing or take-off of an aircraft engaged in the transport of passengers, cargo or mail on commercial terms

**AUN (Automatic Urban Network)** - government approved air quality monitoring sites which form part of the National Air Quality Monitoring Network. Specific pollutants are monitored and the results are available on the government's web site [2]

**ASAS Airport Surface Access Strategy**

**BOD (Biochemical Oxygen Demand)** - a means of measuring water pollution using biological breakdown

**COD (Chemical Oxygen Demand)** - a means of measuring water quality using chemical analysis

**BCC** - Birmingham City Council

**BIAL** - Birmingham International Airport Limited

**CDA** - Continuous Descent Approaches

**Centro** - passenger transport executive for the West Midlands

**Chapter 2 aircraft** - older, noisier aircraft, such as the BAC1-11 and the Boeing 737-200 series (banned in the UK from end of March 2002) as defined in Annex 16 to the convention on International Civil Aviation [3]

**Chapter 3 aircraft** - quieter, more modern aircraft

**CDA**-Continuous Descent Approach

**dB (decibel)** - measure of sound that uses a logarithmic scale from 0 (threshold of hearing) to 140 (threshold of pain)

**dB(A) (A-weighted decibel)** - refinement of the decibel rating that matches more closely the way the human ear responds to different noise levels

**DEFRA** - Department for Environment and Rural Affairs

**DfT** - Department for Transport

**EA** - Environment Agency

**EPAQS** - Expert Panel on Air Quality Standards which reports to *Defra* and advises on health based targets for air pollutants

**EPNdB (Effective Perceived Noise Decibel)** - Allows not only for human sensitivity to different sound frequencies, but also takes account of the “perceived noisiness” of whistles, whines, etc. and the duration of a complete aircraft flyover.

**ERDF**- European Regional Development Funding

**exempt movements** - *ATMs* may be exempt from night flying restrictions due to the following circumstances:

- aircraft diversions that have been brought about by changes in weather conditions at the original destination airport or an in-flight emergency
- aircraft on medical evacuation or mercy flights where there is danger to life or health, human or animal
- any take-off or landing in an emergency consistent with preventing danger to life or health
- delays to aircraft resulting from widespread and prolonged disruption to air traffic
- delays to aircraft that are likely to lead to serious congestion at the Airport or suffering to passengers or animals provided that aircraft is diverting because of night flying restrictions at other airports are **not** exempt movements

**FDC** - flow diversion chamber

**full aircraft engine ground running** - engine running on the ground at 80 - 100% of engine power.

**IATA** - International Air Transport Association

**LA<sub>eq</sub>** - measure which averages out noise levels that fluctuate over a given time period, it is the average sound intensity expressed in **decibels**

**LA<sub>eq(16 hour)</sub>** - average sound intensity over a specified time period, e.g. daytime

**landside** - area of airport accessible to all visitors i.e. accessible before proceeding through security checks, customs and passport control

**modal share** - proportion of journeys to the airport by a particular type of transport (car, bus, train etc) and by category of user (passenger, employee etc)

**morning shoulder period** - 0600 to 0700 hours (0600 - 0800 on Sundays)

**Multi-modal interchange** - purpose-built area designed to allow easy exchange for passengers between different modes of transport e.g. bus, train, car

**NAQS (National Air Quality Strategy)** - Government initiative aimed at controlling air pollution.

**NEC** - National Exhibition Centre, Birmingham

**netcen** - The National Environmental Technology Centre supplies air quality data

**night period** - for the purposes of the night flying policy, 2330 to 0600

**night shoulder period** - 2300 to 2330

**NMT** - noise monitoring terminal. BIAL has 7 fixed NMTs located in the local community and on the airfield.

**noise contour** - line on map connecting points where the same level of noise would be expected. The  $63dBLA_{eq}$  contour has been used to decide which properties are eligible for inclusion in the **Sound Insulation Scheme**.

**NPR (Noise Preferential Route)** - NPRs cover the first 3000 feet altitude of the **Standard Instrument Departure (SID)** routes (note: this applies only to Departing flights)

**passenger transport modal share** - the proportion of journeys to the Airport by public transport (bus, coach, rail)

**quota** - the yearly limit on the total of **quota counts** for all **ATMs** at the Airport in the **night period**

**quota count** - the amount of the **quota** assigned to one take-off or landing by an aircraft, as detailed in the noise classification for that aircraft type (see table 8)

**S106** - A legally enforceable contract between SMBC and BIAL [4]. The term Section 106 refers to a section of the Town and Country Planning Act 1990 [5]

**SID (Standard Instrument Departure)** - standard instructions that aircraft pilots are required to observe on take-off over a particular en-route navigational beacon, produced by the CAA and published in UK AIP

**SIS** – Sound Insulation Scheme

**SMBC** - Solihull Metropolitan Borough Council

**SSSI** - Site of Special Scientific Interest

**start of roll** - position of an aircraft just before its take-off run begins

**TOC** - Total Organic Carbon

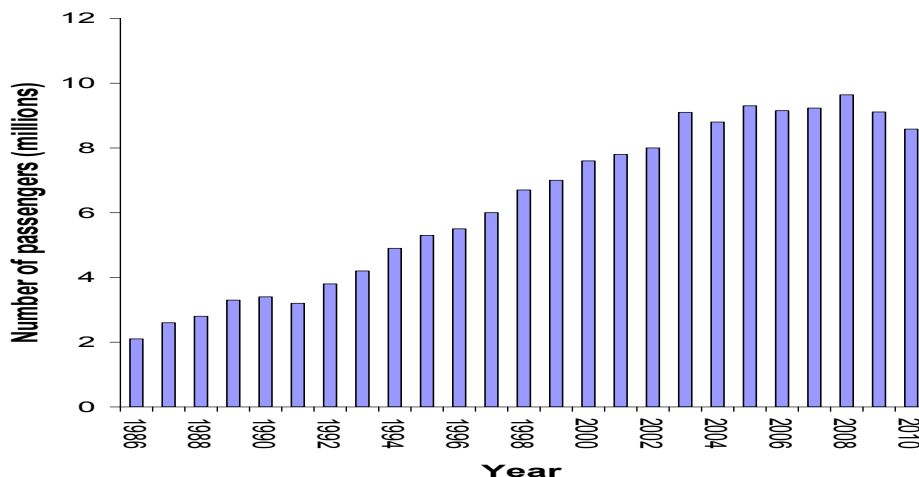
## INTRODUCTION

In 1995, responding to increasing demand for air travel, the Airport Company applied for permission to expand its passenger terminal facilities. After consideration by SMBC's Planning Department, permission was granted subject to certain conditions designed to minimise the impact of airport operations on local residents and their environment. These conditions are set out in a Section 106 Planning Agreement published in July 1996 and amended in 2004.

This document, the 12<sup>th</sup> Annual Report of the S106 Planning Agreement, is laid out under the eight schedule headings as found in the Agreement in order to facilitate cross-referencing.

As far as practicable, the reporting period for this document has been aligned to the calendar year, with the report covering data from 2010. This enables comparison of environmental performance year on year. Figure 1 shows the growth in passenger numbers at the airport since 1986.

**Figure 1. Increase in passenger numbers at BIA 1986-2010**



## AIRPORT MONITORING

The role of the Airport Monitoring Officer (AMO) is to audit all aspects of the Section 106 Agreement. A work schedule for the AMO has been given in Table 1, which shows the type of auditing work carried out each year. Additional investigations are undertaken in response to complaints or as proactive projects.

The AMO also acts as a point of contact for airport complaints, which are investigated in the context of the Section 106 Agreement. If the subject of the complaint is found to be within the restrictions applied to airport operations by the S106 Agreement, no further action is taken, and the complainant is informed of the situation. However if the subject of the complaint is found to breach any of the Section 106 Agreement Schedules, the matter is taken up with the Airport Company. To date there has never been such a breach.

In the first instance any environmental complaint relating to the Airport Company should be directed to the Environment Team at the Airport who can be contacted in the following ways:

- By calling the Environmental Helpline on 0121 767 7433.
- By emailing [EnvironmentTeam@birminghamairport.co.uk](mailto:EnvironmentTeam@birminghamairport.co.uk)
- By visiting the noise section of the website [www.birminghamairport.co.uk](http://www.birminghamairport.co.uk)
- By writing to Environment Team, Diamond House, Birmingham Airport, B26 3QJ

However in the event of continued dissatisfaction, the Airport Monitoring Officer should be contacted. For more information about the work of the AMO, the Section 106 Planning Agreement, general enquiries, or further help regarding a complaint, please contact Beverley Hill on 0121 704 6908 (Direct Line) or email [beverleyhill@solihull.gov.uk](mailto:beverleyhill@solihull.gov.uk)

**Table 1 Work schedule of AMO**

Schedule of Section 106	Proposed Work	Frequency
1. Land Use and Planning	Attend consultation meetings	When held
2. Highways and Drainage	Check compliance with Environment Agency consent	1 per annum
3. Noise Control	Side by side noise monitoring at Terminal 2	2 per annum
	Paper checks on Ground Runs	4 per annum
	Noise readings and sightings - tracked back to ANOMS	4 per annum
	Complaints audit	2 per annum
4. Night Flying	Noise monitoring	As required
	Paper checks	4 per annum
5. Air Quality	Compare BIA results with SMBC and UK results	4 per annum
	Complaints audit	2 per annum
6. Air Traffic	Observations on track keeping	4 per annum
7. Community and Environment	Check amounts transferred from night noise fines	1 per annum

## **1. LAND USE & PLANNING**

The Airport Company continues to comply with all six clauses of Schedule 1.

### Runway Extension

SMBC formally granted Planning Approval for the Runway Extension on 2 November 2009. SMBC has issued the Notice of Planning Approval (with 26 Planning Conditions) and the S106 Planning Agreement (with 16 Schedules of Planning Obligations). These are both available on the Airport Company's website.

### Other Developments

The 'One Terminal' scheme continues to progress. The new executive Emirates Lounge in Terminal 1 opened in October 2010 while the Ground floor of Millennium Link re-opened in October 2010. This included new Arrival Area and Car Hire Desks, New shops and an Arrival Duty Free Shop. The New Duty Free Shop for departing passengers is due to open in April 2011.

When the project is completed in Spring 2011 all passengers will transfer through a new central area and the former two terminals will be merged into a single unit to improve passenger flows and operational efficiency.

Work on the new Travelodge Hotel has commenced with an anticipated completion date for August 2011.

Plans to replace the existing Instrument Landing System (ILS) are to be made under permitted developments. The first phase will be early in 2011. The second phase is due to take place later in 2011.

Details were submitted to Solihull MBC in October 2010 for works to be carried out at the Fuel Farm. It is proposed that the former airside AVGAS facility will be re-used for a new fuel company. This will come under permitted developments.

Due to the severe weather that has occurred in the last few years the Airport have submitted plans to increase the airside parking area used for the snow clearing equipment. This work will come under permitted development.



## 2. SURFACE TRANSPORT

Schedule 2 of the Section 106 Agreement relates to monitoring the mode of surface access used by all Airport users to reach the Airport. Part of the Agreement states:

“The Airport Company shall use **all reasonable endeavours** to achieve a Public Transport Modal Share of **20%** by 31st December 2005 or when the number of air passengers is at the rate of 10 million passengers per annum, **whichever event occurs later.**”

Other obligations in Schedule 2 require the Airport Company to provide an air-rail link, carry out a multi modal interchange study, prepare and keep under review a public transport plan with a strategy for achieving the 20% Public Transport Modal Share. The Air-Rail Link and the Multi-Modal Interchange were opened in 2003.

The Airport Company published a new Airport Surface Access Strategy in 2007 which together with the new ‘Airport Master Plan ‘Towards 2030’,’ sets out a framework for the development of the surface access for the Airport to 2030.

The current Airport Surface Access Strategy (ASAS) covers the period up to 2012 and introduces a new methodology for measuring the modal shares and sets new modal share targets based on this methodology. These developments are discussed below.

### Modal Share

The modal share figures for 2010 were not available at the time of publication of this report, with the Civil Aviation Authority undertaking the passenger surveys for the Airport in 2010. As soon as the figures become available the report will be updated in the Section 106 report published on the Solihull MBC website.

The new ASAS sets separate Public Transport Modal Share targets for passengers and employees. The Public Transport Mode Share now includes all modes other than private car and taxi.

The Public Transport Mode Share for passengers now includes those people arriving at the Airport on buses from off-site car parks and those passengers arriving on courtesy buses from hotels.

The definition of the Public Transport Mode Share for employees is unchanged.

Table 2 and Table 3 show the Public Transport Modal Shares for 2005 – 2009, based on these definitions. The ASAS sets new 2012 Public Transport Modal Share targets of 25% for both passengers and employees.

The ASAS also introduces a new target which relates to the ratio between total vehicle trips (inbound and outbound) and total passengers. The ASAS sets a 2012 target for this ratio of 1.08. Table 4 shows the value of this ratio for 2005 - 2009

**Table 2 Passenger Mode Shares and 2012 Targets**

<b>Passenger Mode Shares %</b>	2005	2006	2007	2008	2009	<b>2012 Target</b>
A. Car	58.5	57.1	58.3	56.2	55.4	<b>55</b>
B. Taxi	20.7	21.2	21.3	19.5	17.8	<b>20</b>
C. Off-site Car Park or Hotel Bus	9.1	7.5	7.0	8.6	7.7	<b>9</b>
D. Rail	9.1	11.7	10.7	13.2	15.1	<b>12</b>
E. Coach	0.8	1.0	1.1	0.9	0.8	<b>2</b>
F. Local Bus	0.7	0.6	1.0	0.8	1.1	<b>1</b>
G. Cycle						
H. Other	1.1	0.9	0.6	0.8	2.1	<b>1</b>
Public Transport (non-car/non-taxi, C-H)	20.8	21.7	20.4	24.3	26.8	<b>25</b>

**Table 3 Employee Mode Shares and 2012 Targets**

<b>Employee Modal Shares %</b>	2003-5	2004-6	2005-7	2006-8	2009*	<b>2012 Target</b>
A. Car	77.4	74.0	72.6	72.7	73.0	<b>73</b>
B. Taxi	2.3	2.7	3.7	4.2	2.4	<b>2</b>
C. Off-site Car Park or Hotel Bus	0	0	0	0	0	<b>0</b>
D. Rail/Air-Rail Link	4.5	5.3	4.7	4.7	5.2	<b>6</b>
D. Coach						
E. Local Bus (& Coach)	13.4	15.0	15.2	14.9	17.0	<b>16</b>
F. Cycle	0.7	0.7	0.7	0.5	1.2	<b>2</b>
G. Other	1.7	2.2	3.1	3.0	1.2	<b>1</b>
Public Transport (non-car/non-taxi, C-H)	20.3	23.2	23.6	23.0	23.4	<b>25</b>

\*Employee Mode Share for 2009 only, not expressed as a three-year average

**Table 4 Vehicle/Passenger Ratio and Target**

<b>Vehicle Trips per Passenger</b>	2005	2006	2007	2008	<b>2012 Target</b>
Total Vehicle Trips (millions)	10.81	10.74	10.60	10.80	
Total Passengers	9.39	9.15	9.18	9.63	
Vehicle Trips per Passenger	1.15	1.17	1.16	1.12	1.08

Note: Vehicle trips include all those on Airport Way and entering or leaving the Long Stay and Staff Car Parks

## **Surveys**

Information on modal shares is obtained through a series of surveys carried out at the Airport over the year. For passengers, the Airport Company previously conducted the surveys continuously in the departure lounges and landside areas of the Terminal buildings, but in 2010 the Civil Aviation Authority undertook the passenger surveys and will do so in future years. For employees, the Airport Company previously conducted interview surveys of employees at the Airport, but in 2010 the surveys were based on the annual Airport Employment Survey returns. In 2009, the Airport Company's Survey Programme was reduced, compared with previous years, as the Airport Company had to respond with fewer resources to the economic situation, the impact on air transport and a decline in traffic.

There is also continuous monitoring of road traffic on Airport Way and the number of vehicles entering the public and staff car parks.

## **Recent Trends**

The Passenger Survey Analysis is based on a smaller sampling rate with no Passenger Interview Surveys in April, May, June July and September 2009. However from the remaining months the passenger Public Transport Modal Share for 2009 was 26.8%, which surpasses that of 2008 and is just above the 25% target set for 2012.

The Employee Survey Analysis for 2009 is based on the returns from the Annual Airport Employment Survey for 2009, and not employee interview surveys as in previous years. In addition, it does not include any data for Airport Company employees. The employee Public Transport Modal Share for 2009 was 23.4%, an increase compared with 2008. The new vehicle trips per passenger ratio decreased slightly from 1.15 in 2007 to 1.12 in 2008. Total vehicles entering and leaving the Passenger Terminal Site amounted to 10.8 million with an air passenger throughput of 9.63 million.

## **Rail**

The Airport Company has submitted a response to the West Midlands Regional Rail Plan, which included seeking improvements to Birmingham International Station and more rail services for Birmingham International which will improve rail access for both the Airport and the NEC. The Airport Company continues to work closely with Centro, Network Rail and the Train Operating Companies.

Proposals for High Speed Rail in the UK have been announced, and include proposals for a Birmingham Interchange station close to the Airport and the NEC. The proposals for High Speed Rail are set out in a Government Command Paper published in 2010. Amendments to the proposed High Speed Rail have been announced by the Secretary of State with the aim of reducing the impact of HS2 on local residents. A formal consultation process on the preferred route for Phase 1 of HS2 will start in February 2011. Details of the proposed amendments to HS2 can be found at the DfT website ([www.dft.gov.uk](http://www.dft.gov.uk))

Network Rail has published the draft West Midlands and Chilterns Route Utilisation Strategy (RUS) and the West Coast Main Line Route Utilisation Strategy (RUS) for consultation. These include access by rail for the Airport via Birmingham International Station at the times and frequencies when they are required, provision for integrated

ticketing and information on rail services. The deadline for consultation responses were 4<sup>th</sup> February 2011 and 11<sup>th</sup> March 2011 respectively.

### **Bus and Coach**

A new hourly bus service will start from January 2011, operated by Blythe Valley Park and the service will run between the Business Park and Birmingham International Station.

Megabus has commenced coach services at the Airport from May 2010. This serves long distance travel to and from the Airport and extends the public transport access for the Airport.

The Airport Company is also a partner, together with the NEC, in SMBC's ANITA scheme (Airport and NEC Integrated Transport Access) to improve access by bus to the Airport and the NEC. The ANITA scheme works are due to be completed in March 2011.

The scheme also includes new bus infrastructure, improvements at the Multi Modal Interchange and facilities for cyclists. The proposed ANITA bus services will involve extended operating hours and frequencies to connect the Airport to Birmingham, Solihull and Coventry. These are subject to approval from the Traffic Commissioners.

Centro is reviewing the East Birmingham and North Solihull Bus Review with revised bus services for East Birmingham and North Solihull proposed for March 2011.

### **Public Transport Information**

A new combined Surface Access Guide was produced in 2009 which details all Surface Access, Bus and Rail Guides into a single guide. The Airport Company continues to review the range and quality of public transport information available at the Airport, and is considering how such information can be provided as real time information and through electronic media such as mobile phones.

### **Cycling**

The Airport Company continued to promote cycling as a convenient and healthy way for journeys to work for the 40% of staff living within five miles of the Airport. There are now 60 lockers available for staff use.

The Airport Company continues to work with SMBC to develop cycling facilities as part of the ANITA scheme.

The Airport Company has provided a letter of support to Solihull MBC for its application for European Regional Development Funding (ERDF) to create a North Solihull Strategic Cycle Network with a view to improving connectivity between North Solihull and key employment sites in Solihull.

The ERDF is part of the European Union Structural Fund which is the mechanism for allocation funding to the regions to stimulate economic development.

### **Other Developments**

Red Routes have been implemented on all landside roads at the Passenger Terminal Site to prevent traffic stopping anywhere apart from the designated areas and to manage traffic flow through the Passenger Terminal Site. The Airport is seeking to make the Red Route permanent as at present it is operated under a temporary Traffic Regulation Order.

The Airport Company has continued to operate the Travelwise Plus scheme which offers a 25% discount on annual bus and rail tickets for Airport Company staff. In addition a joint promotion with Centro offers discounts to all staff employed at the Airport who join the Centro and Travel West Midlands direct debit schemes.

As part of the ANITA scheme the Airport Company, SMBC and Centro are reviewing the Airport's Landside Surface Access Information Display Totems and Airside Surface Access Information Display Units. Real Time Information displays are now installed at the Multi Modal Interchange and in the Airside Baggage Reclaim Areas. A new touch screen facility has also been installed on the first floor of the Multi Modal Interchange.

In addition to these extra Real Time Information displays could be installed at the Visitor and Onward Travel Centre.

Improvements to roads close to the Airport have started as part of the ANITA scheme. This will improve public transport access to the Airport and NEC. This includes Bus Priority Lanes and a Bus Only link between Vanguard Road and Bickenhill Lane.

### **PUBLIC TRANSPORT PROJECT SPENDING**

As part of the Section 106 Planning Agreement the Airport Company agreed that it would commit an agreed sum of £3 million to projects relating to and contributing to increasing the Public Transport Modal Share. This sum did not include expenditure relating to the Air-Rail Link replacement. In 2006 the Airport Company confirmed that it had spent £4.2 million on agreed projects up to the end of 2005/6. SMBC has accepted that the Airport Company has complied with and accounted for the 'agreed sum' specified in the Section 106 Planning Agreement.

### **CAR PARKING**

Section 6 of the surface transport schedule states that *any increase in car parking provision should be provided at a rate less than the rate of increase in passenger or employee numbers.*

This is designed to encourage Airport users to leave their cars at home and use public transport when accessing the Airport site. Off-site parking is specifically excluded from the Section 106 Planning Agreement. Table 5 shows how passenger parking provision has changed relative to passenger numbers over the period.

BIAL was also named silver winner in the Best Airport Car Park in 2010. It was specifically for the Medium Stay Car Park One which has recently undergone an extension to increase the capacity. This was rated by passengers of the Airport across a number of categories.

**Table 5. Increase in parking provision compared to passenger numbers 1995-2009**

<b>Year</b>	<b>Parking Spaces</b>	<b>% Increase since 1995</b>	<b>Passenger Numbers (m)</b>	<b>% Increase since 1995</b>
1995	7010	-	5.33	-
1998	8195	17	6.70	26
2000	8195	17	7.60	43
2001	10603	51	7.80	46
2002	10626	52	8.00	50
2003	11060	53	9.10	70
2004	11855	69	8.80	65
2005	11855	69	9.40	76
2006	11480	64	9.15	72
2007	11586	65	9.23	73
2008	11124	59	9.63	81
2009	12816	83	9.11	71

### **3. HIGHWAYS AND AIRPORT DRAINAGE**

#### **AIRPORT DRAINAGE**

The Section 106 Planning Agreement states that the Airport Company should provide appropriate drainage measures with each new stage of airport development, Clause 5 of Schedule 3 being:

'The Airport Company shall implement in connection with the relevant phases of the development such drainage measures as may be reasonably required by the Council (in consultation with English Nature & The Environment Agency) to protect the River Blythe SSSI and other watercourses in the area of the airport site.'

A map of the airfield showing various aspects of drainage and pollution control measures is included at the back of the report (Map One).

All de-icing material used in the southern end of the runway is collected in holding tanks and discharged to the foul water sewer for treatment at the Severn Trent sewage works in Coleshill.

Any waters discharged to the watercourse must comply with the Consent to Discharge conditions imposed by the Environment Agency who independently sample to ensure compliance with these conditions. Three Total Organic Carbon monitors and two Biochemical Oxygen Demand monitors are installed, along with oil on water monitors. These test the water on a continuous basis, 24 hrs a day. The Airport is confidently complying with the Obligations as a result of this development using these facilities. In line with the other monitors analysing waters on the airport in the event of a problem the "fail safe" option will divert all waters to the polluted water holding tanks.

#### **ENVIRONMENT AGENCY**

The Airport Company has other obligations in addition to the Section 106 Planning Agreement, with reference to airport surface water drainage. The Environment Agency (EA) is responsible for the protection of controlled waters from pollution under the Water Resources Act 1991 and Environment Act 1995. The EA has granted BIAL Consent to Discharge based on the following five water quality parameters, which must not be exceeded

- BOD 15mg/l
- COD 60 mg/l
- suspended solids 45 mg/l
- ammonia cal nitrogen 5 mg/l
- no visible oil

Should the Consent levels be breached, then the EA have significant enforcement powers which can result in polluters being fined, imprisoned, or both.

The surface water discharging into the watercourse is monitored by spot checks by the EA. During 2010, EA Pollution Control Officers made 10 site visits to sample BIAL's outfalls. All samples were sent for analysis, none of which breached the Consent levels

Whilst visiting the airport, the EA, in partnership with the Environment Protection Unit at BIAL, observes airport operations and advises the tenants / operators of any concerns identified with regard to pollution and appropriate methods of prevention.

The Agency is in ongoing liaison with the Airport Company to improve and better protect the environment.

#### ENVIRONMENTAL INSTRUCTIONS

The Airport Company has a responsibility to ensure that airfield operations do not cause pollution to the watercourses that run through the airport. This includes all operations carried out by contractors, airlines, handling agents and other service providers.

An Airport Environment Instruction (AEI) Manual has been issued by the Airport Company to all operating companies. The surface water quality section of this document makes clear to all airport operators their responsibilities and requirements.

The Airport Company's Environment Protection Unit checks for operators' compliance with the AEIs, the Consent to Discharge and Code of Practice by carrying out Environmental Audits throughout the airport site.

#### MONITORING

The Section 106 agreement does not require the Airport Company to monitor the quality of water throughout the Airport but this is undertaken voluntarily by BIAL to try to ensure that the watercourses are not damaged by any airport activities. In addition to the continuous monitors on the airfield drainage system, monthly samples are taken from various locations on the watercourses and site drainage throughout the site. An independent hydrological consultancy produces a water quality report based upon these samples, through an independent laboratory.

#### CONCLUSION

In conclusion, the Airport Company has been fully compliant with Clause 5 of Schedule Three of the Section 106 in providing drainage measures for new stages of development.



#### **4. NOISE CONTROL**

There are a number of Obligations which relate to noise as set out in Schedule 4 of the Section 106 Agreement.

- a sound insulation scheme that is to be paid for and organised by the Airport Company for the benefit of residents living close to the airport.
- the Airport Company should maintain the best equipment available for monitoring the noise from aircraft operations, and make all equipment and data available for scrutiny by the Council.
- control of engine ground running at the airport.
- all noise complaints to be responded to by the Airport Company and the numbers of complaints reported to Solihull MBC.
- a daytime noise limit.

Each of these obligations is explained in more detail below.

A Draft Noise Action Plan has been developed by Birmingham Airport, with the engagement of the Airport Consultative Committee (ACC), the Environment Monitoring Working Group (sub-group of ACC), Local Authorities (Birmingham City Council and Solihull Metropolitan Borough Council), NATS and airlines.

After a public consultation it has been submitted to the Secretary of State for Transport and the Department for the Environment, Food and Rural Affairs (DEFRA)

The Draft Noise Action plan seeks to assess, manage and where possible, improve the noise climate around Birmingham Airport.

BIAL reviews its noise contours every two years and produces new noise contours. The 2010 noise contours for the airport are now available and they have identified a reduction in the 2008 contours for both the day and night periods and are the smallest so far demonstrating the improving noise climate at the Airport. Consequently the populations and households affected have also decreased in all contour bands. The contours are independently produced by the CAA's Environmental and Research Consultancy Department. The modelling uses data and flight track radar from the ANOMS system in place at the Airport.

#### **SOUND INSULATION SCHEME**

BIAL introduced a sound insulation grant scheme in 1978 for properties falling within the 1996 66 dB  $LA_{eq(16hr)}$  contour. The scheme provides sound proofing glazing to domestic properties in areas most affected by noise. The scheme has been open to over 7,600 properties; over 90% of those properties have already benefited with the installation of secondary glazing that significantly reduces the impact of aircraft noise in their homes.

In 2001, BIAL consulted with local stakeholders and acoustic industry specialist's, to develop a new scheme. The new scheme continues to offer secondary glazing to those properties within the original scheme boundary that have not already taken up the offer of secondary glazing.

In addition, the Airport Company created a Phase II for properties closest to the Airport, which is based on the 2002 63 dB  $LA_{eq(16hr)}$  contour. Properties within this

boundary for Phase II of the Sound Insulation Scheme are eligible for repeat grants. These grants are a one off opportunity for householders to improve the noise climate in their homes and can be used for High Specification Double Glazing or replacement secondary glazing and acoustic loft insulation. A maximum grant of £3,000 is available to fund these works and since the launch of Phase II over £1.4 million has been invested. Over the past 30 years the Airport has invested over £12 million to insulate more than 7,000 properties with high specification double glazing, secondary glazing, ventilator units and loft insulation.

BIAL currently makes available, a budget of £200,000 in relation to the Sound Insulation Scheme. Householders in private and council owned properties are to be notified of their eligibility and invited to express interest in the scheme. Details of this new scheme are given below.

- Residents in the 2002 63 dB LA<sub>eq(16hr)</sub> noise contour will be offered a review of the insulation provided under the old scheme, bringing it up to date.
- The Airport Company will contribute a maximum of £3000 per property for high specification double-glazing and ventilator units, new secondary glazing, and loft insulation or a combination up to the maximum value.

There were 43 properties insulated in 2010 under the Sound Insulation Scheme

Map two at the back of the report shows the northern end of the runway and associated housing and gives an indication of the phasing of work for the coming years.

## SCHOOLS INSULATION

As stipulated in the Section 106 Agreement, the Airport Company investigated the possibility of noise insulation for schools within the 1998 69dB LA<sub>eq(16hr)</sub> noise contour. The original investigation focused on Mapledene School. The Airport Company agreed to allocate some funding for the Local Education Authority to spend as deemed appropriate, thereby fulfilling Clause 4 of Schedule 4 relating to noise control.

Each year the Airport Company makes £50,000 available for the insulation of schools against aircraft noise through the replacement of windows and the creation of temporary classrooms and quiet areas.

Since the inception of the S106, the Airport Company has funded school improvement schemes totalling over £800,000. The scheme is aimed to fund improvements to the noise climate within schools falling within the 66 LA<sub>eq(16hr)</sub> noise contour.

## NOISE

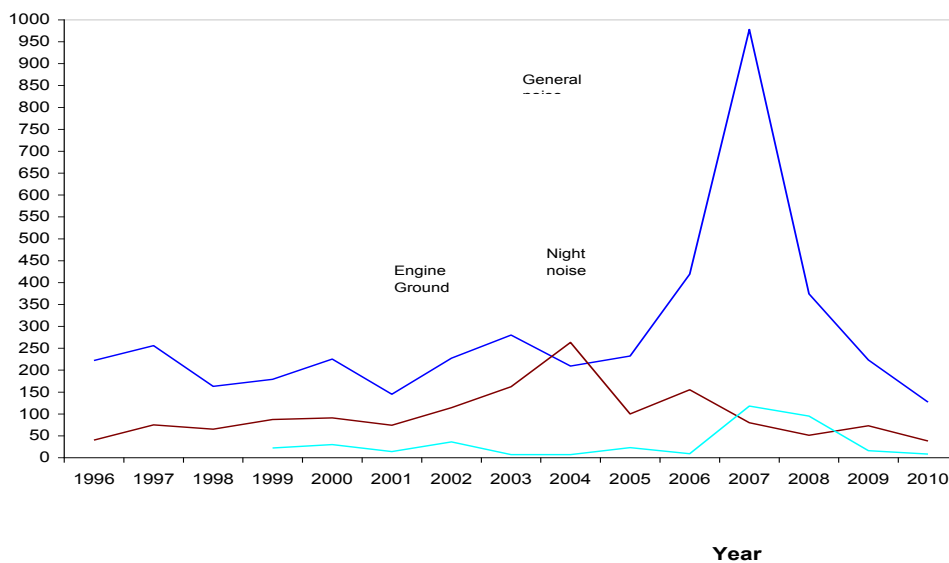
Table 6 shows the number of noise concerns received by the Airport Company's Environment Team since the Section 106 Planning Agreement came into force in 1996. The company is required under Clause 10 of Schedule 4 to keep a record of all noise-related complaints and provide written details to SMBC annually. The Airport Company goes beyond this obligation and records all complaints by type and number.

**Table 6. Noise concerns since 1996 at Birmingham Airport**

Year	General Noise	Night Noise	Engine Ground Runs
1996	222	40	Not recorded separately
1997	256	75	Not recorded separately
1998	163	65	Not recorded separately
1999	179	87	22
2000	225	91	30
2001	145	74	14
2002	227	114	36
2003	280	162	7
2004	209	263	7
2005	232	100	23
2006	419	157	9
2007	978	80	118
2008	374	51	95
2009	223	73	16
2010	127	38	8

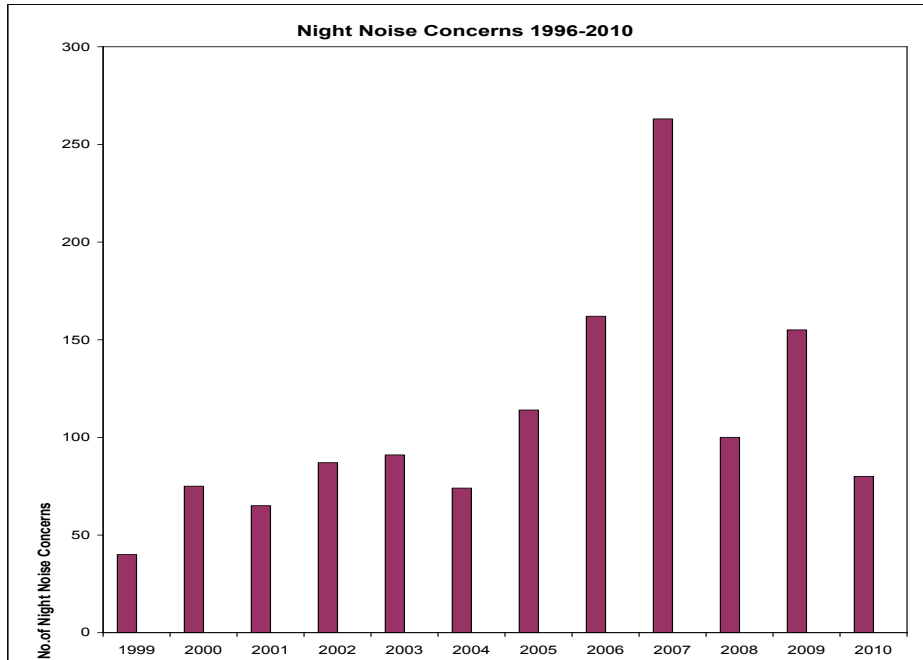
The number of complaints for General Noise, Night Noise and Ground Noise has shown a reduction across the board for 2010. The number for General Noise complaints is the smallest received since 1996.

**Figure 2. BIAL noise concerns 1996-2010**



The Airport Company's Environment Team produces an Annual Complaint Report, which seeks, as far as possible, to identify trends.

**Figure 3. Night Noise concerns 1996-2010**



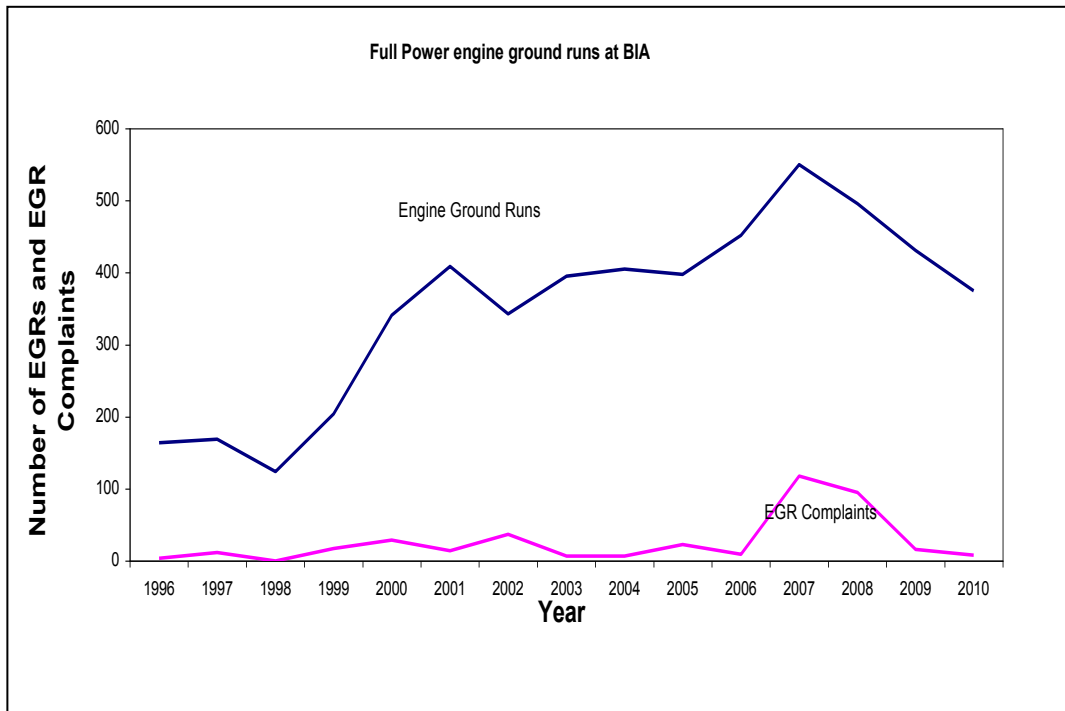
**FULL POWER AIRCRAFT ENGINE GROUND RUNNING**

Engine ground running is an essential safety aspect of aircraft maintenance. However it has a noise impact on local communities and as such generates specific complaints.

Clause 11 of Schedule 4 of the Section 106 Planning Agreement obliges the Airport Company to observe certain restrictions on ground running of engines and to follow set procedures designed to minimise noise disturbance. During the night-time there is a ban on full power engine ground running. In the morning shoulder period (0600-0700), BIAL and the Solihull MBC have agreed a noise-limiting scheme, which is reviewed every two years.

Full power engine ground runs are only permitted after an application form has been sent to and approved by the Airfield Duty Manager (ADM) who then notifies the Environment Team. The number of full power engine ground runs that are approved are reported to SMBC and other interested parties in the quarterly environment monitoring report. Figure 5 shows the total number of full power engine ground runs that occurred between 1996 and 2010. Full power engine ground runs are only permitted at specific locations, Map Three, at the end of the report, shows these locations at BIAL, with Taxiway Echo being the preferred location.

**Figure 4. Total number of Engine Ground Runs (full power) at BIAL 1996-2010**



**IDLE POWER AIRCRAFT ENGINE GROUND RUNNING**

The number of idle power engine ground runs are recorded during the morning shoulder period, but are not monitored by Solihull MBC as part of the Section 106. In 1999 noise consultants working for the council concluded that idle power engine ground runs had no significant noise impact.

Engine Ground Running is prohibited during the Night Time Period. However a six month trial took place to allow idle engine ground running during the night time period between January and March 2009, after permission was granted for a temporary Airport Operational Instruction. The Solihull MBC Airport Working Party agreed to a trial for stands 1-45, which could be used for idle ground running during the trial period.

During the trial 60 idle power aircraft runs took place with no resulting complaints registered. The Airport Company conducted two noise studies, one in Elmdon and another in Marston Green, using their portable noise monitor, during the trial period. The studies conclude that no noise events were registered as a result of engine ground running.

In November 2009 SMBC Planning Committee approved Idle Engine Ground Running on all Aircraft Stands (with exception of the 80's stands) during the night period. The Airport is still keeping this under review and discussions are taking place with Solihull MBC with an anticipated response in February 2011. The Solihull MBC Airport Working Party are also monitoring the issue

## AIRCRAFT ENGINE GROUND RUNNING IN THE MORNING SHOULDER PERIOD

All full power and idle engine ground runs occurring in the morning shoulder period are monitored by the Environment Team. Since October 26 1999, the Airport Company has been operating under a Section 106 Planning Agreement (Schedule 4, Clause 11b) to consider restrictions on engine ground running between 0600 and 0700. At that time it was felt that the airport's restrictions on ground running were sufficient. Following a noise monitoring exercise a year later, Solihull MBC's noise consultant recommended the introduction of a quarterly noise level limit, set at 79dB LA<sub>eq</sub> calculated for a 1 hour period.

There was a review of the engine ground running in the Morning Shoulder Period in 2009 and as specific complaints about this are rare it was decided that the current scheme should remain in place. This was considered at SMBC's Planning Committee in November 2009.

## NOISE RESTRICTIONS OUTSIDE THE NIGHT PERIOD

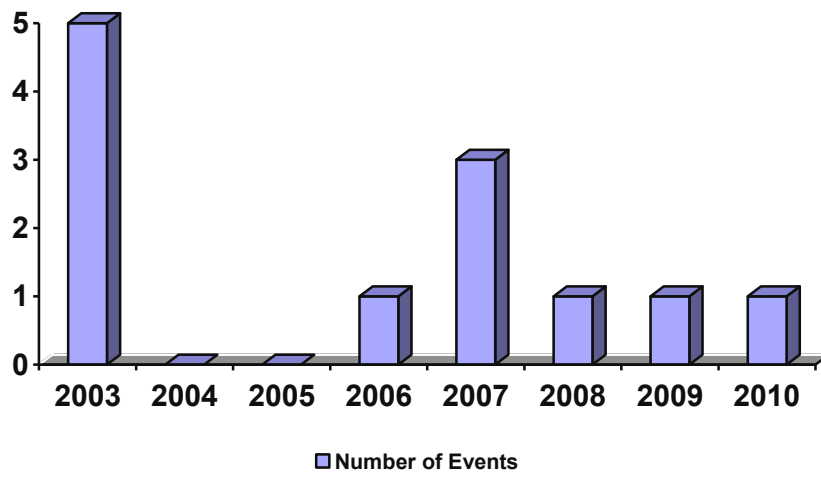
The Section 106 Agreement contains a clause which requires that the Airport Company should investigate the possibility of imposing daytime noise level restrictions on aircraft operations. Accordingly, in 2003, BIAL implemented a daytime noise limit of 92 dB(A) for departing aircraft as measured at noise monitors 1 and 2. This is lower than the limit at London Airports and the same as that in place at Manchester.

There are seven noise-monitoring terminals situated around the Airport, three to the North, three to the South and one on the airfield itself. Noise Monitoring Terminal 1 is at Bucklands End, Hodge Hill and 2 is at Eastcote Lane, Eastcote.

NMT's one and two are both situated at a point 6.5 km from the start of roll (where an aircraft applies full thrust for the first time as it starts its take-off). The NMTs are positioned at the point at which an aircraft is able to reduce thrust for the first time after take-off.

Currently, a departing aircraft which exceeds 92 dB(A) at either of the centre Noise Monitors between 0601 and 2329 is liable for a surcharge, such that the operators must pay £500 plus an additional £150 per decibel over the limit and the resulting fines are added to the community fund (see Schedule 8 for details of the fund and grants awarded in 2010).

Figure 5. Daytime noise events >92 dB(A) at BIAL 2003-2010



## **5. NIGHT FLYING**

BIAL is bound by the S106 to "*have and maintain a Night Flying Policy which restricts the use of the airport by aircraft taking off or landing during the Night Period and the Shoulder Periods*".

The Night Flying Schedule, which has driven the creation of the Night Flying Policy (NFP), is a complex multi-clause part of the contract between Solihull MBC and the Airport Company but the main points can be summarised as follows.

- The NFP shall be reviewed every two years.
- The NFP shall incorporate a quota system.
- All ATMs will be subject to a quota count (except exempt aircraft).
- The Airport Company will impose surcharges on aircraft breaching an agreed noise level during the night period and will report violations to Solihull MBC.

### **CURRENT NIGHT FLYING POLICY**

The Night Flying Policy is reviewed every two years and runs from the end of October the end of the following October.

The current Night Flying Policy is similar to that of Manchester Airport and the BAA London Airports but in some respects is more stringent due to the annual Air Transport Movement Limit and Quota Limit being lower at BIAL.

The Night Flying Policy contains a combination of limits which include an Annual Limit for ATM's, an Annual Noise Quota Count and surcharging aircraft which violate the Night Noise Level of 87 dB(A).

The Airport is in consultation with Solihull MBC to look at the methodology for the Annual Limit for Night Time ATM's together with amendments to the administration process with regards to the 2010 Interim Night Flying Policy Review. It is anticipated to complete this early in 2011.

The total number of Air Transport Movements permitted during the night period (23:00 to 06:00) from October 2009 to October 2010 should not exceed 5111, representing 5% of the total air transport movements for the previous financial year.

The total quota count remains as in the previous year as 4000 per annum and is operated between 23.30 and 06.00 hours.

The Airport Company has revised the methodology for administering the Night Flying Policy in line with industry standards and follows the requirements of the Section 106 Obligations. A new banding has been introduced to show a Quota Count of 0.25. Some aircraft previously were allocated 0 and 0.5 QC and have been re-allocated the new band of 0.25 QC. The QC database is also being updated to reflect any changes arising from aircraft upgrades. This was agreed by SMBC in 2009.



**QUOTA USAGE FOR PREVIOUS NIGHT FLYING POLICY YEARS**

The Quota Count Limit is based on measurements of the perceived noisiness of aircraft which takes into account the type of noise (tonality) made by the aircraft in question, i.e. propeller noise, a low drone, high-pitched whistle or roaring sound or a combination of all of them.

Aircraft noisiness is measured in EPNdB (effective perceived noise in decibels). EPNdB values are clustered together into groups of 3 decibel increases for the purposes of producing a simple quota count. A rise of 3 EPNdB equates to a two-fold increase in noise energy. This is why the quota count doubles with increasing noisiness of the aircraft.

**Table 7. Relationship between EPNdB and aircraft quota count**

Noise Classification	Quota Count
<b>84 – 86.9 EPNdB</b>	<b>0.25</b>
<b>87 – 89.9 EPNdB</b>	<b>0.5</b>
<b>90 – 92.9 EPNdB</b>	<b>1</b>
<b>93 – 95.9 EPNdB</b>	<b>2</b>
<b>96 – 98.9 EPNdB</b>	<b>4</b>
<b>99 – 101.9 EPNdB</b>	<b>8</b>
<b>Greater than 101.9 EPNdB</b>	<b>16</b>

*Ref: NATS/CAA Supplements to the United Kingdom AIP SUP: 038/2009 [10]*

Table 8 gives a breakdown of the quota usage for the Night Flying Policy year (October – October). There is also provision in the Night Flying Policy that the quota can be reclaimed for aircraft registering less than 74dB(A) at the Noise Monitoring Terminals.

**Table 8. Quota utilisation at BIAL 1997-2010**

Year	Season	Night ATM Limit	Unused ATMs %	Night Quota Count	Unused Quota Count %
1997-98	Total	<b>4200</b>	27	5500	No data
1998-99	Total	<b>4200</b>	14	5500	64
1999-00	Summer	4180	31	4000	
	Winter	1320	50		

	Total	<b>5500</b>	<b>34</b>		53
2000-01	Summer	4484	36	4000	
	Winter	1416	62		
	Total	<b>5900</b>	<b>42</b>		54
2001-02	Summer	4727	41	4000	
	Winter	1493	61		
	Total	<b>6220</b>	<b>42</b>		54
2002-03	Summer	1427	38	4000	
	Winter	4519	22		
	Total	<b>5946</b>	<b>26</b>		45
2003-04	Summer	4574	28	4000	
	Winter	1444	20		
	Total	<b>6018</b>	<b>26</b>		46
2004-05	Summer	4435	23	4000	
	Winter	1401	62		
	Total	<b>5836</b>	<b>32</b>		51
2005-06	Summer	4102	20	4000	
	Winter	1295	20		
	Total	<b>5397</b>	20		54
2006-07	Summer	4319	22	4000	
	Winter	1364	34		
	Total	<b>5683</b>	<b>25</b>		50
2007-08	Summer	4128	14	4000	
	Winter	1303	27		
	Total	<b>5431</b>	<b>18</b>		57
2008-09	Summer	3969	24	4000	
	Winter	1253	31		
	Total	<b>5222</b>	<b>26</b>		50
2009-10	Summer	<b>3884</b>	<b>5</b>	4000	
	Winter	<b>1227</b>	<b>0.7</b>		57
	Total	<b>5111</b>	<b>4</b>		

NUMBER OF VIOLATIONS

Aircraft exceeding the 87dB(A) night noise limit will be subject to a surcharge, currently a full runway charge (up to £4000). During the period from October 2009 and October 2010 there were 6 violations of the Night Flying Policy. Four of these violations were due to military flights and were therefore exempt from penalties. Two of the remaining violations were not surcharged as they were within the tolerance allowed. One flight was surcharged and the surcharge on the remaining flight was waived on safety grounds as the exceedence was due to very high wind speeds. The details are shown in Table 9.

**Table 9. Details of the Night Flying Policy violations in the last night flying year**

Date/Time	Airline	Flight	Aircraft Type	Noise Level	Surcharge
17/1/2010	Military	Arr	C17	88	No
24/1/2010	Military	Arr	L101	87.8	No
20/7/2010	Monarch	Arr	A321	90	No
5/10/2010	Thomas Cook	Arr	B752	89	waived

28/10/2010	Thomsonfly	Arr	B763	87.5	Yes
29/11/2010	Military	Dep	AN26	87.3	No

Since the Section 106 Planning Agreement was implemented in 1996, night noise infringements have decreased consistently. The number of night flights has remained relatively stable and the phasing out of noisier aircraft and the night flying policy surcharge have brought about a reduction in excessively noisy night flights.

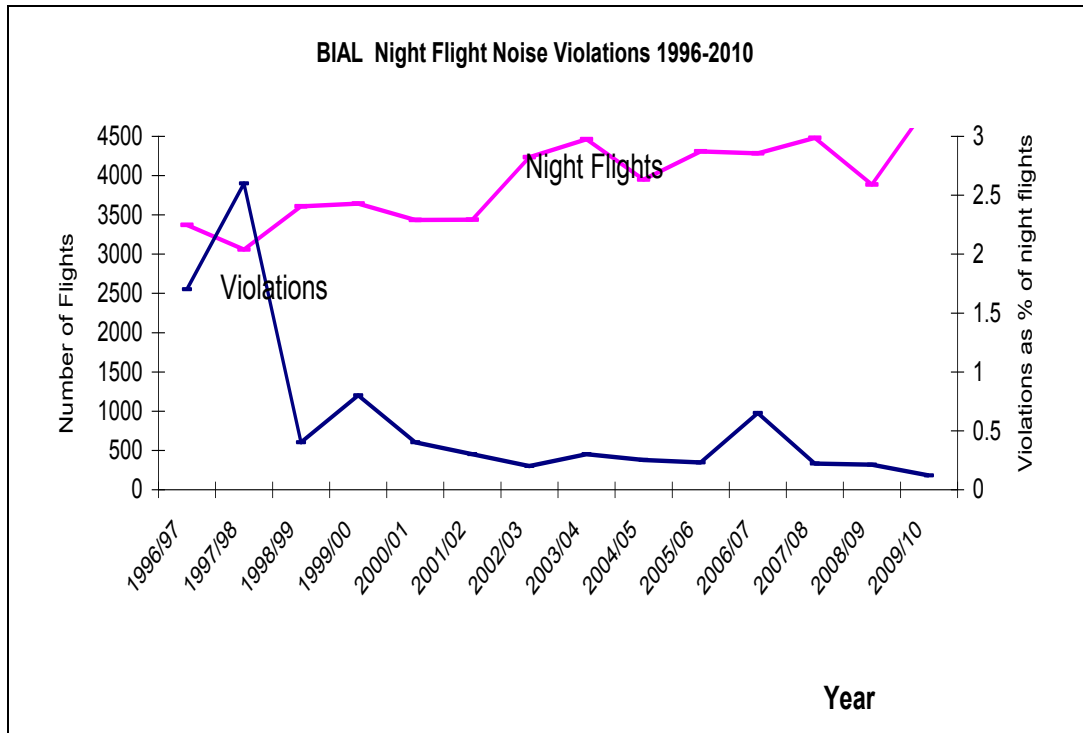
The table below details the night noise picture at BIAL since 1996 with an additional year 1990/91 included for comparison.

**Table 10. Night-time noise violations at BIAL 1990 and 1996-2010**

Year	Total Night Flights	Total Noise Quota	Total Infringements	Infringements (% of night flights)
1990/91	4767	n/a	n/a	n/a
1996/97	3369	n/a	57	1.7
1997/98	3056	n/a	79	2.6
1998/99	3608	2002.5	13	0.4
1999/00	3640	1936	29	0.8
2000/01	3434	1832.5	15	0.4
2001/02	3439	1854.5	9	0.3
2002/03	4234	2166	9	0.2
2003/04	4460	2161.5	15	0.3
2004/05	3947	1957	10	0.25
2005/06	4307	2172.5	10	0.23
2006/07	4283	2174.5	28	0.65
2007/08	4479	2281.5	10	0.22
2008/09	3886	2010	8	0.21
2009/10	4907	1704.5	6	0.12

The graph below shows the night noise infringements as a percentage of total night flights at BIAL since the introduction of the night flying policy in 1996.

**Figure 6. Night Noise Violations compared to number of night flights at BIAL 1996-2010**



## 6. AIR QUALITY

Schedule 6 Paragraphs 1 and 2 state that the Airport Company should maintain an air quality monitoring (AQM) station and carry out regular diffusion tube monitoring at the airport. A biennial NO<sub>2</sub> diffusion tube survey is also undertaken, the most recent being in 2010.

### AIR QUALITY MONITORING DATA

From 2001 the airport has arranged for the National Environmental Technology Centre (Netcen) to collect, audit and verify BIAL air quality data, then compile monthly and biannual ratified reports. Based on the ratified six monthly Netcen reports, AEA Technology produces an annual report on air quality at BIAL.

The objective levels are those published by the Expert Panel on Air Quality Standards (EPAQS) which are designed to protect the health of persons sensitive to air pollution (see table below). These feed into the Government's National Air Quality Standards. (NAQS)

**Table 11. UK Expert Panel on Air Quality Standards Pollutant Levels**

Band	O <sub>3</sub>	NO <sub>2</sub>	SO <sub>2</sub>	CO	PM <sub>10</sub>
	8 hour running mean µgm <sup>-3</sup>	Hourly mean µgm <sup>-3</sup>	15 minute mean µgm <sup>-3</sup>	8 hour running mean mgm <sup>-3</sup>	24 hour running mean µgm <sup>-3</sup>
Low	0-32	0-95	0-88	0-3.8	0-16
	33-36	96-190	89-176	3.9-7.6	17-32
	67-99	191-286	177-265	7.7-11.5	33-49
Medium	100-126	287-381	266-354	11.6-13.4	50-57
	127-152	382-476	355-442	13.5-15.4	58-66
	153-179	477-572	443-531	15.5-17.3	67-74
High	180-239	573-635	532-708	17.4-19.2	75-82
	240-299	636- 700	709-886	19.3-21.2	83-91
	300-359	701-763	887-1063	21.3-23.1	92-99
Very High	360+	764+	1064+	23.2+	100+

**Table 12. Relationship between EPAQS pollutant levels and human health**

Band	Health Effect
Low	Effects unlikely to be felt even by individuals known to be sensitive to air pollutants.
Medium	Mild effects, unlikely to require action, may be noticed amongst sensitive individuals.
High	Significant effects experienced by sensitive individuals, action to avoid polluted areas may be needed.
Very High	The effects listed for high may worsen.

The NAQS levels provide for a certain number of exceedences per year. These are given in the table below.

**Table 13. Air quality results for 2010 at sites around Birmingham**

Pollutant	Objective	Measured as	NAQS Exceedence Limit	BIAL *	B'ham Roadside **	Coventry Memorial park
Ozone O <sub>3</sub>	100µgm <sup>-3</sup>	daily maximum 8 hour running mean	10 per year	41	0	Not measured
Nitrogen Dioxide NO <sub>2</sub>	200µgm <sup>-3</sup>	hourly mean	18 per year	28	7	0
Sulphur Dioxide SO <sub>2</sub>	266µgm <sup>-3</sup>	15 minute mean	35 per year	2	0	0
Carbon Monoxide CO	10.0mgm <sup>-3</sup>	daily maximum 8 hour running mean	-	0.2	0	Not measured
Particulate Matter PM <sub>10</sub>	50µgm <sup>-3</sup>	daily mean	35 per year	19	20	Not available

\* Ratified data for BIAL only – all other is unrated and cannot be used for direct comparison

Ozone is a transboundary air quality issue. Therefore air quality levels recorded at the Airport Company's Air Quality Monitoring Station are not an indicator of levels generated locally. Ozone is rather a secondary pollutant, being formed through a complex series of chemical reactions at low level, involving nitrogen dioxide and hydrocarbon compounds, and in the presence of energy in the form of sunlight.

The Section 106 Planning Agreement (Schedule 6, Clause 8) requires that measures must be undertaken by the Airport Company if air quality falls below a required standard. The table above indicates that ozone alone was in breach of the acceptable limits. However, remedial measures are applicable only if a direct link can be established between the operations of the airport and the air quality problem. Given the nature of the production of ozone, the Airport Company cannot be expected to take any further measures beyond those outlined in their air quality policy [8].

#### NITROGEN DIOXIDE DIFFUSION TUBE SURVEY

Diffusion tubes are a method of measuring the concentration of nitrogen dioxide in the air. The advantage of this system is the relatively low cost, which allows for many different areas to be measured at the same time and for a pattern of NO<sub>2</sub> distribution to be identified.

BIAL undertakes surveys every two years with the latest one being completed in 2010 in conjunction with Birmingham City Council and Solihull Metropolitan Borough Council. The survey was carried out for a period of 13 weeks between July and October 2010 which represents one of the busiest periods for the Airport. Monitoring locations were based upon a combination of urban, rural and residential sample points.

The Airport Company employs air quality consultants AEA Technology to analyse and report on the data obtained during the nitrogen dioxide surveys. To date there have been nine surveys carried out, the results of which are given below.

**Table 14. NO<sub>2</sub> survey results 1994-2010**

	NO <sub>2</sub> concentrations (ug/m <sup>3</sup> )								
	1994	1996	1998	2000	2002	2004	2006	2008	2010
BIAL Sites Mean	40	46	34	42	45	33	34	38	37
BCC Sites Mean	30	34	22	27	31	23	27	22	25
SMBC Sites Mean	30	32	24	25	27	24	28	25	25
Survey Mean	34	39	28	33	36	27	30	28	29

The latest survey showed very similar levels compared to previous years.

More information about nitrogen dioxide surveys at the airport can be obtained directly from the Environment Team. [9]

#### AIR QUALITY COMPLAINTS

Schedule 6, Clause 6 of the Section 106 Planning Agreement requires the Airport Company to record and report the number of concerns raised by the public relating to air quality, on an annual basis.

**Table 15. Concerns relating to air quality at BIAL since 2000**

	Year										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Total</b>	<b>12</b>	<b>16</b>	<b>13</b>	<b>5</b>	<b>11</b>	<b>20</b>	<b>9</b>	<b>15</b>	<b>6</b>	<b>3</b>	<b>5</b>

Prior to 2000, air quality concerns were included in a general category, 'pollution'. Air quality does not constitute a major area of concern for complainants at BIAL.

The Airport Company Environment Unit also investigates what are loosely termed 'oily deposits'. Samples are taken to Birmingham City Laboratories for independent analysis. Since 1996, 45 such investigations have been carried out, none of which has been found to be attributable to aircraft.

Laboratory results have indicated that the deposits ranged from natural algae growth in ponds, through pollen coating on windows to bird excreta containing the remains of consumed blackberries.

All complaints relating to oily deposits, odour and general health concerns are logged and included in the total air quality concerns

## 7. AIR TRAFFIC

Schedule 7 of the Section 106 Agreement stipulates that Noise Preferential Routes (NPRs) should be used by aircraft departing the airport, the usage of which should be monitored and reported quarterly to Solihull MBC.

### NOISE PREFERENTIAL ROUTES

Aircraft departing from Birmingham International Airport are required to follow Noise Preferential Routes (NPRs). These are 3km wide corridors (1.5 km either side of the Standard Instrument Departure (SID)). There are five NPRs that are 3 km wide for aircraft departing from BIAL: three to the north and two to the south. If an aircraft deviates from these NPRs at an altitude less than 3000 feet, then it is considered to be off track. Smaller aircraft less than 5700kg (such as executive jets) are exempt from adhering to NPRs. The NPRs relate only to departing aircraft. Arriving aircraft do not have a specified route to follow before the final approach, where they join the Instrument Landing System. The NPRs are designed to take departing aircraft over the least populated areas wherever practicable and can be flown by any aircraft operating from the Airport.

The departing aircraft use standard instrument departure (SID) procedures when taking off. The direction of aircraft on departure and arrival depends on the wind direction. When the wind is from a northerly direction aircraft will take off over the north-west and arrive from the south-east

There are many cases where an aircraft can be off track for legitimate reasons, i.e. meteorological conditions or to maintain separation distance for safety reasons. All off-track aircraft are identified and the airline notified of their airlines performance.

In 2006 BIAL launched 'Operation Pathfinder'. This is a scheme to encourage better track keeping performance amongst those airlines, which operate, from Birmingham. BIAL has set a voluntary target of 95% of aircraft 'on-track'. The ANOMS system allows the Airport Company to closely monitor the track keeping of departing aircraft and the Airport holds biannual meetings with the airlines to discuss any track keeping issues. During 2010 over 98% of aircraft were "on-track."

More Airlines have now joined the scheme with awards being presented to Airlines showing the best improvement.

Currently, there is no provision to surcharge operators whose aircraft are off track. Surcharging at BIAL relates solely to daytime and night-time noise levels. While the Civil Aviation Act 2006 does allow airports to surcharge airlines based on track keeping performance, the track keeping programme in place at Birmingham has seen continual improvements in performance without the need for fiscal incentives.



## CONTINUOUS DESCENT APPROACH

The Continuous Descent Approaches (CDA's) which were launched in 2009 are considered to be the best practice in the UK in terms of performance. During 2010 96.72% aircraft achieved compliance using the CDA procedure

Aircraft are collectively achieving over 90% compliance with the CDA procedure and this will be built into the Operation Pathfinder Programme with the aim to further improve compliance and reduce the noise impact. CDA allows aircraft to descend on less power making a smooth approach without levelling off rather than using the traditional stepped approach. They are conducted from 4000 ft to landing for every ILS approach. It is hoped that next year the descents can be started from 6000 feet.

Continuous Climb Departures are now being considered. At present most departing aircraft from the Airport are given a continuous climb up to 6000 feet. This will change to 8000 feet from 2011. This will help lower aircraft fuel consumption and lower the CO2 emissions as the highest levels of fuel burn and Co2 emissions are generated by an aircraft climbing to 10,000 feet. Air Traffic controllers are encouraged to transfer aircraft to the next controlling agency early to help facilitate climbs past the 10,000 feet level.

NATS are considering the re-introduction of Eastern Vectors following requests from airlines. This will mean that aircraft will be vectored on the Eastern side of the Airfield when on arrival from the South to Runway 15. This will not only save the airlines a minimum of 5 track miles for each flight but a typical aircraft could save approximately 220kg of CO2 per flight.

The Airport Company is preparing a report on how the Airport proposes to adapt to Climate Change with its operations and infrastructure. This report will be submitted to DEFRA in May 2011. The Airport Company has also signed up to the highest level at Sustainable Aviation's Aircraft on the Ground CO2 Reduction Programme. The Airport Company is committed to reducing ground based emissions.

Operation Pathfinder is already above target which is helping with the emissions and the Airport facilitates taxiing with less than all engines operating- sometimes referred to as Single Engine Taxiing. In 2010 the Airport Company made an amendment to the UK Air Pilot to reflect this.

## NUMBER OF ATMs

Although not required by the Section 106 Agreement, the annual number of Air Transport Movements (ATMs) is a useful indicator of the level of operation at BIAL. The total air traffic movements include cargo, passenger and private/executive movements.

**Table 16. Total air traffic movements at BIAL 1996-2010**

Year	Total Aircraft Movements
1996	96,266
1997	100,726
1998	108,852
1999	118,431

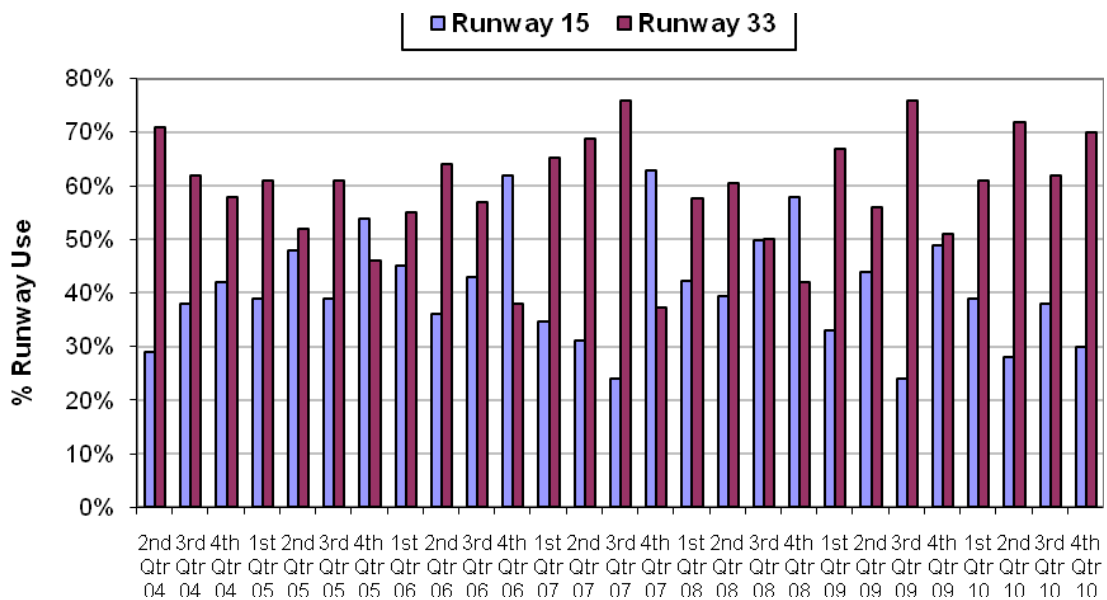
2000	126,633
2001	125,209
2002	125,083
2003	128,740
2004	120,799
2005	123,192
2006	119,532
2007	114,717
2008	112,470
2009	101,627
2010	96,668

**RUNWAY USAGE**

The runways at BIA are named after the points of the compass to which they most closely approximate. This is standard throughout the aviation industry. Hence Runway 33 follows a 330° orientation (0° or 360° being north) and Runway 15, being the opposite end of the same length of tarmac, is at an orientation of 150°.

Although not a specific requirement of the Section 106 Agreement, the pattern of air traffic using the runway at BIAL does have an impact on how local people are affected by airport operations. Wind direction and meteorological conditions determine runway usage.

**Figure 7. Runway usage at BIAL**



## 8. COMMUNITY BENEFITS & ENVIRONMENTAL IMPROVEMENTS

This Schedule of the Section 106 Agreement states that the Airport Company should set up and administer a Community Trust Fund (CTF).

The purpose of the CTF is to invest in a range of local projects, which benefit the community and environment. The CTF was established in 1998 and is a registered charity. The trustees comprise two representatives of Solihull MBC, two from Birmingham City Council, three from the Airport Consultative Committee and two from the Airport Company. All administration costs are met by BIAL.

### COMMUNITY TRUST FUND

The Community Trust Fund is a registered charity run by Trustees. The income raised consists of an annual £50,000 investment from the Airport Company, and the revenue raised from the surcharges imposed for violations of the daytime noise limit and that given in the night flying policy. This money is then invested in projects that benefit those areas affected by the Airport.

Over the year of 2010 The Community Trust Fund awards amounted to a total spend of £52540.48. This sum has been distributed among the projects listed in the table below. Any revenue in the CTF that has not been spent in previous years is carried over to the next financial year.

Since the inception of the Community Trust Fund in 1998 a total of £986,778 has been awarded to projects benefiting the local community.

**Table 17. Annual Community Trust Fund awards 1998-2010**

Year	Total Awarded (£)
1998	98,156
1999	83,993
2000	153,139
2001	103,751
2002	97,670
2003	90,212
2004	72,868
2005	65,444
2006	51,175
2007	53,027
2008	67,349
2009	49,994
2010	52540

In addition to the awards above the Airport took 200 children from Acorns, and their families, on a short flight at Christmas and entertained them in the Terminal. 150 'goody bags' were also given out to children in support of the switch on of the Christmas Lights in Lea Village.

In other events children from Marston green Junior School helped plant crocus bulbs and the event raised money for Rotary International End Polio Now campaign.

The following table indicates the monies awarded for the year.

**Table 18. Community Trust Fund awards for the financial year 2010**

<b>Project</b>	<b>Area</b>	<b>Awarded</b>	<b>Purchase</b>
Hodge Hill United Reform Church	Hodge Hill	£3000.00	New doorway and access ramp
Heart of Eden Association	Shard End	£3000.00	Solar Powered hot water system
Bradford Arms Bowling Club	Castle Bromwich	£2000.00	Kitchen Refurbishment
Caravela Dance Academy	Shard End	£800.00	Portable music system
Training Ship Stirling	Shard End	£3000.00	IT equipment
Four Oaks Saints Cricket Club	Sutton Coldfield	£3000.00	New mower system and pitch repairs
St Thomas Community Project	Garretts Green	£1920.48	Commercial refrigerator
Castle Bromwich Youth PC	Castle Bromwich	£1500.00	Plants and garden equipment
Northern Star Community Arts	Chelmsley Wood	£600.00	Arts and sports materials
Solihull Life Opportunities	Solihull	£3000.00	IT equipment
Solihull Canoe Club	Catherine de Barnes	£2000.00	New Kayak, and paddle machine
Knowle Village Cricket Club	Knowle	£1500.00	Bowling machine
Solihull Environment champions	North Solihull	£3000.00	Plant and materials for show garden
Solihull Guide Dogs	Solihull	£2500.00	Marquee for fundraising
Enable Solihull	Solihull	£3000.00	IT equipment
Colehall Lane Colts FC	Stechford	£500.00	Training aids
Water Orton Tennis Club	Water Orton	£3000.00	Court refurbishment and fencing
N Warwickshire neighbourhood watch	N Warks	£1800.00	Media equipment
Wishaw Cricket Club	Sutton Coldfield	£1800.00	Wicket protection and practice nets
Bham Disability Resource Centre	Yardley	£720.00	Camera, printer and art materials
Sporting FC	Hodge Hill	£2500.00	Training aids
Hillstone Primary School	Shard End	£1500.00	Greenhouse, shed and water butt
Centre Stage	Balsall Common	£1400.00	Communication equipment
E Yardley Neighbourhood Forum	Yardley	£300.00	Pa system, microphones and folding tables
2030 Squadron, ATC	Sheldon	£2800.00	IT equipment
Bromford Lions FC	Bromford	£1000.00	Portable training goals
Castle Bromwich Hall Gardens Trust	Castle Bromwich	£1400.00	Heavy duty marquees for events

## **CONCLUSION**

The current economic downturn has contributed to the decline in passenger numbers during 2010, not only for BIAL but also for many other UK Airports. This will continue to be a challenge to the Airport and the Airport Company continually meets with airlines to identify opportunities for destinations, routes and service for the future.

This year saw other issues which had an impact on the Airport as a whole. In April 2010 the Airport, together with many other UK airports, was closed for some days as a result of the UK airspace being closed due to ash from a volcano in Iceland.

The winter saw a prolonged spell of severe weather and diversions from other Airports. The Airport had to close for a short period but remained open for longer periods than many other UK airports. During this period members of the Airport Company's office staff, including the CEO, helped in the Passenger Terminal, advising passengers and assisting in baggage delivery and security.

Following the launch of the Operation Pathfinder track keeping forum in 2006, the track keeping performance has increased to 99% and so 2009 saw the most successful year to date in terms of track keeping performance. Through the programme, the Airport Company has successfully engaged with both airlines and NATS to deliver continuing improvements in track keeping performance.

All aspects of the Section 106 Planning Agreement have been audited by the Solihull MBC Airport Monitoring Officer.

The Airport visited a number of community venues throughout 2010 and into 2011 to discuss any environmental issues and concerns. The meetings were open for anyone to attend and were staffed by members of the Airport Staff.

2010 sees Birmingham International Airport continuing to comply with all Obligations within the Section 106 Planning Agreement.

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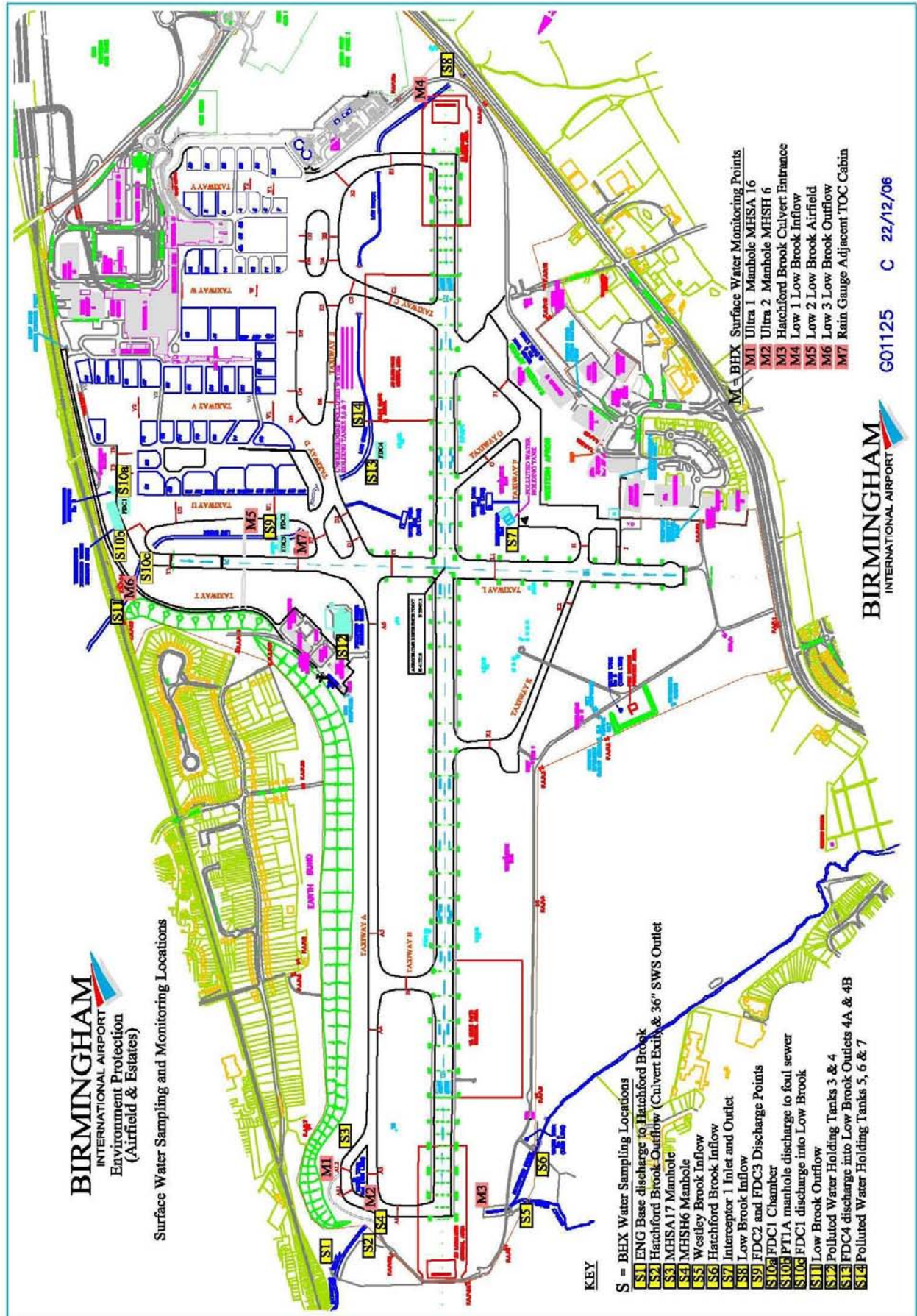
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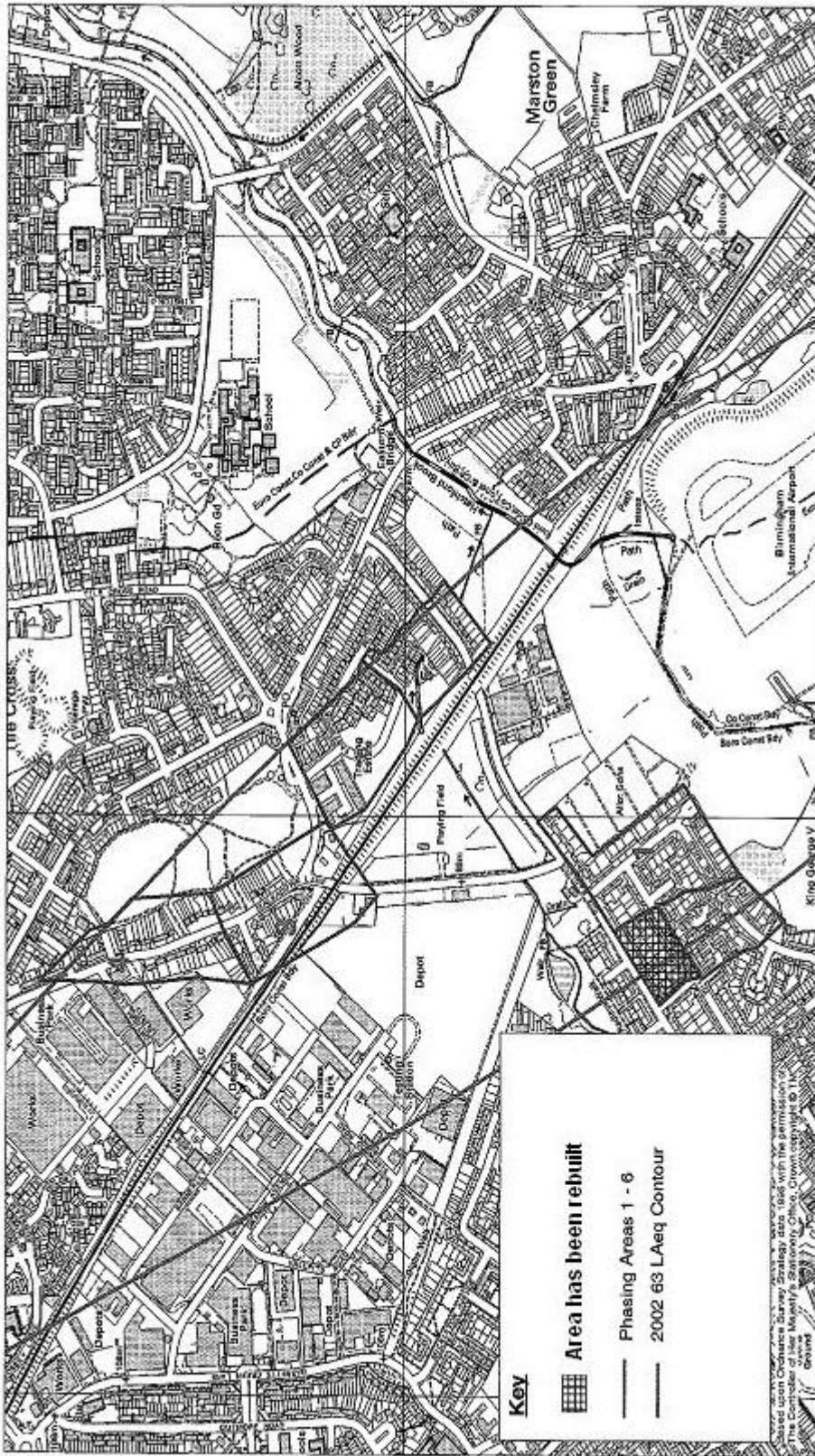
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Map 1

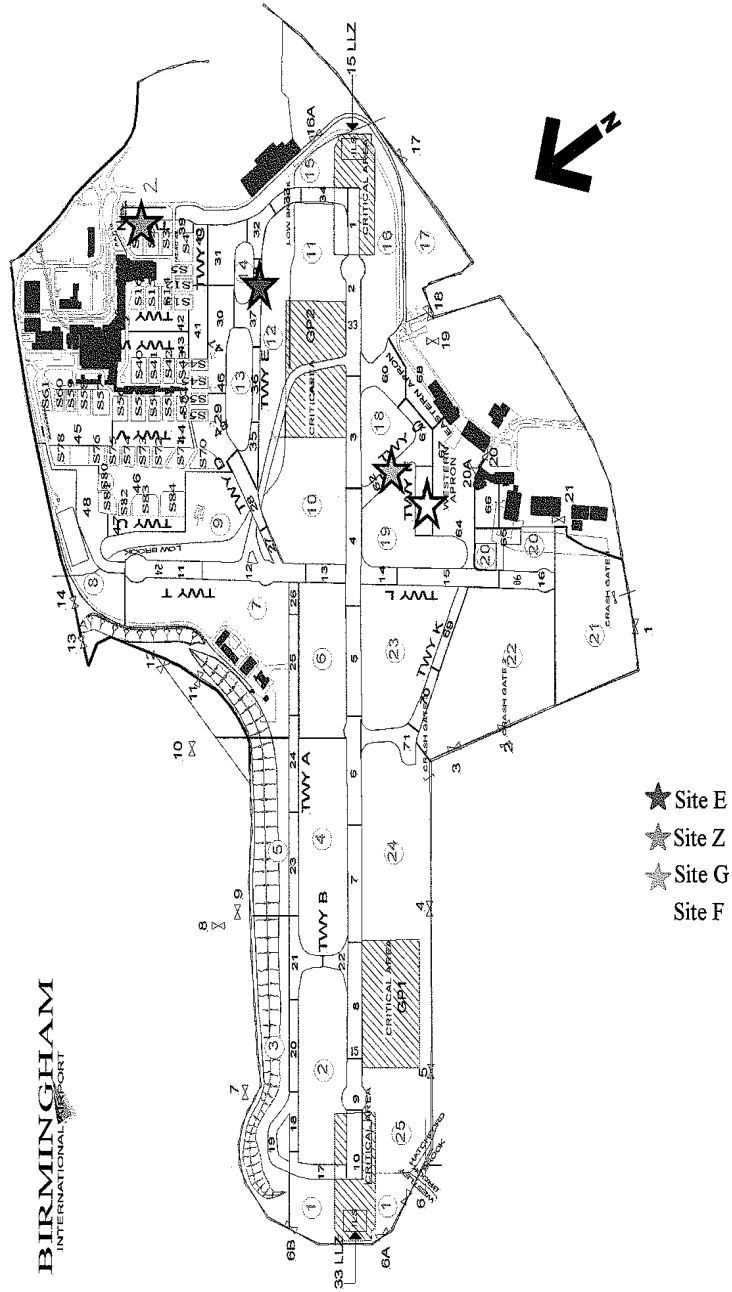


Map showing phasing for Sound Insulation Scheme Areas 1 - 6



Map Two

ENGINE GROUND RUNNING LOCATION PLAN



Map Three