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LONDON LUTON AIRPORT OPERATIONS LTD

Proposed construction and alterations to Airport Way/Airport Approach Road and associated junctions, terminal buildings, pier and walkway, pedestrian link building, mid-term and long-term car parks, new parallel taxiway, parking aprons, etc.

Application No: 12/01400/FUL

Discharge of Planning Conditions 11, 12, 13 and 14

Noise

Report to

London Luton Airport Operations Ltd
Navigation House
Luton Airport
Luton LU2 9LY

A9501-R04-JGC-ZP
4th December 2014

121 Salusbury Road
London NW6 6RG
T 020 7625 4411
F 020 7625 0250
mail@bickerdikeallen.com
www.bickerdikeallen.com

Partners
Philippa Gavey, Giles Greenhalgh, Peter Henson, Roger Jowett, John Miller
Senior Associates Ron Casson, Peter Fung
Associates David Charles, Rod Jenkins, David Trew, Paul Wiseman
Consultants Jeff Charles, Barry Josey, Brian Loudon, John Streeter, Roger Walters
Practice Secretary Brenda Ward-Millar

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1.0 INTRODUCTION

Planning consent was granted in 2014 by Luton Borough Council (LBC) to application 12/01400/FUL submitted by London Luton Airport Operations Ltd (LLAOL). The consent was subject to the imposition of certain planning conditions with respect to several matters including noise. Noise was specifically addressed in planning conditions 11, 12, 13 and 14.

LLAOL and London Luton Airport Ltd (LLAL) have also entered into a Section 106 Town and Country Planning Act 1990 (as amended) Agreement with LBC which includes obligations with respect to noise, given in Schedule 1 Noise Mitigation.

The Section 106 Agreement requires LLAOL to submit the draft Noise Management Plan, the draft Residential Noise Insulation Scheme and the draft Non-Residential Noise Insulation Scheme to LBC for approval. It also requires LLAOL to operate a Noise Violation Penalty System.

Separate to these matters, the Airport operates in accordance with The Environmental Noise (England) Regulations 2006 and has a Noise Action Plan (NAP) approved by DfT and Defra. The current approved NAP includes 55 noise related measures which form part of the overall noise management scheme. The Airport also operates in accordance with the Luton Byelaws approved by the Secretary of State for Transport.

This document sets out the noise schemes proposed by LLAOL to discharge the conditions relating to air noise (Conditions 11, 12 and 13 as set out in the planning permission notice) and ground noise (Condition 14 as set out in the planning permission notice).

A glossary of acoustic terminology is included as Appendix 1.

2.0 CONDITION 11

Condition 11 set out in the planning permission notice is given below.

"11

(a) Prior to commencement of the development details shall be submitted to the Local Planning Authority of a Noise Control Scheme which shall control the noise of aircraft both during the day (0700 - 2300) and the night (2300 - 0700) period.

(b) For the Night Quota Period (2330 to 0600) the scheme shall be based on the Noise Quota System count system (QC System) utilised by other UK Airports including Heathrow Airport.

(c) The scheme shall include sanctions in relation to operators of aircraft which land or take-off in breach of the QC System and shall include exclusion of aircraft movements with a QC

value in excess of QC2 during the night time (2300 to 0700), 6 months and more after commencement of the development. An 'aircraft movement' shall be either a landing or take off by an aircraft.

(d) The scheme shall include details of the procedures to be adopted and shall include measures with the purpose of phasing out of the night-time (2300 to 0700) operations by aircraft with a QC value of greater than 1 on either departure or arrival.

(e) The scheme including the QC System shall be monitored and reviewed on a regular basis. Such a review shall take place, not later than the 1st and 4th year after introduction and every subsequent 5 years.

(f) For the Night Quota Period (2330 - 0600) this shall have the following limits incorporated into the scheme:

> **(i) Total annual movements by aircraft (per 12 month period) shall be limited to 9,650;**
>
> **(ii) The total annual noise quota in any 12 month period shall be limited to 3,500 which, using all reasonable endeavours, shall be reduced at each review until it reaches a point where it does not exceed 2,800 by 2028.**

(g) For the Early Morning Shoulder Period (06.00-07.00) this shall have the following limit incorporated into the schemes:

> **(i) Total annual movements by aircraft in any 12 month period shall be limited to 7000.**

(h) The actual and forecast total number of aircraft movements for the preceding and next 12 month periods shall be reported to the Local Planning Authority every three months.

(i) Within six months of the commencement of development and in accordance with the approved Noise Control Scheme the maximum Noise Violation Limits (NVL) for all aircraft, as recorded by departing aircraft at the fixed noise monitoring terminals, shall be reduced to values which are determined by the noise classification of individual aircraft as follows:

Aircraft Classification on Departure	NVL (dBA)
QC 4 (daytime only)	85
QC 2	82
QC 1	79
QC 0.5 and below	76

(j) Within six months of the commencement of the development, a progressive reduction in the daytime (0700-2300) maximum NVL by the noisiest aircraft shall be implemented as follows:

(i) 85 dB(A) from the date of the commencement of development

(ii) 82 dB(A) from 1st January 2015

(iii) 80 dB(A) from 1st January 2020"

2.1 Elements of Luton's Overall Noise Management Pursuant to Condition 11

This condition supplements Luton's overall noise management that has been developed over many years, is identified in the Airport's Noise Action Plan, and is delineated in the responses given herein to planning condition 12, 13 and 14. Condition 11 introduces a new quota count (QC) system for night noise, new noise violation limits, early morning schedule period controls and the phasing out of QC 2 aircraft operation at night.

2.2 Luton's Noise Quota System

The Airport will operate a Quota Count System (QC system) based on the Noise Quota System utilised by other UK airports, including Heathrow Airport. The Noise Quota System at the other London Area Airports is promulgated in supplements to the Civil Aviation Authority's Aeronautical Information Publication (AIP). The most recent supplement detailing the Noise Quota System *London Heathrow, London Gatwick and London Stansted Airports Noise Restrictions Notice 2014* was published on the 20th March 2014, and includes in Part 2 information on the QC values for various aircraft types. The Part 2 schedule is updated from time to time as new information obtained during the aircraft's noise certification process becomes available. The result is aircraft types, such as the A319 commonly used at Luton, having various noise certification values for an operation (arrival or departure) dependent on the specific engine variant, the installed modifications if any, and for departures the maximum certificated take-off weight.

The Luton System is required to assign to each aircraft operation by a Luton aircraft a QC value. Those values combined with the number of annual movements will be used to determine the annual quota used, which will be compared with the annual budget limit of 3,500. The Luton System also involves restrictions on usage of aircraft based on their QC value, and provides information that is used when the noise levels at the Airport's fixed monitors are reviewed.

-x-x-x-x-x-

London Luton Airport Noise Quota System (LLANQS)

1 Citation and Commencement

1.1 This System may be cited as the LLANQS, and shall come into operation as soon as practicable on the commencement of development.

2 Interpretation

2.1 For the purposes of this System

'the Act' means the Civil Aviation Act 1982;

'airport authority' means the person for the time being having the management of Luton Airport as applicable;

'Annex 16' means Annex 16 (Volume 1 – Aircraft Noise) to the Convention on International Civil Aviation signed on behalf of the United Kingdom at Chicago on 7 December 1944[1];

'appropriate air traffic control unit', has the meaning ascribed to it by the Air Navigation Order 2009[2];

'maximum certificated landing weight' means the maximum landing weight authorised in the certificate of airworthiness;

'maximum certificated take-off-weight' means the maximum take-off weight authorised in the certificate of airworthiness;

'night period' means the period from 23.00 hours to 07.00 hours (Local time);

'night quota period' means the period from 23.30 hours to 06.00 hours (Local time);

an aircraft is deemed to have taken off or landed during the night period or night quota period, as the case may be, if the time recorded by the appropriate air traffic control unit 'airborne' or 'landed' respectively falls within that period;

[1] 6th Edition published in July 2011 by the International Civil Aviation Organization.

[2] S.I. 2009/3015, to which there is an amendment which is not relevant.

'noise classification' means the noise level band in EPNdB, for take-off or landing, as the case may be, for the aircraft in question, as determined from the individual aircraft's noise certification form coupled with The Schedule of the System.

'quota' means the maximum permitted sum of the quota counts of all aircraft taking off from or landing at the Airport during any twelve months in the night quota period;

'quota count' means the amount of the quota assigned to one take-off or to one landing by the aircraft in question, this number being related to its noise classification as specified in paragraph 3.3 of this system.

2.2 References in this system to a moment in time are to Local Time, that is in any period of summer time, to the time fixed by the Summer Time Act 1972[3], and outside that period to Universal Co-ordinated Time.

3 Description of Aircraft

3.1 Aircraft taking off or landing at Luton Airport are described in this system as follows:

(a) Exempt aircraft;

(b) Aircraft having a quota count of 0.25;

(c) Aircraft having a quota count of 0.5;

(d) Aircraft having a quota count of 1;

(e) Aircraft having a quota count of 2;

(f) Aircraft having a quota count of 4;

(g) Aircraft having a quota count of 8;

(h) Aircraft having a quota count of 16.

3.2 Exempt aircraft for the purpose of paragraph 3.1 above are those aircraft which on the basis of their noise data are classified at less than 84 EPNdB. The provisions of paragraphs 4, 6, 7, 8 and 9 of this system do not apply to the taking off or landing of such aircraft.

3.3 Subject to paragraph 3.2, the quota count of an aircraft on taking off or landing is to be calculated on the basis of the noise classification for that aircraft on take-off or landing as appropriate as follows:

[3] 1972 c.6, as amended by S.I. 2002/262.

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

4 Prohibitions on taking off or landing

4.1 Subject to paragraphs 10 and 11, at Luton Airport:

(a) any aircraft which has a quota count of 4, 8 or 16 may not take-off or land during the night period;

4.2 Subject to paragraph 10, at Luton Airport an aircraft may not take-off or be scheduled to land during the night period where:

(a) the operator of that aircraft has not provided (prior to its take-off or prior to its scheduled landing time as appropriate) sufficient information to enable the airport authority to verify its noise classification and thereby its quota count; or

(b) the operator claims that the aircraft is an exempt aircraft within paragraph 3.1(a), but the aircraft is not indicated as such an aircraft in Part 2 of the Schedule to the UK AIP Supplement on Noise Restrictions at other London Area Airports.

5 Maximum number of occasions on which aircraft may take-off or land

5.1 Subject to paragraphs 7, 8, 9 and 10, the overall maximum number of occasions on which aircraft of the descriptions specified in paragraphs 3.1(b) to (e) inclusive may take-off or land during the night quota period in any twelve month period is at Luton Airport: 9650.

5.2 Subject to paragraphs 6, 7, 8, 9 and 10, in the night quota period in the specified twelve month period the quota is at Luton Airport: 3500.

5.3 Subject to paragraphs 8, 9 and 10, each take-off or landing by an aircraft at Luton Airport during each night quota period within the twelve month period is to count according to its quota count towards the relevant quota.

6 Carry-over from the specified twelve month period

6.1 If the number of occasions on which aircraft of the descriptions specified in paragraphs 3.1(b) to (e) inclusive take-off or land at Luton Airport during the previous period is less than the maximum number of occasions specified in paragraph 5.1, the maximum number of occasions on which such aircraft may take-off or land at that aerodrome during the specified period may be supplemented by a number of occasions equal to the shortfall, up to a maximum of 10% of the maximum number of occasions specified in paragraph 5.1.

6.2 If any part of the quota specified in paragraph 5.2 remains unused at the end of the previous specified period, the quota for the specified period at Luton Airport may be supplemented by a sum of quota counts equal to the remainder, up to a maximum of 10% of the quota specified in paragraph 5.2.

7 Overrun of movements in the specified twelve month period

7.1 If, in respect of Luton Airport, the sum of the maximum number of occasions specified in paragraph 5.1 has been exceeded during the previous specified period:

(a) by up to 10% of the number of occasions specified in paragraph 5.1, the maximum number of occasions on which aircraft of the descriptions specified in paragraphs 3.1(b) to (e) inclusive may take-off or land during the specified period at Luton Airport is to be reduced by the same amount; or

(b) by more than 10% of the number of occasions specified in paragraph 5.1, the maximum number of occasions on which aircraft of the descriptions specified in paragraphs 3(b) to (e) inclusive may take-off or land during the specified period at Luton Airport is to be reduced by the amount of the excess up to 10% plus twice the amount of the excess over 10%.

8 Overrun of the quota limits in the previous specified period

8.1 If, in respect of Luton Airport, the sum of the quota specified in paragraph 5.2 has been exceeded during the previous specified period:

(a) by up to 10% of the quota specified in paragraph 5.2, the quota for the specified period at the Luton Airport is to be reduced by the same amount; or

(b) by more than 10% of the quota specified in paragraph 5.2, the quota for the specified period at Luton Airport is to be reduced by the amount of the excess up to 10% plus twice the amount of the excess over 10%.

9 Limits to overrun in the specified period

9.1 The sum of the maximum number of occasions specified in paragraph 5.1 for Luton Airport and any supplementary number of occasions permitted by paragraph 6.1 must not be exceeded by more than 10% of the number of occasions specified in paragraph 5.1.

9.2 The sum of the quota specified in paragraph 5.2 for Luton Airport must not be exceeded by more than 10% of the quota specified in paragraph 5.2.

10 Disregarded movements[4]

10.1 For the purposes of Section 78(4)(a) of the Act, the following circumstances are specified in relation to the taking off and landing of aircraft at Luton Airport, namely:

(a) delays to aircraft which are likely to lead to serious congestion at the aerodrome or serious hardship or suffering to passengers or animals;

(b) delays to aircraft resulting from widespread and prolonged disruption of air traffic.

11 Exclusion from the provisions of this System for emergency take-offs or landings

11.1 None of the provisions of this System apply to a take-off or landing which is made in an emergency consisting of an immediate danger to life or health, whether human or animal.

12 The Schedule

12.1 The noise classification for an aircraft on take-off or landing as appropriate means

12.1.1 for the purpose of landing:

(a) in the case of an aircraft certified to the standards of Chapters 2, 3, 4 or 5 of Annex 16 (or the equivalent standards), the certificated approach noise level of the aircraft at its maximum certificated landing weight minus 9 EPNdB: and

(b) in the case of a propeller aircraft with a maximum take-off weight not exceeding 5,700 kg and any other aircraft not certificated to the standards of Chapter 2, 3, 4 or 5 of Annex 16 (or the equivalent standards): the noise level indicated in relation to that aircraft in the noise data supplied for this purpose to the CAA.

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[4] Section 78(4) of the Act enables the person for the time being managing the aerodrome, or a person authorised by him for the purpose, to disregard those occasions which are specified under that section. Paragraph 9 of this Notice specifies those occasions.

12.1.2 for the purposes of take-off:

(a) where the aircraft is certificated to the standards of Chapter 3, 4 or 5 of Annex 16 (or the equivalent standards): half the sum of the flyover and the sideline noise levels in EPNdB as measured at the certification points specified in that Annex during the noise certification of the aircraft at its maximum certificated take-off weight;

(b) where the aircraft is certified to the standards of Chapter 2 of Annex 16 (or the equivalent standards): half the sum of the flyover and the sideline noise levels in EPNdB as measured at the certification points specified in that Annex during the noise certification of the aircraft at its maximum certificated take-off weight, plus 1.75 EPNdB and

(c) where the aircraft is a propeller aircraft with a maximum take-off weight not exceeding 5.700 kg or any other aircraft not certified to the standards of Chapter 2, 3 or 5 of Annex 16 (or the equivalent standards): the noise levels indicated in relation to that aircraft in the noise data supplied for this purpose to the CAA.

-x-x-x-x-x-

The Airport will operate the system delineated above and will apply sanctions in relation to operators of aircraft which land or take-off in breach of the London Luton Airport Noise Quota System (LLANQS). The operation of the LLANQS, including movement and quota totals, will be reported within the Airport's Quarterly Environment Reports, Annual Monitoring Reports, and other reports.

By operating the above system Luton Airport will comply with conditions 11(b), (c) and (f)(i).

2.3 Quarterly Environment Report (1st March/1st June/1st September/1st December)

The Quarterly Environment Reports (QERs) have included for many years, details of monthly movements, monthly passengers, runway usage, departure route usage, arrival details including CDA usage, measured departure noise levels, details of any noise violations, track violations, complaint statistics and analysis, and quarterly night noise contours. Twelve months after commencement of the Development, the QER will also include:-

- Actual Total Number of Aircraft Movements for the preceding 12 month period, and a breakdown of monthly totals;

  For the time 00.00 to 24.00 hrs (Overall)
  For the time 23.30 to 06.00 hrs (Night Quota Period)
  For the time 06.00 to 07.00 hrs (Early Morning Shoulder Period)

- Actual Total Noise Quota Usage for the preceding 12 month period, and a breakdown of monthly totals.
- Forecast Total Number of Aircraft Movements in the following 12 month period;

  For the time 07.00 to 23.00 hrs (Day period)
  For the time 23.00 to 07.00 hrs (Night period)
- Instances where daytime and night-time Noise Violation Limits have been breached, if any. (Already reported in Quarterly Environment Reports and Annual Monitoring Reports).
- Instances where Track Violation Limits have been breached, if any.

The future commercial schedules become available for the summer and winter scheduling periods at different times and therefore forecast movements can only be approximately estimated.

The provision of the movement information for the Early Morning Shoulder Period allows it to be confirmed that Luton Airport are complying with condition 11(g). The provision of the forecast total number of aircraft movements in the following 12 month period means Luton Airport will be complying with condition 11(h).

2.4 Annual Monitoring Report (31st May)

The Annual Monitoring Reports (AMRs) have included for many years, detailed information on aircraft movements, aircraft fleets, runway usage, CDA usage, track-keeping, noise monitoring, noise contours, complaints, employment, surface access and planning. The contents and format of the AMR has been resolved between the Airport and the Airport's independent consultative committee, LLACC. Twelve months after commencement of the Development, the AMR will also include:-

- For preceding year total aircraft movements;

  for 23.30 to 06.00 Night Quota Period
  for 06.00 to 07.00 Early Morning Shoulder Period.
- Actual Annual Movements of;

  Marginally compliant Chapter 3 aircraft (00.00-24.00)

  QC 2 aircraft (23.00-07.00)
- Forecast total aircraft movements;

  Summer Period Daytime Period : 07.00-23.00
  Summer Period Night-time Period 23.00-07.00

Annual Night quota Period	23.30-06.00
Early Morning Shoulder Period :	06.00-07.00

- Actual QC Annual Usage 23.30-06.00
- Forecast QC Annual Usage 23.30-06.00
- Actual Noise contours for the Day and Night Period for the preceding summer 92 day period, and details of contour areas and populations within contours.
- Breaches of noise limits or flying off-track.
- Payments from the Noise Insulation Fund.

The provision of the movement information for the Early Morning Shoulder Period allows it to be confirmed that Luton Airport are complying with conditions 11(c), 11(d), and 11(f) to 11(h).

2.5 Phase out of QC 2 operations [23:00 – 07:00]

The Airport will adopt the following procedures to achieve a phase out of aircraft operations in the night period, 23.00 – 07.00 by aircraft operations with a QC value of greater than 1, i.e. QC 2 as soon as practical.

- The Airport will monitor the number of QC 2 aircraft operating in the night-time period, 23.00 – 07.00.
- The Airport will then work with the operators of their aircraft to achieve a voluntary phase out of QC 2 aircraft.
- The Airport will incentivize the operators by introducing a lower noise violation limit during night-time i.e. 80 dB(A) as opposed to 82 dB(A). This will differentially penalize QC2 operations as opposed to QC 0.5 operations.
- The Airport will work with existing operators to seek to establish alternative aircraft for those aircraft currently in use with a QC2 rating.
- The Airport will investigate the use of differential landing charges for QC2 as opposed to QC1 and below aircraft for night-time operations, in order to incentivise the use of quieter aircraft during the night.

By adopting the above procedures Luton Airport will comply with condition 11(d).

2.6 Luton Airport Noise Control (including QC System)/Noise Control Monitoring Scheme/Noise Management Plan/Ground Noise Control Scheme Review [2016/17 / 2020/21 etc]

A review will take place not later than the 1st and 4th year after introduction of this comprehensive assembly of Schemes and then every subsequent five years.

The reviews will address the efficiency, effectiveness and achievements of the Luton Airport Noise Control Schemes. The review will seek to highlight possible improvements that could be undertaken to the schemes to reduce noise at night and during the day due to Airport operations. At this initial stage it is envisaged that the review will include:

Updates:

Noise Contour Areas

QC2 Night-time Usage (w.r.t. phase out of QC2 night flights / conditions 11 (d))

QC Budget Usage (w.r.t. reduction of noise quota to 2,800 by 2028 / condition 11 (f)(ii))

Annual movements, night quota period, early morning shoulder period

Annual Movements by Marginally compliant Chapter 3 aircraft

Breaches of noise limits or flying off-track

Payments for Noise Insulation Fund

(The above to be compared against limits)

Performance Analysis of Efficiency of:

Noise Monitoring System

Noise Contouring System

Noise Control Scheme

Noise Quota system

Ground Noise control Scheme

Track Monitoring System

Noise and Track Violation Sanctions

These reviews will mean Luton Airport will comply with condition 11(e).

2.7 Noise Violation Limits (Condition 11(i) & 11(j))

The proposed procedures in relation to noise monitoring / noise violation limits are delineated in the response to Condition 13.

3.0 CONDITION 12

Condition 12 set out in the planning permission notice is given below.

"12

The area enclosed by the 57dB(A) Leq16hr (0700-2300), contour shall not exceed 19.4 sq km for daytime noise, and the area enclosed by the 48dB(A) Leq8hr (2300-0700) contour shall not exceed 37.2 sq km for the night-time noise, when calculated by the Federal Aviation Authority Integrated Noise Model version 7.0.d (or as may be updated or amended).

Within five years of the commencement of development a strategy shall be submitted to the Local Planning Authority for their approval which defines the methods to be used by LLAOL or any successor or airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2km2 for the area exposed to 57dB Leq16hr (0700-2300) and above and for night-time noise to 31.6 km2 for the area exposed to 48 dB(A) Leq8hr (2300-0700) and above.

From the 1st January 2014 forecast aircraft movements and consequential noise contours (Day, Night and Quota Periods) for the forthcoming calendar year shall be reported on the 1st December each year to the Local Planning Authority, which shall utilise the standard 92 day summer contour."

3.1 Elements of Luton's Overall Noise Management Pursuant to Condition 12

The Airport has for many years produced on an annual basis, the conventional summer 92 day noise contours for daytime and night-time. Night-time noise contours have also been produced on a quarterly basis and the Airport will continue to produce this information but supplement it as detailed in Section 3.2.

3.2 Noise Contouring

In light of planning condition 12 Luton Airport will provide on the 1st December of each calendar year, the information listed below.

- $L_{Aeq,16h}$ noise exposure contours for an average summers day for the 16 hour period (07.00 to 23.00 local time, equivalent to 06.00 to 22.00 GMT in the summer period)

commencing at 57 dB(A) and showing increasing values in 3 dB(A) steps for the following cases:

(a) The current year based on actual ATM data;

(b) The following year based on predicted ATM data.

- $L_{Aeq,8h}$ noise exposure contours for an average summers night for the 8 hour period (23.00 to 07.00 local time, equivalent to 22.00 to 06.00 GMT in the summer period) commencing at 48 dB(A) and showing increasing values in 3 dB(A) steps for the following cases:

  (a) The current year based on actual ATM data;

  (b) The following year based on predicted ATM data.

- For each of the cases described above, a comparison of the area enclosed within the 57 dB $L_{Aeq,16h}$ daytime contours with the value of 19.4 sq km respectively and a comparison of the area within the 48 dB $L_{Aeq,8h}$ night time contours with the value of 37.2 sq km.
- An evaluation of the results, including a description of any trends and the identification of any relevant features which have affected the results.
- The above contours will be calculated using the Federal Aviation Authority Integrated Noise Model version 7.0d (or may be updated or amended);
- In determining the model split for the average day or night, the actual percentage of westerly and easterly operations for the current summer period will be used, and the rolling five year average will be assumed for the forecast following year.

The above information will be contained in a report to be submitted to the Local Planning Authority each year, detailing the forecast aircraft movements, consequential noise contours, and noise quota usage for the forthcoming calendar year. The movements and contours relate to the forecast activity in the 92 day summer period, 15th June-16th September for the forthcoming year. The quota usage relates to the annual usage in the forthcoming calendar year.

With respect to “Trends” and “relevant features” identified in the annual reports, LLAOL will study any adverse trends or features and seek to establish causes, and what actions need to be taken by operators or LLAOL to avoid repetition. The actions required by operators could address detailed operational decisions which would be resolved at the regular “Flight Ops” Committee meetings.

The issue of these reports to the Local Authority will mean Luton Airport comply with the final paragraph of condition 12, and that it can be confirmed that the first paragraph of condition 12 has also been complied with.

3.3 Noise Contour Area Reduction Methodology (Early 2019)

Within five years of commencement of development a report will be submitted to the Local Planning Authority which shall define methods to be used by the airport operator to reduce the area of the noise contours by 2028 for daytime noise to 15.2 km^2 for the area exposed to the 57 dB $L_{Aeq,16h}$, and above and for night-time noise to 31.6 km^2 for the area exposed to the 48 dB $L_{Aeq,8h}$ (2300-0700) and above.

The contour area reduction measures envisaged currently are the improved operational arrangements arising from the London Airspace Management Programme (LAMP), improved operation arrangements arising from introduction of RNAV departure and arrival procedures for all routes, and the introduction of new quieter aircraft, such as the Airbus A320 NEO, Boeing 737 MAX, Boeing 787 etc. The effectiveness of these measures to achieve the target reduction by 2028 will be addressed in the reviews delineated in Section 2.6 above.

The issue of this report will mean Luton Airport comply with the second paragraph of condition 12.

3.4 Annual Quota Count

The Airport will operate a Quota Count System as delineated in the response to condition 11. This will not produce final information for the current year by 1st December. To obtain insight into the annual QC used in the current year, the computation must await completion of the annual period. It is proposed that the QC information for a current year is provided separately to the current year summer contours, specifically within 2 months of the end of the current year. At that time the forecast QC usage for the next year will also be provided. Therefore information to be provided will be by 1st March;

QC Annual Budget Used for previous year,

QC Annual Budget Forecast to be used for current year.

This information will be compared with the total annual noise quota of 3,500. The annual noise quota will be reduced at each review until it reaches 2,800 by 2028.

The QC usage reduction is envisaged to relate to the phase out of QC2 operations at night, and the replacement of existing aircraft by re-engined types over the next few years. The rate of reduction is not definable at this stage whilst, for instance, the rate of introduction of re-

engined aircraft at Luton is not set for all resident airlines. Easyjet have advised they will obtain their Airbus A320neo fleet in the period 2017 to 2022.

By providing this information as required by condition 12, and by reducing the annual noise quota at each review Luton Airport will comply with condition 11(f)(ii).

3.5 Information Verification

The Airport has provided detailed information to LLACC over many years, and that information has not been criticised. The Airport propose to continue their open detailed technical reporting, and will provide full access to the Local Planning Authority to those retained by the Airport and the Airport's Environmental Team who will provide the information.

4.0 CONDITION 13

Condition 13 set out in the planning permission notice is given below.

"13

Within 6 months of the development hereby permitted commencing a Noise Control Monitoring Scheme for the airport shall be submitted to and approved in writing by the Local Planning Authority. The submitted scheme or scheme review as applicable shall include, but shall not be confined to, the following:

> **(i) Details of the fixed noise monitoring terminals and track keeping system (vertical and horizontal).**
>
> **(ii) Details of the complaint handling system.**
>
> **(iii) Sanctions to be imposed on infringement by aircraft in respect of noise limits and track keeping.**
>
> **(iv) Arrangements for the verification of the submitted information.**

Within six months of either commencement of development or the approval of the scheme by the Local Planning Authority, whichever is the later scheme shall be implemented as approved. Such a review shall take place, not later than the 1st and 4th year after introduction and every subsequent 5 years."

4.1 Elements of Luton's Overall Noise Management Pursuant to Condition 13

The Airport operates a sophisticated Aircraft Noise and Track Monitoring System. This System includes a network of three permanent noise monitors that measure the noise of individual aircraft movements, and the system is also directly connected to the air traffic control radar

that collects aircraft flight tracks. This allows all to observe the tracks flown by departing aircraft from Luton Airport via a website 'Travis'.

4.2 Elements of Luton's Future Overall Noise Management Pursuant to Condition 13

Fixed Noise Monitoring

The Airport will continue to maintain, calibrate, and operate the current Aircraft Noise and Track Monitoring System or one updated.

LLAOL will continue to carry out noise monitoring at the following locations:

(i) Pepsal End Farm, Pepsal End, Bedfordshire;

(ii) Grove Farm, Slip End, Bedfordshire;

(iii) Frogmore Bottom, Hertfordshire.

Or if these locations become unavailable or not appropriate alternative locations agreed with the local planning authority (Luton Borough Council).

Noise levels of departing aircraft passing in the vicinity of the noise monitors will be recorded and the results analysed, to establish the departure noise level in relation to the aircraft registration. Using the registration the noise certification values for the aircraft will be obtained via the operator. This information will allow the QC value of the aircraft to be determined. ACL will use this information to implement any restrictions on aircraft slots given at the airport.

The Airport will continue to operate a Noise Violation Limit (NVL) system. The Airport has reduced voluntarily the noise violation limits in recent years, and will do so again on 1st April 2015 resulting in a day NVL of 82 dB(A) and a night NVL of 80 dB(A). These NVL's will be replaced by those set by LBC within 6 months of the commencement of the development.

This will result in, within six months of the commencement of the development, during daytime the maximum noise made by the noisiest aircraft being limited to:

85 dB(A) from the date of commencement of development and reducing

by 1st January 2015 to 82 dB(A) and then

by 1st January 2020 to 80 dB(A).

If these departure noise levels are exceeded the aircraft operator will be advised, and requested to explain the exceedance. Unless a valid reason for the exceedance occurrence is given, the airport operator will be subject to a noise fine as delineated in Section 4.3.

The Airport will as required by LBC within six months of the commencement of the development also reduce the departure noise levels at the three fixed noise monitors for aircraft depending on their noise categorisation.

- With respect to aircraft categorised as QC4 under the London Luton Airport Noise Quota System (LLANQS) delineated in Section 2.2 , the noise violation limit will be 85 dB(A) during the daytime. If this departure noise level is exceeded the aircraft operator will be advised, and requested to explain the exceedance. Unless a valid reason for the exceedance occurrence is given, the aircraft operator will be subject to a noise fine as delineated in Section 4.3.
- With respect to aircraft designated as QC2 under the LLANQS, the noise violation limit is 82 dB(A) during the daytime and the night-time. If this departure noise level is exceeded the aircraft operator will be advised, and requested to explain the exceedances. Unless a valid reason for the exceedance occurrence is given, the aircraft operator will be subject to a noise fine as delineated in Section 4.3.
- With respect to aircraft designated as QC1 under the LLANQS, the noise violation limit is 79 dB(A) during the daytime and night-time. If this departure noise level is exceeded the aircraft operator will be advised, and requested to explain the exceedance. Unless a valid reason for the exceedance occurrence is given, the aircraft operator will be subject to a noise fine as delineated in Section 4.3.
- With respect to aircraft designated as QC 0.5 and below under the LLANQS, the noise violation limit is 76 dB(A) during the daytime and night-time. If this departure noise level is exceeded the aircraft operator will be advised, and requested to explain the exceedance. Unless a valid reason for the exceedance occurrence is given, the aircraft operator will be subject to a noise fine as delineated below.

The use of the noise violation limits detailed above will mean Luton Airport comply with conditions 11(i) and 11 (j).

Track Keeping System

The Airport will continue to maintain and operate the current Aircraft Noise and Track Monitoring System or one updated. The equipment will continue to identify aircraft which will be deemed to have complied with the current Noise Preferential Routes. In particular it will identify aircraft that fly wholly within the Lateral Swathe (LS) of each Noise Preferential Route, NPR. The Airport has currently in effect two lateral swathes for aircraft departing in the most common westerly direction, the swathes deal with traffic on four departure routes to Compton, Clacton, Dover and Detling. When aircraft depart to the east, the Airport has

currently in effect three lateral swathes, one to Olney, one to Compton, and one which accommodates traffic on the Clacton, Dover and Detling routes.

The Lateral Swathes (LS) are defined from the centre-line of the relevant NPR by the closest to the centre-line of a pair of lines either side, each diverging at an angle of 10 degrees from a point on the centre-line of the runway centre-line 2000m from the start of roll; and of a pair of parallel lines representing a distance of 1.5km either side of the route centre-line. The NPRs and consequently the LS include curved sections representing turns.

Once aircraft have attain an altitude of 3000ft during daytime, 4000ft during night-time, they will considered no longer on the Noise Preferential Route. At that stage the aircraft may be directed by air traffic controllers onto a different heading, a process described often as “radar vectoring”. Aircraft may also be turned off the NPR earlier to fly outside the Lateral Swathe by air traffic control due to special requirements, such as storm clouds.

The Airport will with effect from the Commencement of Development implement and maintain a Track Violation Penalty System. That System will monitor all departures using sophisticated monitoring equipment. The observed radar tracks will be assessed against the Lateral Swathes of the Noise Preferential routes, and where the aircraft is clearly flying outside the LS, i.e. 250m outside, the aircraft will be identified as causing a “possible” track violation.

On identifying such a “possible” track violation, the Airport’s specialist environmental team will investigate with the airline and air traffic control whether there were any valid justifications for the possible track violation, such as a specific air traffic control instruction or aircraft technical issue. If a valid justification is identified the incident will be noted, and reported in the Quarterly Environment Report. If no valid justification is identified then the aircraft operator will be warned and subject to a nominal fine. Such fines will be paid into the Community Fund. The incident will also be noted, and reported in the Quarterly Environment Report.

If the same operator operates subsequent departures at Luton Airport with the same generic aircraft type and is observed to cause similar “possible” track violations, which after the investigation are found to be track violations then the aircraft operator will be subject to the appropriate fine. The fines will take into account the occurrence rate, as delineated in Section 4.3.

Track Violation Penalty System Review

On each anniversary of the Commencement of Development the Airport will submit to the Council for its written approval a report on the operation of the Track Violation Penalty

System which will review the effectiveness of the Track Violation Penalty System and which will include as a minimum the following for the preceding year:

(a) the number of fines levied by the Airport and the amount of revenue received by the Airport in payment of those fines, and paid to the Community Fund;

(b) the categories of the violations by the airlines which gave rise to the fines;

(c) the amount levied against each airline and each aircraft type which operates at the Airport,

and

(d) whether modifications to level of fine under the Track Violation Penalty System is necessary (and so the nature of those modifications) to improve its effectiveness in minimising the noise disturbance of residents.

Complaint Handling System

The Airport has developed an effective complaint handling system and this has been reviewed over recent years by LLACC; LLACC includes representation from the Local Planning Authority. It is proposed that this System be maintained.

The provision of these details of the complaint handling system, coupled with the details given above of the fixed noise monitoring terminals and track keeping system mean Luton Airport complies with conditions 13(i) and 13(ii). The required information on arrangements for the verification of the submitted information, condition 13(iv), are given in Section 3.5.

4.3 Sanctions w.r.t. Noise Violation Limits/Track Violations

NVL Sanction/Fine System

The Airport will take all reasonable steps to reduce the departure noise levels, and have already in place some measures in the approved Noise Action Plan. As the Airport does not operate the aircraft, the measures require the Airport to work with the airline operators to adopt best practice to minimise noise of departing aircraft.

With regard to the noise violation limit exceedances the Airport will work with the airline operators to minimise occurrences. Unfortunately, the proposed very stringent departure noise violation levels in condition 11 (i) are liable to be exceeded by aircraft of the most modern types, meeting all international and national noise standards and operated in accordance with ICAO advice. It is therefore proposed that the Airport will seek to incentivize best practice, and apply punitive methods only where it is clear that lower noise levels could be achieved, and have been for the same aircraft type at Luton. Therefore in operation of the

System, the average departure noise performance for a specific aircraft type in the previous monitoring period/periods will be a material consideration.

All violations of the NVL will be reported on a three month basis in the Quarterly Environment Reports, and the Annual Monitoring Reports. The reporting will state the noise level excess over the NVL, the aircraft type, the past average noise level for the type concerned, the aircraft operator, the time of occurrence, and the sanction/fine action taken by the Airport.

The NVL system shall be regularly reviewed. Such a review will take place, not later than the 1st and 4th year after introduction of the system and subsequently every 5 years.

The NVL sanctions to be applied are detailed in Tables 1 and 2. Table 1 includes daytime sanctions relating to condition 11(j) and also night-time sanctions that the airport is planning to introduce voluntarily. Table 2 relates to condition 11(i) and so noise at any time.

Excess over Noise Violation Limit ($L_{max,s}$)	Frequency	Fine Per Event
For Day Flights until 31st December 2019 - 0700 - 2259 Local Time		
No greater than 3 dB(A)	One isolated event	£100
	Regular[(1)] event	£200
Greater than 3 dB(A)	Any Event	£500
For Night Flights until 31st December 2019 2300 - 0659 Local Time		
No greater than 3 dB(A)	One isolated event	£100
	Regular[(1)] event	£200
Greater than 3 dB(A)	Any Event	£500

[(1)] Regular shall mean greater than six events per 3 month period.

Table 1: Noise Violation Sanctions by Time Period

Quota Count of Departure Movement	Noise Violation Limit (NVL) ($L_{max,s}$)
QC4 (Daytime only)	85
QC2	82
QC1	79
QC0.5 and below	76

Excess over NVL ($L_{max,s}$)	Frequency	Fine per Event
No greater than 3 dB(A)	Isolated Event	£100
	Regular[(1)] Event	£200
Greater than 3 dB(A)	Any	£200

[(1)] Regular shall mean greater than six events per 3 month period.

Table 2: Noise Violation Sanctions by Quota Count of Departure Movement

To avoid any confusion, each of the fines in Table 2 can apply to a departure movement with any of the quota counts. For example a movement by an aircraft rated as QC1 on departure which produces a noise level of 81 dB(A) $L_{max,s}$ on an isolated occasion will be fined £100 unless there is a valid reason for the exceedence.

It should be noted that as Table 2 applies to departures at any time there is the possibility that an aircraft movement will generate a fine from both Table 1 and Table 2. In such an instance both fines would be due.

Track Violations Sanction/Fine System

The TVL sanctions to be applied are detailed in Table 3.

Occurrence Rate	Fine per Event	
	Daytime 0700-2259 Local Time	Night-time 2300-0659 Local Time
Any Event	£750	£1000

Table 3: Track Keeping Violation Sanctions by Time Period

The Airport will report track violations in both the Quarterly Environmental Reports, and the Annual Monitoring Report. Such reports will identify:-

- the number of track-keeping violations;
- the operator causing such violations;
- the aircraft types causing such violations;
- the fines levied and paid into the Community Fund.

(N.B. The level of fine will be Index-linked and subject to review on an annual basis).

On each anniversary of the Commencement of Development the Airport will submit to the Council for its written approval a report on the operation of the Track Violation Penalty System which will review the effectiveness of the Track Violation Penalty System and which will include as a minimum the following for the preceding year:

(a) the number of fines levied by the Airport and the amount of revenue received by the Airport in payment of those fines, and paid to the Community Fund;

(b) the categories of the violations by the airlines which gave rise to the fines;

(c) the amount levied against each airline and each aircraft type which operates at the Airport, and

(d) whether modifications to level of fine under the Track Violation Penalty System is necessary (and so the nature of those modifications) to improve its effectiveness in minimising the noise disturbance of residents.

The Airport will develop this System, and will have to take into account the changes occurring in UK, resulting from the introduction of new airspace arrangements, and new navigational methods. The Airport is working with air traffic control, the DfT and the airline operators on introducing two RNAV 1 departures for westerly departures. This will reduce the lateral swathe around the mean track, and so it will be necessary to define the geometry of the lateral swathe when such RNAV routes are put in place at Luton.

It is hoped that the RNAV 1 procedures for departures toward Match (previously Detling), will be approved soon and therefore implemented in 2015. Subsequent to that, it is intended to put in place RNAV or RNP procedures for other Luton departure routes in the next few years. The NATS development of London Area Airspace is on-going, for example through LAMP, and LLAOL await details.

By the submitting these details of the sanctions to be imposed on infringement by aircraft in respect of noise limits and track keeping which will form part of the Noise Control Monitoring Scheme Luton Airport complies with condition 13(iii).

5.0 CONDITION 14

Condition 14 set out in the planning permission notice is given below.

"14

Before any part of the development hereby permitted is commenced a scheme concerning ground noise associated with aircraft at the airport shall be submitted to and approved in

writing by the Local Planning Authority. The submitted scheme shall include, but not be confined to, the following:

i) Measures to limit the ground running of aircraft propulsion engines within Luton Airport between 2300 and 0700

ii) Preferential use of stands and taxiways for arriving/departing aircraft between 2300 and 0700

iii) Steps to limit the use of auxiliary power units (including the provision of fixed electrical ground power to stands and or suitably quietened ground power units)

iv) No ground running of aeroplane engines for testing or maintenance purposes between 2300 and 0700 and designation of areas for such testing between 0700 and 2300.

Within six months of either commencement of development or the approval of the scheme, (or whichever is the later) by the Local Planning Authority, the scheme shall be implemented as approved. A review shall take place, not later than the 1st and 4th year after introduction and every subsequent 5 years."

5.1 Elements of Luton's Overall Noise Management Pursuant to Condition 14

The Airport in exercise of the powers conferred on it by sections 63 and 64 of the Airport Act 1986, produced and promulgated byelaws, London Luton Airport Byelaws 2005, which were confirmed by the Secretary of State for Transport on 20th November 2005, Appendix 2.

The Byelaws address in Part 5 Control of Aircraft Noise, and advise in Byelaws 5.2 on the controls, including noise which will apply to Ground Running and Testing of Aircraft Engines. The details are given in the schedule attached to Byelaws.

Supplementing Byelaws 5.2 are operational Controls – Engine Ground Running given in the Airport's Night Noise Policy (issue 8) intended to apply from 1st April 2014 to 31st March 2015. Also supplementing these documents are the Airport Manager's operations Safety Instructions, copied in Appendix 3.

The resultant ground noise control scheme has achieved minimal community reaction to ground noise sources over the last few years. It includes for the four main ground noise issues:-

(a) Ground running of aircraft propulsion engines

The current restrictions are actioned by:-

OSI 19-14 Aircraft Power Back Procedures

OSI 20-14 Cross Bleed Engine Starts

OSI 22-14 Jet Blast

OSI 30-14 Aircraft requiring cross-bleed start on stands 40 + 41R

OSI 46-14 Aircraft Engine Ground Runs + Booking and using the Engine Run-up Bay (ERUB)

They seek to use the minimum engine power whilst on the aprons. Engine ground runs on the aprons are limited to check-starts that do not exceed ground idle power. Engine runs on stand are limited to one engine at a time for a maximum duration of 10 minutes.

(b) Preferential use of stands and taxi ways

The Airport seeks to operate aircraft from the contact stands that abut to the terminal building rather than those non-contact stands on the northern edge of the Airport. The preference cannot apply to the Cargo Apron, as clearly aircraft carrying out cargo operations will need to use that Apron. Appendix 4 copies the current stand arrangement, and shows the stands adjoining the terminal, for example Stand Nos. 1 to 9L, 60 to 61, 20 to 22 and 40 to 48.

The Airport seeks to operate taxiway use in order to minimize times taken for departing aircraft, and so reduce ground noise.

(c) Use of Auxiliary Power Units

OSI 048-14 sets out the rules and procedures for the use of Auxiliary Power Units (APUs) at the Airport. They require that APUs are used for the absolute minimum time, and whenever possible to ensure APUs are used for no more than 5 minutes after arrival on stand, and no more than 30 minutes before planned departure. APUs are not to be used as a substitute for GPUs. The GPUs are subject to OSI 047-14, which requires new GPUs to make low working noise levels a prime requirement in the selection process.

(d) Ground run tests at night and locations for ground run test during the day period

Measures and controls are detailed in:

- Byelaws: Part 5: Para 5.2 and associated schedule;
- Night Noise Policy: Para 4.14-4.17;
- OSI 046-14, Aircraft Engine Ground Runs and Booking and using the Engine Run Up BAY (ERUB).

These indicate that engine ground runs will not normally be permitted during night hours, 23.00-06.00 weekdays and 23.00-07.00 over the weekends, and on Public Holidays. The details of the management and control of engine ground runs and movements to and from ERUB have to be given in advance to the Airport Operations Control Centre, and approval sought.

The ERUB is located adjoining Taxiway A and is located distant from the main residential areas of Luton. For all engine runs by jet aircraft, other than runs at ground idle power setting, the operator has to use the ERUB facility. They are required to keep noise disturbance to a minimum.

5.2 Elements of Luton's Future Overall Noise Management Pursuant to Condition 14

The Airport propose to continue to operate its ground noise control measures as noted in Section 5.1, and seek approval that this complies with condition 14 from the Local Planning Authority.

With planning condition 14 items i) and iv) the measures and controls are detailed in:

- Byelaws: Part 5: para 5.2 and associated Schedule;
- Night Noise Policy: paras 4.14-4.17;
- Airport Managers OSI 046-14, Aircraft Engine Ground Runs + Booking and using the ERUB.

With regard to the planning condition 14 item ii) the Airport will seek to operate aircraft from the contact stands that abut to the terminal building rather than those non-contact stands on the northern edge of the Airport. This preference cannot apply to the Cargo Apron, as clearly aircraft carrying out cargo operations will need to use that Apron.

The Airport will also seek to operate taxiway use in order to minimise times taken for departing aircraft, and so reduce ground noise. The Airport will also work with airlines to minimise noise from aircraft whilst taxiing. The main airline operator at the Airport already seeks to taxi using one engine only.

With regard to the planning condition 14 item iii) the measures and controls are detailed in:

- Airport Manager's OSI 047-14 Ground Power Unit (GPU) Use;
- Airport Manager's OSI 048-14 Auxiliary Power Unit (APU) Use.

Within six months of either commencement of development or the approval of the scheme, (or whichever is the later) by the Local Planning Authority, the scheme will be implemented as approved. A review will take place, not later than the 1st and 4th year after introduction and every subsequent 5 years.

Jeff G Charles **Peter Henson**

for Bickerdike Allen Partners **Partner**

APPENDIX 1

Glossary of Acoustic Terminology

The Decibel, dB

The unit used to describe the magnitude of sound is the decibel (dB) and the quantity measured is the sound pressure level. The decibel scale is logarithmic and it ascribes equal values to proportional changes in sound pressure, which is a characteristic of the ear. Use of a logarithmic scale has the added advantage that it compresses the very wide range of sound pressures to which the ear may typically be exposed to a more manageable range of numbers. The threshold of hearing occurs at approximately 0 dB (which corresponds to a reference sound pressure of 2×10^{-5} Pascals) and the threshold of pain is around 120 dB.

The sound energy radiated by a source can also be expressed in decibels. The sound power is a measure of the total sound energy radiated by a source per second, in watts. The sound power level, L_w is expressed in decibels, referenced to 10^{-12} watts.

Frequency, Hz

Frequency is analogous to musical pitch. It depends upon the rate of vibration of the air molecules that transmit the sound and is measure as the number of cycles per second or Hertz (Hz). The human ear is sensitive to sound in the range 20 Hz to 20,000 Hz (20 kHz). For acoustic engineering purposes, the frequency range is normally divided up into discrete bands. The most commonly used bands are octave bands, in which the upper limiting frequency for any band is twice the lower limiting frequency, and one-third octave bands, in which each octave band is divided into three. The bands are described by their centre frequency value and the ranges which are typically used for building acoustics purposes are 63 Hz to 4 kHz (octave bands) and 100 Hz to 3150 Hz (one-third octave bands).

A-weighting

The sensitivity of the ear is frequency dependent. Sound level meters are fitted with a weighting network which approximates to this response and allows sound levels to be expressed as an overall single figure value, in dB(A).

Environmental Noise Descriptors

Where noise levels vary with time, it is necessary to express the results of a measurement over a period of time in statistical terms. Some commonly used descriptors follow.

Statistical Term	Description
$L_{Aeq, T}$	The most widely applicable unit is the equivalent continuous A-weighted sound pressure level (LAeq, T). It is an energy average and is defined as the level of a notional sound which (over a defined period of time, T) would deliver the same A-weighted sound energy as the actual fluctuating sound.
L_{A90}	The level exceeded for 90% of the time is normally used to describe background noise.
$L_{Amax,T}$	The maximum A-weighted sound pressure level, normally associated with a time weighting, F (fast), or S (slow)
SEL	The Sound Exposure Level (SEL) is the sound level in dB(A) of a one second burst of steady noise that contains the same total A-weighted sound energy as the whole aircraft noise event.
EPNL	Effective Perceived Noise Level. It's measurement involves analyses of frequency spectra of noise events as well as the duration of sound.
EPNdB	The measurement unit for EPNL, that is used for the noise certification of aircraft, and the subsequent QC determination.

Aeronautical Terms used in discussion of noise

Statistical Term	Description
PNR	Preferred Noise Routes are pre-defined routes for aircraft leaving an airport. Departing aircraft are asked to stay within defined corridors and wherever possible these are kept away from the most densely populated areas.
Ground Track	The vertical projection of an aircraft flight path onto level ground.
SOR	Start of Roll: The position of a runway where aircraft commence their take-off runs.

ICAO Noise Certification	Noise Certification Measurement Points are for Approach (under a 3 degree descent path 2000m from the runway threshold, Lateral (or Sideline) 450m to the side of the initial climb after lift-off, and Flyover under the departure climb path, 6500m from the start of roll (SOR).
Continuous Descent Approaches (CDA)	For an arriving aircraft to achieve a CDA, the aircraft must achieve a continuous descent with no more than one section of local flight greater than 2.5 Nm in length following descent from an altitude of 5,000ft.
Chapter III	This refers to noise standards for aircraft, specification that given in Volume 1, Part II, Chapter 3 of Annex 16, delineated in terms of levels not to be exceeded at the noise certification measurement points.
APU	An APU is an auxiliary power unit which is installed on an aircraft to provide power when the aircrafts main engines are not in use, for the purpose of enabling aircraft systems to prepare the aircraft for use whilst the aircraft is on the ground.
GPU	A small portable ground power unit, GPU, provides power to allow the aircraft to use its systems when the aircrafts APU is not used. Such units can be effectively silenced.
RNAV1	A more precise navigation system to ensure aircraft fly on a more tightly defined track.
Annex 16	This Annex (Environmental Protection) to the Convention on International Civil Aviation presents Volume 1 Aircraft Noise and Volume 2 Aircraft Engine Emissions.

Committees	**Description**
"Flight Ops" Committee	A committee set up at Luton Airport to allow detailed dialogue between airlines, airline pilots, NATS and LLAOL Operations Staff.
LLACC	The London Luton Airport Consultative Committee is set up in-line with Department of Transport guidance for Aerodromes to which Section 35 of the Civil Aviation Act 1982 applies, and has representatives from users, Local Authorities and environmental groups.
NTSC	A sub-committee of LLACC, set up to discuss in detail noise and track-keeping issues at Luton Airport. The sub-committee meet four times each year.

APPENDIX 2

London Luton Airport Byelaws: November 2005

LONDON LUTON
AIRPORT

London Luton Airport Byelaws

November 2005

LONDON LUTON AIRPORT OPERATIONS LIMITED
BYELAWS

London Luton Airport Operations Limited, in exercise of the powers conferred on it by sections 63 and 64 of the Airports Act 1986 and of all other powers enabling it in that behalf, hereby makes the following byelaws.

PART 1 GENERAL

1.1 **Definitions**

(a) In these byelaws:

(i) "accident" means an unintended occurrence which has an adverse physical result;

(ii) "aircraft" means a heavier than air power-driven flying machine and includes aeroplane (land plane), aeroplane (sea plane), aeroplane (amphibian), aeroplane (self-launching motor glider), powered lift (tilt rotor) and rotorcraft (helicopter and gyroplane);

(iii) "aircraft operator" and "operator" mean in relation to any aircraft the person who at the relevant time has the management of that aircraft;

(iv) "the airport" means that area for the time being constituting London Luton Airport including all areas accessible to aircraft including runways, taxiways, aprons and all grass areas as detailed within the area edged red on the map attached to these byelaws and marked "Map referred to in the London Luton Airport Byelaws 2005"

(v) "airport official" has the same meaning as in section 63(4) of the Airports Act 1986;

(vi) "airside area" means that part of the airport lying within the perimeter fence to which access is controlled by security check points and any other authorised entry point and including all stands, aprons, taxiways and the runway;

(vii) "animal" means any animal wild or domesticated that is brought onto the airport;

(viii) "authorised person" means any person authorised by law or by an airport official to enter the airport or any part thereof in the course of his duties provided he is entitled to and displays a valid and full access pass issued by LLAOL;

(ix) "banksman" means any airport official whilst engaged in assisting the driver of any vehicle with visual guidance;

(x) "CAP 74" means the document issued by the Civil Aviation Authority known as CAP 74 relating to fire prevention and safety measures in the fuelling of aircraft and "CAP 642" means the document also issued by that Authority relating to airside safety management procedures known as CAP 642. Each such reference shall be construed as a reference to that document as amended, reissued, consolidated or replaced and in force from time to time;

(xi) "commander" in relation to an aircraft means the member of the flight crew designated as commander of that aircraft by the operator thereof, or, failing such a person, the person who is for the time being the pilot in command of the aircraft;

(xii) "constable" means any person attested as such pursuant to section 29 of the Police Act 1996;

(xiii) "cultivated area" means any grassed area at the airport and any place at the airport (whether or not situated within a grassed area) in use or laid out for use as a place for the cultivation and display of flowers and/or any shrub;

(xiv) "Customs and Excise Acts" has the same meaning as in the Customs and Excise Management Act 1979;

(xv) "designated" means that LLAOL has indicated by markings on the ground, the display of a notice or the issue of a written notification that LLAOL gives permission for the use of that area or facility for a particular purpose;

(xvi) "designated agent" means any party occupying and managing premises at the airport and being designated as a party authorised to administer lost property;

(xvii) "emergency services" means the police, security, fire and ambulance services, including any such service provided by LLAOL;

(xviii) "emergency vehicle" means any vehicle lawfully in use for operational purposes by any of the emergency services;

(xix) "the facilities associated with the airport" includes all facilities provided at or in the vicinity of the airport (including radio and navigational aids) for the purpose of controlling, guiding or assisting the operation of aircraft either at the airport or in the vicinity of the airport;

(xx) "incident area" means any area within the airport that has been cordoned off from the rest of the airport by or at the direction of an airport official or a member of the emergency services;

(xxi) "LLAOL" means London Luton Airport Operations Limited or its successors in title and, where the context of these byelaws so requires, it shall include reference to an airport official;

(xxii) "lost property office" means any place designated by LLAOL for the safekeeping of lost property;

(xxiii) "maximum total weight authorised" has the same meaning as in the Air Navigation Order 2000 (SI 2000/1562);

(xxiv) "night-time" means the period of time commencing at 2300 hours local time each day and ending at 0600 hours local time on the following day unless the following day is a Sunday in which case the period shall end at 0700 hours;

(xxv) "notice" means any object or device (whether fixed or portable) for conveying warnings, information, requirements, restrictions or prohibitions of any description;

(xxvi) "permission" means the prior consent of LLAOL except where the context otherwise requires;

(xxvii) "refuelling bowser" means a mobile receptacle for the storage of fuel and the transfer of the same to an aircraft or a vehicle;

(xxviii) "road traffic enactments" has the same meaning as in section 63 (3) of the Airports Act 1986;

(xxix) "standing" means an area at the airport designated for use as a taxi stand;

(xxx) "taxi" means a hackney carriage licensed under section 37 of the Town Police Clauses Act 1847 by Luton Borough Council;

(xxxi) "vehicle" means any mechanically propelled conveyance or manually operated apparatus on wheels and includes trailers, items of plant that operate as wheeled vehicles and as static apparatus but does not include an aircraft.

(b) These byelaws may be cited as the London Luton Airport Byelaws 2005.

1.2 **Extent**

Except as provided in Part 3, these byelaws shall apply throughout the airport.

1.3 **Information**

A person shall state his correct name and address and the purpose of his being on the airport, if so requested by an airport official or by a constable.

1.4 **Limitation**

No provision in these byelaws shall apply to any member of the emergency services when he is acting in the course of his duty, or to any emergency vehicle being used by any such person so acting.

1.5 **Defences**

In any proceedings under these byelaws, it shall be a defence to prove that the defendant:

(a) acted with lawful authority or reasonable excuse, or

(b) took all due care and exercised all due diligence to avoid the commission of an offence.

1.6 **Authority**

An airport official shall produce his identification pass when making any request pursuant to these byelaws.

PART 2 PROHIBITED ACTS

2.1 No person shall tamper with any aircraft or anything that causes, or is likely to cause, damage to or interfere with the safe running or security of any aircraft .

2.2 No person shall tamper with any vehicle or item of plant, machinery or other piece of equipment.

2.3 No person shall enter or get on or attempt to enter or get on any vehicle or item of plant, machinery or other piece of equipment without permission.

2.4 No person shall place an aircraft other than in the place and position designated by LLAOL.

2.5 No person shall fail to chock properly or otherwise secure any stationary aircraft not in a hangar.

2.6 No person shall without permission fuel, service or maintain (and for the avoidance of doubt this shall specifically include fuelling and de-icing) any aircraft, vehicle or equipment or run any engine in areas other than those designated for such purposes.

2.7 No person shall take a vehicle into a hangar used for the maintenance or storage of aircraft without permission of the authorised occupier or his authorised servants, employees or agents.

2.8 No person shall tamper with or intentionally misuse any lift, escalator, conveyor belt, power-operated gangway, or any mechanical or electrical or electronic apparatus.

2.9 No person shall operate or use any radio transmitter, or other thing capable of radiating or generating electrical interference, in such a way as to prejudice the operation of any air traffic control service, including but not limited to communications or navigation systems at the airport.

2.10 No person shall tamper with or intentionally misuse any telephone or other apparatus provided for transmitting and receiving messages.

2.11 No person shall fail to comply with any notice erected and displayed by LLAOL prohibiting or restricting access to any building, road or any other part of the airport.

2.12 No person shall climb any wall, fence, barrier, railing, post, ladder or tower without permission.

2.13 No person shall obstruct any person acting in the execution of his duty in relation to the operation of the airport including, without prejudice to the foregoing, the conveyance of passengers, their baggage and other goods and the maintenance and servicing of aircraft.

2.14 No person shall sing, dance, shout, play a musical instrument or erect or use any apparatus for transmission, receipt, recording, reproduction or amplification of sound, speech or images after being ordered to cease such activity by LLAOL.

2.15 No person shall consume, or continue to consume, alcohol at the airport when requested by an airport official or a constable to desist and no person shall in any event be in such a state of intoxication at the airport as may cause distress or offence to any other person.

2.16 No person shall organise or take part in any public assembly, demonstration or procession likely to obstruct or interfere with the proper use of the airport or obstruct or interfere with the comfort and convenience or safety of passengers or persons using the airport.

2.17 No person shall walk on any cultivated area.

2.18 No person shall drop any litter.

2.19 No person shall fail to keep any animal under control or permit a dog to foul a footpath or a building, or fail to keep a dog on a leash.

2.20 No person shall enter or leave the airport otherwise than through a gate or entrance or exit for the time being provided for that purpose.

2.21 No person shall loiter on, frequent or remain on the airport or any part thereof without reasonable cause.

2.22 No person shall allow any vehicle, animal or thing to be on the airport after having been required to remove it, or after its presence on the airport has been forbidden by an airport official or a constable, and no airport official or constable shall forbid the presence of any vehicle, animal or thing unless he has reasonable grounds to believe that its presence has been responsible for or is about to be responsible for the breach of a byelaw or for a criminal offence.

2.23 No person shall, without prejudice to byelaw 2.24, enter the airport, except as a bona fide airline passenger or in some other authorised capacity, after he has been served by an airport official with notification in writing by post, by facsimile transmission or by other similar means which produce a document containing the text of the communication withdrawing any licence he may have to enter the airport.

2.24 No person shall remain on the airport or any part thereof, after having been requested to leave by an airport official or by a constable, and no airport official or constable shall request a person to leave unless he has reasonable grounds to believe that that person has committed or is about to commit a breach of a byelaw or a criminal offence.

2.25 No person shall without permission sell or distribute anything, offer anything for sale or hire or make any offer of services for reward.

2.26 No person shall distribute or display signs, advertisements, circulars or other printed or written matter without permission.

2.27 No person shall beg or solicit funds or contributions of any kind without permission.

2.28 No person shall without permission enter any car park (except as a bona fide airline passenger or other user of the airport or as an employee of LLAOL or an authorised person) for the purposes of parking or collecting a private motor vehicle.

2.29 No person shall deposit any waste or refuse container on any part of the airport without permission.

2.30 No person shall, in the course of business, take photographs or participate in filming or sound recording at the airport without permission.

2.31 No person shall trap wild fauna or remove any wild flora without permission.

2.32 No person shall ride a horse or engage in field sports.

2.33 No person shall smoke in or otherwise bring into or light any naked flame or create sparks in:

(a) any place where any such act is prohibited by notice.

(b) notwithstanding (a) above, any area not already indicated as a "no-smoking area" which is within 15 metres of any aircraft or of any place where liquid fuel, gas, explosives or other highly flammable material is stored or used.

2.34 No person shall light a fire without permission and any permitted fire must be in a place constructed for that purpose.

2.35 No person shall without permission fill or discharge liquid fuel from any container, including any part of a vehicle, elsewhere than in a place designated for that purpose by LLAOL.

2.36 No person shall fail to evacuate any part of the airport when instructed to do so by an authorised person or a member of one of the emergency services acting in accordance with his employment in any emergency.

2.37 No person shall without the written permission of LLAOL store or supply fuel or lubricants for aircraft using the airport.

2.38 No person shall enter or attempt to enter any airside area without first obtaining security clearance from LLAOL.

2.39 No person shall drive on any apron without first obtaining a valid apron driving permit from LLAOL, unless that person is escorted at all times by the holder of such a permit.

2.40 No person shall store or handle hazardous substances in a condition or manner likely to result in a discharge prohibited under byelaw 2.41.

2.41 No person shall cause or permit the discharge of any hydrocarbon (whether in the form of grease, oil, fuel or spirit) or other deleterious matter (whether of a solid, liquid or gaseous nature) or of any other substance of whatever nature which might obstruct or be or become a source of damage to drains, sewers or other infrastructure or which may constitute a risk to the environment or public health.

2.42 No person, other than a bona fide inbound or outbound passenger, shall enter or work in an airside area, without wearing high-visibility clothing to the standard designated by LLAOL from time to time or such other personal protective equipment as meets prevailing statutory requirements.

2.43 No person shall engage in any work in relation to any aircraft other than in a manner which complies with CAP 74.

2.44 No person shall remain in an incident area after receiving an instruction immediately to leave that area from an authorised person or from any other person in charge of an emergency vehicle and that person shall not leave any vehicle or other property under his control in such an area when so instructed.

2.45 No person shall use any language or make any gesture or commit any other act which is lewd, foul or offensive.

2.46 No person shall pass on foot or drive a vehicle behind an aircraft while it is displaying collision lights indicating that it is about to push back.

2.47 No person in charge of a vehicle shall reverse that vehicle up to an aircraft without the use of a banksman.

2.48 No person shall obstruct the passage of an aircraft refuelling bowser.

2.49 No person in charge of a bus or coach shall carry any number of passengers in excess of the number of seats and straps for the use of standing passengers in the bus or coach.

2.50 No person shall escort passengers upon any part of the airside area other than in a manner which complies with the provisions of the airside safety management procedures contained in CAP 642.

PART 3 PROHIBITED ACTS INVOLVING VEHICLES

This Part of these byelaws extends only to the parts of the airport to which the road traffic enactments do not apply.

3.1 No person shall drive a vehicle otherwise than on a road or area designated by LLAOL for the driving or parking of vehicles.

3.2 No person shall drive a vehicle without due care and attention or without reasonable consideration for other persons.

3.3 No person shall drive a vehicle at a speed in excess of:

(a) fifteen miles per hour in the area between Stands 1 to 9L,
(b) twenty miles per hour on any other part of the airside area or such other area as may by notice be designated from time to time by LLAOL, or
(c) in respect of any part of the above areas such other speed limit as may by notice be designated from time to time by LLAOL.

3.4 No person who is under the influence of drink or drugs or other intoxicating substance shall drive or attempt to drive a vehicle.

3.5 No person shall fail or refuse to comply with an indication or direction given by either a traffic sign or a road marking or an airport official or a constable.

3.6 No person, other than an authorised person acting in the course of his duty, shall wait in, leave or park a vehicle:

(a) in excess of the published waiting time limit in any area where waiting is restricted by notice erected by LLAOL,

(b) in any area reserved by LLAOL for the use of a particular person or group of persons, or

(c) in any area not specifically allocated for the parking of vehicles.

3.7 No person shall drive a vehicle or operate an item of plant, machinery or other piece of equipment which is not in a roadworthy or safe condition.

3.8 No person shall drive or leave any vehicle or item of plant, machinery or other piece of equipment which is not properly lit in accordance with the lighting requirements applicable to roads to which the road traffic enactments apply.

3.9 Where any accident involving an aircraft occurs:

(a) if present at the time of the accident the aircraft commander (or, if the aircraft is being towed, the tug-driver) shall stop and give:

(i) his name and address;
(ii) the name and address of the person who was the operator of the aircraft at the time of the accident;
(iii) the identification marks of the aircraft; and
(iv) details of the accident

to an airport official or a constable or any other person having reasonable grounds for requiring them, as soon as practicable but, in any case, no later than 24 hours after the accident;

(b) the driver of any vehicle involved shall stop and give:

(i) his name and address;
(ii) the name and address of the owner of the vehicle;
(iii) the registration number or identification marks of the vehicle; and
(iv) details of the accident

to an airport official or a constable or any other person having reasonable grounds for requiring them, as soon as practicable but, in any case, no later than 24 hours after the accident.

3.10 No person shall fail to:

(a) stop after having been involved in a traffic accident resulting in personal injury to another person, or damage to another vehicle or to any other property constructed on, fixed to, growing in or otherwise forming part of the land on which the road in question is situated or land adjacent to such land, or

(b) report the details of the accident to an airport official or a constable immediately or as soon as practicable thereafter.

3.11 No person shall drive without a valid driving licence, or without insurance or such a security in respect of third party risks as complies with the requirements of Part VI of the Road Traffic Act 1988.

3.12 No person shall leave any engine of a vehicle, or item of plant, machinery or other piece of equipment running when not in operational use.

3.13 Priority shall be given at all times to emergency vehicles by persons in charge of other vehicles.

PART 4 TAXIS

4.1 No person shall cause or permit any vehicle to be used as a hackney carriage plying for hire on the airport without a permit for that purpose issued by LLAOL and a licence having been obtained for the vehicle under section 37 of the Town Police Clauses Act 1847 from Luton Borough Council.

4.2 No person shall park or stand a taxi on any part of the airport for the purpose of plying for hire without a permit for that purpose issued by LLAOL displayed in the vehicle.

4.3 No driver of a taxi at the airport shall fail to wear in such a position and manner as to be plainly and distinctly visible, a valid hackney carriage driver's identity card issued by LLAOL.

4.4 No person shall park or stand a taxi for the purpose of plying for hire in any area other than the standings.

4.5 No person shall, without permission, in the terminal building or other public building, offer his or any other vehicle for hire.

4.6 No person shall park or stand a taxi on any standing when the maximum number to stand thereon shown by a notice erected by LLAOL at the head of the standing is thereby exceeded.

4.7 No person shall leave a taxi unattended at any time.

4.8 No person shall wash down or clean out a taxi whilst it is on a standing.

4.9 No person shall carry out any repair or maintenance work to a taxi whilst it is on a standing.

PART 5 CONTROL OF AIRCRAFT NOISE

5.1 **Flight Procedure**

5.1.1 Whilst within or directly above the airport, the commander of an aircraft which is landing at or taking-off from the airport, or which is using any of the facilities associated with the airport, shall use the airport or the facilities associated with the airport so as to ensure at all times that such aircraft is operated in a manner calculated to cause the least disturbance practicable.

5.1.2 Whilst within or directly above the airport, the commander of a jet aircraft taking off from the airport after a noise abatement power reduction shall maintain a rate of climb of at least 500 feet per minute at power settings which will ensure progressively decreasing noise levels at points on the ground under the flight path.

5.1.3 Whilst within or directly above the airport the commander of an aircraft shall not use the airport or the facilities associated with the airport for the purpose of flying training at night-time or on Sundays.

5.1.4 Flying training carried out by the commander of an aircraft shall be subject to the following conditions:

(a) permission shall be obtained either before departure by telephone communication with Apron Control or (in exceptional circumstances only) by consultation with Apron Control whilst in flight.

(b) training circuits by all jet aircraft and by all propeller-driven aircraft whose maximum total weight authorised exceeds 5,700 kilograms shall be right hand when using Runway 08 and left hand when using Runway 26, and the minimum circuit height at the airport shall be 1,500 feet above aerodrome level unless otherwise instructed by Air Traffic Control.

(c) the minimum circuit height at the airport for all jet aircraft and for all propeller-driven aircraft whose maximum total weight authorised does not exceed 5,700 kilograms shall be 1,000 feet above aerodrome level.

5.1.5 The operator or commander of any aircraft shall ensure that no jet aircraft shall take-off or land at night-time without notification having first been given by LLAOL that the take-off or landing is within the limit on the number of movements from time to time determined by LLAOL. Such notification is not required for

(a) the landing at night-time of jet aircraft diverted to the airport or

(b) the departure from the airport of such diverted aircraft where that departure is within the number of movements determined by LLAOL and allocated to the operator of that aircraft.

5.1.6 Before operating a jet aircraft of a type not previously operated at the airport by that operator, the operator concerned shall have satisfied LLAOL that the aircraft will be flown into and out of the airport in a manner calculated to cause the least noise disturbance practicable.

5.2 The ground running and testing of the engines of any aircraft shall be carried out only in any area or areas approved from time to time by LLAOL and subject to the conditions set out in the Schedule to these byelaws.

5.3 Any person who departs from any provision of this Part of these byelaws to the extent necessary for the purpose of securing the safety of aircraft in flight or the safety of aircraft, persons or property on the ground shall be deemed not to contravene that provision, but in that event he shall give or cause to be given full details of any such departure in writing to LLAOL within seven days of being required to do so.

PART 6 LOST PROPERTY

6.1 Part 6 of these byelaws shall apply in relation to the safe custody, re-delivery and disposal of any property, animal or thing (except a motor vehicle as defined in section 11 of the Refuse Disposal (Amenity) Act 1978) which, while not in proper custody, is found on any part of the airport to which the public have access or in any vehicle owned or operated by or on behalf of LLAOL but excluding any property, animal or thing found on board an aircraft in a taxi or on premises let by LLAOL.

6.2 Subject to the provisions of the Customs and Excise Acts any person other than a member of staff of the airport company, an airport official or a constable who finds property to which these byelaws apply shall forthwith hand it in the state in which he found it to a member of staff of the airport company, an airport official, a constable or a designated agent and inform that person of the place and circumstances in which it was found.

6.3 (a) Subject to any provisions of the Customs and Excise Acts and to paragraph (b) any member of staff of the airport company, airport official or constable to whom property is handed pursuant to byelaw 6.2 or who himself finds any property to which these byelaws apply shall, as soon as reasonably practicable and in any case before leaving the airport, deliver such property for safe custody in the state in which it came into his possession to the lost property office or to a designated agent and inform a member of staff of the airport company or airport official at the lost property office or a designated agent of the circumstances in which it was found.

(b) If before any lost property shall have been delivered for safe custody to the lost property office or a designated agent under this byelaw it is claimed by a person who satisfies the member of staff of the airport company or airport official or constable as the case may be that he is the true owner, it shall be eturned to that person forthwith without fee on giving his name and address to the member of staff of the airport company or airport official or constable who shall as soon as possible report the facts and give the claimant's name and address and a description of the lost property to the lost property office or a designated agent.

6.4 Any lost property delivered to the lost property office shall be retained in safe custody by LLAOL until claimed by the owner thereof or disposed of in accordance with these byelaws and LLAOL shall keep for a period of not less than 12 months a record showing particulars of the lost property (whether delivered to the lost property office or a designated agent or disposed of pursuant to the provisions of byelaw 6.3), the circumstances in which it was found and recording the ultimate disposal of the property.

Provided that:

(a) any official document, including a licence or passport shall, wherever practicable, be returned forthwith to the appropriate government department, local authority or other body or person responsible for issuing it or for controlling or dealing with it;

(b) where the name and address of the owner of any lost property, other than the documents referred to in the preceding proviso, are readily ascertainable LLAOL shall forthwith notify the owner that the lost property is in its possession and may be claimed in accordance with these byelaws.

6.5 If any lost property, while it is retained by LLAOL in safe custody, is claimed and the claimant proves to the satisfaction of LLAOL that it belongs to him and he gives his name and address to the lost property office, it shall be handed to him at the lost property office (or such other location as shall be notified) upon payment of such storage and administration charges as shall be calculated by reference to LLAOL's standard prevailing rates or (if upon request LLAOL shall deem it appropriate having regard to size and weight and subject to the payment of such storage and administration charges as aforesaid and a reasonable additional sum to cover postage and packaging) sent to the claimant by first class mail (if practicable) or otherwise by parcel post.

6.6 (a) If any lost property deemed by LLAOL to be of more than negligible value and retained by LLAOL for safe custody is not re-delivered to a person pursuant to byelaw 6.5 within three months of the date when it was delivered to the lost property office, LLAOL shall notify the finder in writing offering it for sale to the finder at such reasonable price as shall be specified in the notification. If the finder shall within fourteen days from (and including) the date of service of the notice pay the purchase price to LLAOL, LLAOL shall cause the relevant item of lost property to be delivered to the finder in the most appropriate manner at the risk of the finder. If the finder does not so respond within the above-mentioned time limit of fourteen days LLAOL shall use reasonable endeavours to sell it for the best

price reasonably obtainable, and if it shall not have been able to do so within a further two months LLAOL shall be free to dispose of it as it thinks fit.

(b) Notwithstanding the foregoing provisions of these byelaws, if any lost property retained by LLAOL is of negligible value and if, within fourteen days from the time when it was found, it has not been re-delivered to a person pursuant to byelaw 6.5, LLAOL shall be entitled to sell it at the best price that can be reasonably be obtained or to dispose of it as it thinks fit.

(c) Notwithstanding the foregoing provisions of these byelaws, if any lost property retained by LLAOL for safe custody is of a perishable nature and if it has not been re-delivered to a person pursuant to byelaw 6.5 within forty eight hours from the time when it was found, LLAOL shall be entitled to re-deliver it to its finder or to sell it at the best price that can reasonably be obtained or in the case of property of negligible value to dispose of it as it thinks fit.

(d) Notwithstanding the foregoing provisions of these byelaws, any lost property which is or which becomes objectionable may forthwith be destroyed or otherwise disposed of in a reasonable manner.

(e) A sale under this byelaw shall not prejudice the right, for a period of twelve months from the date on which the property came into the custody of LLAOL, of any true owner whose rights have been divested by the sale to be paid the proportion due to him of the residue of the proceeds of sale after deduction of any charge by LLAOL for the safe custody of the lost property and LLAOL's reasonable costs in connection with the sale.

6.7 Where any lost property is contained in a package, bag or other receptacle LLAOL may cause such receptacle to be opened and the contents examined for the purpose either:

(a) of identifying and tracing the owner of the property, or

(b) of ascertaining the nature of the contents.

6.8 Any of the matters contained in byelaws 6.5, 6.6 and 6.7 that may be carried out by LLAOL may be carried out by a designated agent.

PART 7 PENALTIES

7.1 Any person contravening byelaws 2.1, 2.5, 2.9, 2.10, 2.33, 2.34, 2.35, 2.36, 2.37, 2.38, 2.39, 2.40, 2.41, 2.42, 2.43, 2.44, 2.45, 2.46, 2.47, 3.2, 3.4, 3.7, 3.9, 3.10 and 3.13 and any byelaws in Part 5 and the Schedule shall be liable on summary conviction to a fine not exceeding level 4 on the standard scale[1].

7.2 Any person contravening any of the byelaws in Parts 2, 3, 4, and 6 except the byelaws referred to in byelaws 7.1 and 7.3 shall be liable on summary conviction to a fine not exceeding level 3 on the standard scale[1].

7.3 Any person contravening byelaw 4.3 shall be liable on summary conviction to a fine not exceeding level 2 on the standard scale[1].

[1] As at the date of these byelaws the relevant levels of the standard scale are, by virtue of section 37(2) of the Criminal Justice Act 1982, as follows:
Level 2 - £500
Level 3 - £1,000
Level 4 - £2,500
These levels are, however, subject to amendment from time to time by statute or by an Order under section 143 of the Magistrates' Court Act 1980.

PART 8 REVOCATION OF BYELAWS

8.1 The byelaws which were made by London Luton Airport Limited under sections 63 and 64 of the Airports Act 1986 on the 6th August 1997 and which were confirmed by the Secretary of State for Transport on the 16th October 1997 are hereby revoked.

SCHEDULE

Byelaw 5.2
Ground Running and Testing of Aircraft Engines

1. For all engine runs by jet aircraft, other than runs at ground idle power setting, the operator of the aircraft concerned shall:

   (a) ensure that the aircraft is positioned in the area prescribed by LLAOL,

   (b) comply with any instructions or clearance issued by Air Traffic Control before commencement of the run,

   (c) notify Air Traffic Control by radio at the commencement and cessation of each run.

2. The operator of the aircraft concerned shall ensure that, subject to paragraph 1, the aircraft is positioned in such a manner that the jet blast will not impinge on any runway, taxiway, aircraft, equipment installation or other property of the airport or third party.

3. LLAOL will give permission for an engine run under paragraph 2 between 0800 and 2000 hours local time on Mondays to Saturdays inclusive. In addition, LLAOL may at its absolute discretion grant permission for such runs:

   (a) between 0600 and 0800 hours and between 2000 and 2300 hours local time on Mondays to Saturdays inclusive, and on Sundays between 1230 and 1800 hours local time, and

   (b) in respect of aircraft fitted with high by-pass engines at any time.

4. Subject to paragraph 5, the operator of the aircraft and/or its employees, servants or agents as the case may be shall ensure that where a high by-pass engine is fitted to the NN/C (Chapter III) range of aircraft, piston and turbo-prop aircraft, engine runs other than at ground idle power settings are carried out with the engine positioned in the area prescribed by Air Traffic Control and that noise disturbance is kept to the minimum.

5. A single or double engine run at ground idle power settings may be undertaken if:

   (a) the aircraft is positioned so as to cause no damage or inconvenience to persons or property;

   (b) the engine run does not exceed 10 minutes;

   (c) a qualified person is at all times in attendance outside the aircraft to ensure the safety of persons and property during the engine run;

(d) continuous radio contact is maintained with Air Traffic Control, from whom permission to start the engine(s) must be obtained and to whom notification must be given when the engine run is completed;

(e) not more than two engines at a time are run; and

(f) prior to commencing the run the following information is given to LLAOL (Apron Control):

(i) the aircraft's registration number or letters;
(ii) the aircraft's position on the airport;
(iii) the percentage power setting anticipated;
(iv) the expected duration of the engine run.

LONDON LUTON AIRPORT

THE COMMON SEAL of **LONDON LUTON AIRPORT OPERATIONS LIMITED** was hereunto affixed this 3rd day of October 2005 in the presence of:-)

Director

Company Secretary

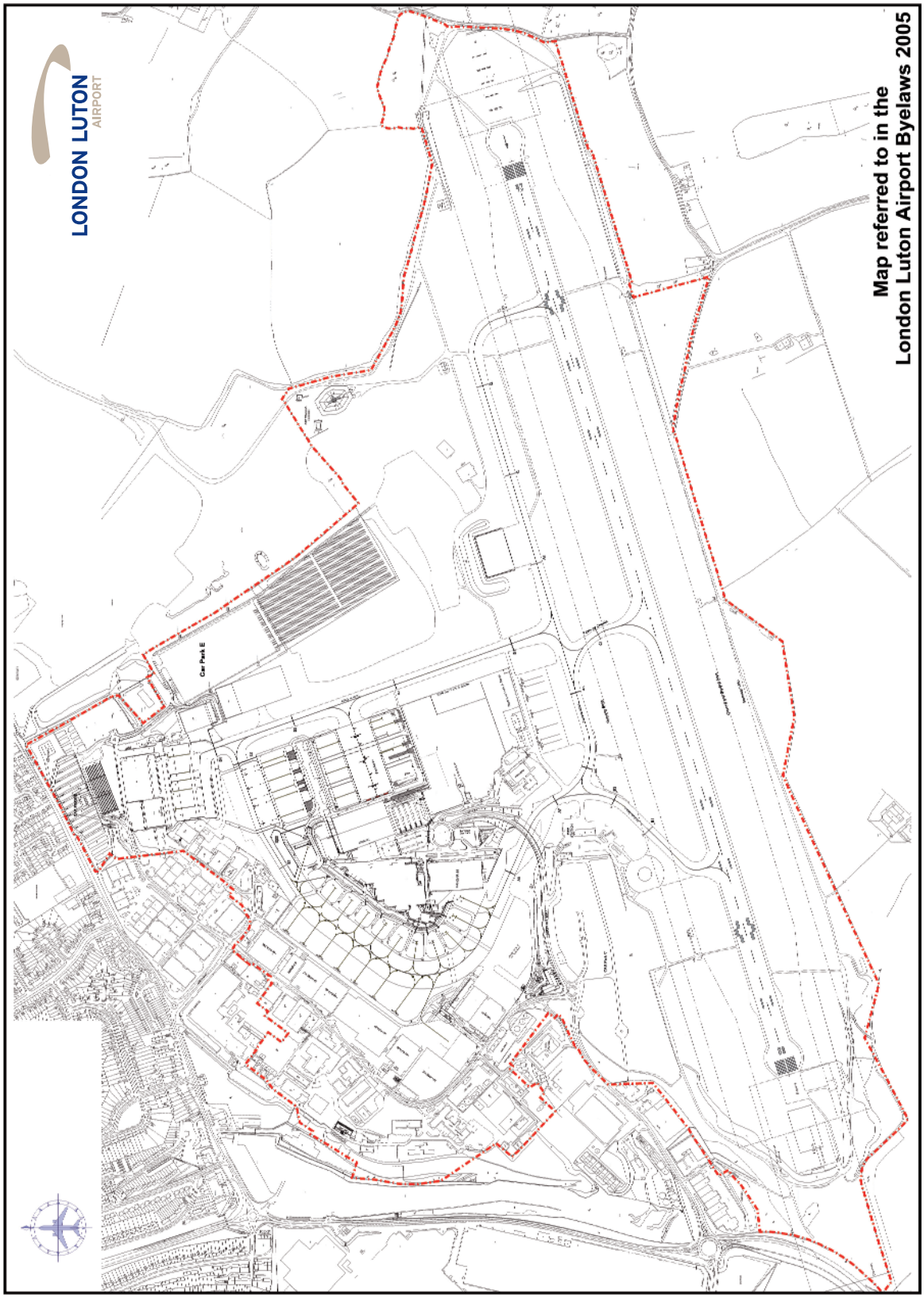
K:\Legal\Vale\LLA-Byelaws
13.6.05

The foregoing byelaws are hereby confirmed by the Secretary of State for Transport and shall come into operation on 20 November 2005

SIGNED BY

Jonathan Sharrock
Head of Airports Policy Division
by authority of the Secretary of State for Transport

17 October 2005



Map referred to in the London Luton Airport Byelaws 2005

APPENDIX 3

Airport Manager's Operations Safety Instructions

OSI 19-14	Aircraft Power Back Procedures.
OSI 20-14	Cross Bleed Engine Starts.
OSI 22-14	Jet Blast.
OSI 30-14	Aircraft requiring cross-bleed start on stands 40 + 41R.
OSI 46-14	Aircraft Engine Ground Runs + Booking and using the Engine Run-up Bay (ERUB).
OSI 47-14	Ground Power Unit (GPU) Use.
OSI 48-14	Auxiliary Power Unit (APU) Use.

LONDON LUTON
AIRPORT

It is a condition of use of London Luton Airport Operations Ltd (LLAO) that all operators comply with Instructions raised by LLAO. All employers are responsible for bringing the contents of this Instruction to the attention of their employees.

Operations Safety Instruction 019-14

Aircraft Power Back Procedures

Effective: May 1st 2014

Introduction
Aircraft power back procedures are not approved for any aircraft in any parking location without the prior and specific approval of LLAO.

FOD, blast damage to persons, buildings and equipment the weather conditions, particularly rain, snow and ice shall be considered as part of a risk assessment process.

Instruction
The LLAO Airport Manager must be approached, via the Airport Operations Control Centre, for all power back requests. Such requests may or may not be approved.

LLAO must be satisfied that any power back manoeuvres carried out are conducted safely, in accordance with an agreed procedure and with minimum disturbance to other apron users.

The aircraft captain or pilot in command must confirm that the aircraft is capable and permitted to perform a power back manoeuvre and that the crew is trained.

Where a power back is permitted, the LLAO Operations Duty Manager (ODM) must attend prior to and during any power back manoeuvre until it is complete.

Before a power back operation commences ground crews must ensure that the area into which any aircraft blast or propeller wash is going to be directed is clear of staff, passengers, vehicles and equipment and that there is no risk to property.

Without exception, tail guide must be employed to safeguard the rearward movement of the aircraft, ensure safe wing tip clearances and to avoid collisions.

The minimum engine power settings should be used, sufficient to get/keep the aircraft moving.

Authority
Airport Manager

London Luton Airport
OSI 019-14

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Operations Safety Instruction 020-14

Cross Bleed Engine Starts

Effective: May 1st 2014

Introduction
In circumstances where an aircraft Auxiliary Power Unit (APU) is unserviceable, a procedure known as a Cross-Bleed Start must be performed.

Instruction
Cross bleed start on stand should only be considered if no other options exist to perform the procedure.

A request does not constitute permission and no cross bleed start on stand may commence without express permission of ATC

Cross-bleed starts may be permitted on stand up to and including the Boeing 737-800 / Airbus A321 size aircraft

All cross-bleed starts by larger aircraft must be undertaken on the adjacent taxiway centerline or as approved by ATC.

Cross bleed starts are forbidden to take place during the pushback process.

All aircraft performing cross-bleed starts must be positioned so as not to risk the cause of damage to any person, structure, aircraft or equipment.

Cross-Bleed Starts are NOT permitted on the Cargo Apron due to the proximity of cargo equipment and materials in the vicinity.

Authority

Airport Manager

LONDON LUTON
AIRPORT

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Operations Safety Instruction 022-14

Jet Blast

Effective: May 1st 2014

Introduction
Jet engine efflux and propeller or rotor wash is a potential hazard from the blast created by all aircraft engines. It is common when applying breakaway power to get the aircraft moving that temporarily a high or medium power setting is required.

There may be an increase of thrust when an arriving aircraft is turning on to the stand centreline. The risk is further increased if for any reason the aircraft stops, then applies the additional thrust required to breakaway and continue the manoeuvre. Ideally, the aircraft should be kept moving to ensure that breakaway power is not required.

An aircraft positioning onto stand with an unserviceable engine, may make unpredictable and unfamiliar thrust inputs to enable the aircraft to manoeuvre. There is the increased potential for the power input to be much higher than normal.

Instruction
All employers shall induct staff, visitors and contractors, operating on the aprons, concerning the risks associated with aircraft engines, rotors and propellers.

Ground crews must ensure that the area immediately behind an aircraft, plus the zone immediately in front of the engine intakes, is clear before giving clearance for engine start.

Ground crews must notify pilots of any potential hazard that could be created by the starting of engines.

As a matter of routine, aircraft are permitted to make a turn on some selected stands or parking areas where dimensions permit. In this event, aircraft shall be marshalled into position.

Consideration shall be given to other parked aircraft when positioning an aircraft for nose out and self manoeuvre departure.

An aircraft shall not be permitted to make a 90º turn, or less, onto a stand from stationary if one or more engines are inoperable or not serviceable. If breakaway power cannot be achieved at normal thrust levels alternative methods to manoeuvre the aircraft must be deployed.

Aircraft are to keep all engines running (notwithstanding any fuel economy measures) in order to limit the need for high thrust levels. Ideally, the aircraft should be kept moving to ensure that break-away power is not required. If this cannot be achieved within the confines of the aprons, an aircraft may be asked to shut down engines and a push or tow initiated to manoeuvre the aircraft.

Engines must not be run for test reasons when the aircraft is on stand, except as an approved ground idle engine run. Engines should be shut down as soon as operationally practicable once the aircraft is parked. Aircraft anti-collision beacon(s) must remain on until the engines have run down.

Pilots must use the minimum power necessary to get/keep the aircraft moving, particularly when in the Apron Area.

Authority
Airport Manager

LONDON LUTON
AIRPORT

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Operations Safety Instruction 030-14

Aircraft requiring cross-bleed start on stands 40 & 41R

Effective: May 1st 2014

Introduction
In preparation for a cross bleed start due to an unserviceable APU from Stands 40 and 41R aircraft will start one engine on stand before pushing back to face west to perform the Cross-Bleed

Instruction
All aircraft that have started an engine on stand from stands 40 and 41R must be instructed to push back to face West. In exceptional circumstances (i.e. Taxiway Echo closed to the West of stand 40). ATC ground movement controllers may authorise the aircraft to be pushed back toward D4, and then pulled forward on taxiway Delta, to hold at D3 facing South. The cross-Bleed must only take place once the aircraft is at D3.

Please ensure that prior notification of any aircraft with a known unserviceable APU is communicated at the earliest opportunity to the AOCC so that they may ensure the aircraft is parked on alternative Stands to 40 or 41R to minimise the necessity for this restriction. In the event that an APU failure becomes apparent on stand this information should be passed to ATC when requesting departure clearance.

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Operations Safety Instruction 046-14

Aircraft Engine Ground Runs & Booking and using the ERUB

Effective: May 1st 2014

Introduction
This instruction sets out the rules and procedures for Aircraft Engine ground runs and using the Engine Run up Bay (ERUB)

Instruction
Due to the environmental impact of engine running, particularly at night, it must be strictly controlled and the number of ground running operations kept to an absolute minimum

The use of the term 'Engine Run' within the context of this instruction is a generic term that applies to any combination of the following:

Aircraft Engine Ground Run:
Any engines start up not followed immediately by the departure of the aircraft concerned (including engine dry running and cross bleed starts).

Auxiliary Power Unit Run:
Any APU start up that is not immediately concerned with the pre-flight or post flights sequence for an aircraft.

Ground Power Unit Run:
Any GPU start up that is not immediately concerned with the pre-flight sequence or post flights sequence, this includes GPU maintenance runs of greater than 2 hours.

Table 1 **Engine ground runs WILL normally be permitted within the following periods**	
Weekdays	Between 0600-2300 hours local
Saturdays, Sundays and Public Holidays	Between 0700-2300 hours local
Table 2 **Engine ground runs will NOT normally be permitted within the following periods**	
Weekdays	Between 2300-0600 hours local
Saturdays, Sundays and Public Holidays	Between 2300-0700 hours local
Armistice Day and Remembrance Sunday	No engine running permitted between 1055 – 1105 hours local.

Any engine running between the times published in Table 2 will only be allowed with prior approval from the Airport Manager via the AOCC. Engine ground runs will not be approved within these times unless the aircraft concerned is required for a service departing LLAOL during the first wave of flights of the day. Flight details will need to be provided in addition to the details listed above. Positioning flights are excluded from this proviso.

Responsibilities

Prior notification is essential for the management and control of engine ground runs and movements to and from the engine run up bay.

Applications for engine runs are to be submitted in ADVANCE with a minimum of 1 hours notice to the Airport Operations Control Centre (AOCC) who can be contacted on 01582 395255.

Application for an engine run does not necessarily mean that approval will be given. The following information MUST be provided when seeking approval to carry out any engine run. If the information is incomplete, approval will not be issued.

Company
Aircraft type
Reg
Level % power to be used
Engineers/contact name
Tug movement
Planned start time
Expected duration
Order number

AOCC will confirm the times requested or alternatively advise other times if the ERUB has already been booked.
AOCC will pass the information detailed above in advance to ATC by creating an electronic flight strip.

Any changes to the details given must be subject to a further application and approval.

On the aprons, engine ground runs will be limited to check-starts that do not exceed ground idle power. For checks requiring the use of higher power settings, a move to ERUB will be required.

Ground running must not take place when passengers are being embarked / disembarked on any adjacent stands.

Engine runs on stand are limited to one engine at a time for a maximum duration of 10 minutes each engine.

If applicable, the rear of stand road must be closed to safeguard vehicular traffic, before any approved engine run is permitted.

Permission to start engine(s) must be obtained from Air Traffic Control. Aircraft must remain in 2-way contact with ATC throughout the duration of the ground run.

Approved ground running operations will be monitored by ATC and LLAO Airfield Operations. If the parameters contained within the approval detail are not adhered to, the operation will be terminated by LLAOL AOCC through ATC.

All personnel concerned with engine ground running must be fully conversant with this instruction, which must be complied with at all times.

A trained member of airline, operating company or handling agent staff is to be positioned on the stand in verbal contact with the flight deck. They will communicate by the R/T or interphone with the flight deck to ensure that the engine(s) are shut down if persons or vehicles move into the danger area in front of, behind or in the vicinity of a live engine. For this purpose and if the R/T or inter-phone link is unserviceable, hand signals by day and lit signals by night may be used.

The Airfield Operations Department are also required to conduct a visual inspection of the ERUB surfaces and blast screen panels prior to and after each engine run period.

The person in charge of the ground run must ensure that the aircraft is adequately restrained so that it cannot move under any circumstances.

Due to the proximity of the ERUB to Taxiway Alpha and the runway, the aircraft must be positioned so that the jet blast is directed either, due East, North or West. The jet blast must not impact the operation of Taxiway Alpha.

In the event that an engine run is requested when the prevailing wind speed and direction makes it impossible for the above requirements to be met, AOCC will then liaise with ATC to

identify a suitable time for an engine run to take place, however this will not be made available at the expense of scheduled aircraft movements on either the parallel taxiway or runway.

In the event that an engine run can only be carried out with jet blast directed towards Alpha Taxiway or the runway the aircraft operator will be asked to reduce engine power to idle thrust for each runway movement or taxiway movement on Taxiway Alpha in the vicinity of the ERUB.

Propeller aircraft that require pre-take off engine power checks must pay particular attention to the location of adjacent aircraft, equipment, buildings and persons prior to commencing the power check. Blast effects produced by such power checks must be minimised.

Authority
Airport Manager

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Operations Safety Instruction 047-14

Ground Power Unit (GPU) Use

Effective: May 1st 2014

Introduction
This instruction sets out the rules and procedures for the use of aircraft Ground Power Units (GPU's).

Instruction
Constantly running GPU's can cause high noise levels on the apron and are an additional obstruction to free movement around a parked aircraft.

Operators are to ensure that when GPU's are in use, the connection cable between the GPU and aircraft is routed, so that as far as is reasonably practicably, it does not present a trip hazard to persons.

Operators are to ensure that the GPU's are maintained so that they do not present a safety or environmental hazard (i.e. emissions), in addition all associated cabling must be adequately shielded.

When purchasing new GPU's, Airlines and Handling Agents are encouraged to make low working noise levels a prime requirement in the selection process.

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Operations Safety Instruction 048-14

Auxiliary Power Unit (APU) Use

Effective: May 1st 2014

Introduction
This instruction sets out the rules and procedures for the use of Auxiliary Power Units (APU's)

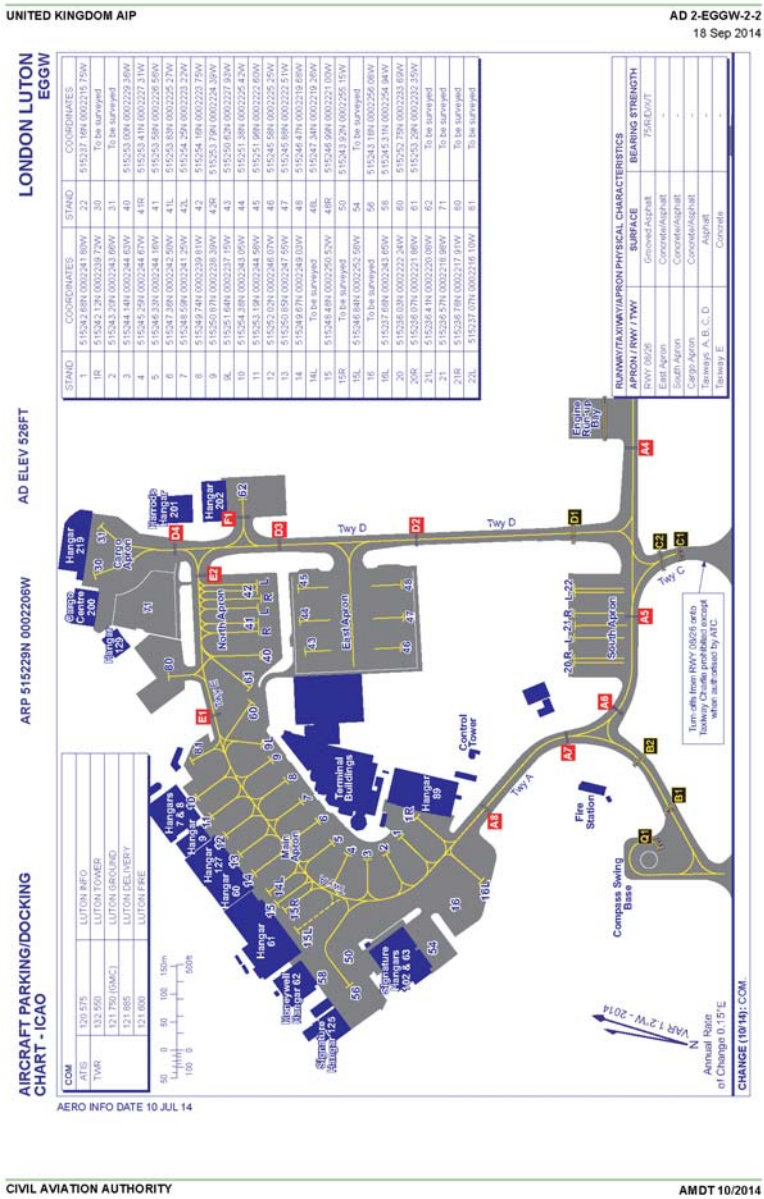
Aircraft APU's generate high levels of noise and significant fumes, which can cause disturbance to nearby apron areas, buildings and residential areas.

Instruction
Airlines and handlers are to ensure that APU's are used for the absolute minimum time necessary to meet operational needs. Wherever possible, airlines / operators and handlers are to ensure that APU's are used for no more than 5 minutes after arrival on stand and no more than 30 minutes before planned departure. Also, wherever possible, APU's are not to be used whilst passengers are embarking / disembarking.

APU's are not to be used as a substitute for GPU's.

Authority

Airport Manager

APPENDIX 4

London Luton Airport Stand Schematic