

AIRFIELD ENVIRONMENT REPORT

1. INTRODUCTION

- 1.1. The purpose of this report is to advise members of statistics concerning LLA aircraft operations and related complaints during the period July to September 2014.

2. AIRCRAFT MOVEMENTS / PASSENGER STATISTICS

2.1 Total Aircraft Movements

There were a total of 29,859 aircraft movements during the quarter (compared with 27,234 for the same period in 2013), an increase of 10%. This resulted in an average 325 movements per 24 hours (compared to 296 last year).

A breakdown of these movements is shown below:

	Jul 2014	Aug 2014	Sep 2014	Total %	QTR Total
Cargo	154	129	142	1.4%	425
Passenger	8,079	8,037	7,410	78.8%	23,526
Other Positioning	524	514	498	5.1%	1,536
Stansted Positioning	23	11	20	0.2%	54
Official	2	7	10	0.1%	19
Other Non-Commercial*	21	21	27	0.2%	69
General Aviation**	1,490	1,174	1,545	14.1%	4,209
Test & Training	5	8	8	0.1%	21
Total	10,298	9,901	9,660	100%	29,859

* Non-Commercial relates to aircraft not operating for hire or reward.

** General Aviation incorporates Private Aircraft, Helicopters and Business Jets.

2.2 Passenger Statistics

A total of 3,333,428 passengers passed through LLA during the period July to September 2014 (compared with 3,009,311 for the same period last year), an increase of 11% year on year. This equates to an average 36,233 passengers per 24 hours (compared to 32,710 during the third quarter last year).

2.3 Runway Usage

The runway usage split during this period was 35% easterly and 65% westerly (compared to 33% / 67% for the same quarter last year). The breakdown of these statistics, on a monthly basis, is as follows:

Jul 2014	30% easterly / 70% westerly
Aug 2014	14% easterly / 86% westerly
Sep 2014	60% easterly / 40% westerly

2.4 Day / Night Ratio of Movements

There were 3,054 night operations during the quarter (compared to 2,451 for the third quarter 2013), an average 33 movements per night (compared to 27 last year). Arriving aircraft accounted for 77% of total night movements and the average ratio of total aircraft operations during the quarter was 90% day / 10% night (compared to 91% / 9% for the same period last year).

N.B. The number of night operations quoted above will differ from those given by Bickerdike Allen & Partners in the night contour figures as the 8 hour Leq contour calculation period extends between 23:00hrs and 07:00hrs, 7 days per week. The figures above are for the night period, as defined in the Night Noise Policy for noise violation purposes, 23:00hrs until 06:00hrs, Mon-Sat and until 07:00hrs on Sundays.

2.5 Departure Route Analysis

The following table reports the total number of departures on each flight route, differentiating between easterly (08) and westerly (26) operations. Night movements quoted below departed between 23:00hrs and 06:00hrs, Mon-Sat and until 07:00hrs on Sunday.

		Match*		Compton		Olney		Other**		Heli	Total
		08	26	08	26	08	26	08	26		
Jul	Day	692	1,577	591	1,357	183	440	17	39	16	4,912
	Night	44	78	20	75	5	13	2	4	1	242
	Total	736	1,655	611	1,432	188	453	19	43	17	5,154
Aug	Day	313	1,871	255	1,604	81	521	7	47	15	4,714
	Night	15	99	15	76	1	19	0	0	0	225
	Total	328	1,970	270	1,680	82	540	7	47	15	4,939
Sep	Day	1,090	534	1,031	728	324	254	237	376	17	4,591
	Night	72	24	63	36	15	7	8	15	2	242
	Total	1,162	558	1,094	764	339	261	245	391	19	4,833
Day Total		2,095	3,982	1,877	3,689	588	1,215	261	462	48	14,217
Night Total		131	201	98	187	21	39	10	19	3	709
Total		2,226	4,183	1,975	3,876	609	1,254	271	481	51	14,926

* **Match (formerly Clacton)**/Detling departures have been merged as the immediate flight routes follow the same path.

*N.B. NATS removed the Dover SID on 29th May 2014 and replaced this with the existing Detling SID to enable more accurate fuel planning. **The Clacton SID was renamed Match on 18th September 2014.***

** This category relates to those aircraft that are not required to follow Noise Preferential Routes on Non-Airways Departures, such as Test/Training flights or short positioning flights.

2.6 Arrivals Route Analysis

The following table reports the total number of arrivals differentiating between easterly (08), westerly (26) operations and helicopters. Night movements quoted below landed between 23:00hrs and 06:00hrs, Mon-Sat and until 07:00hrs on Sunday.

This report also includes percentage figures for flights that have achieved a Continuous Descent Approach (CDA), which involves continuous descent with no more than one section of level flight greater than 2.5Nm in length following descent from an altitude of 5,000ft.

		Arrivals				CDA		
		08	26	Heli	Total	08 (%)	26 (%)	Total (%)
Jul	Day	1,247	3,033	16	4,296	93	90	91
	Night	284	563	1	848	87	92	90
	Total	1,531	3,596	17	5,144	92	90	91
Aug	Day	549	3,601	15	4,165	95	90	90
	Night	99	698	0	797	83	92	90
	Total	648	4,299	15	4,962	93	90	91
Sep	Day	2,424	1,685	18	4,127	92	89	91
	Night	488	211	1	700	85	89	86
	Total	2,912	1,896	19	4,827	91	89	90
Day Total		4,220	8,319	49	12,588	93	90	91
Night Total		871	1,472	2	2,345	86	91	89
Total		5,091	9,791	51	14,933	92%	90%	91%

3. NOISE MONITORING DATA

3.1 Daytime Noise Levels (July to September 2014)

The following table identifies daytime noise levels correlated to departing aircraft at the fixed noise monitoring terminals.

(Any aircraft exceeding the Daytime Noise Violation Limit of 94dB(A), between 06:00hrs and 22:59hrs Monday to Saturday and 07:00hrs to 22:59hrs on Sunday, is fined accordingly)

	Number of Departures (Daytime)										Total
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	
Jul	549	846	2,351	652	44	0	0	0	0	1	4,443
Aug	384	557	2,413	718	46	4	1	0	0	0	4,123
Sep	596	890	2,127	559	22	1	1	1	0	0	4,197
% Total	12%	18%	54%	15%	1%	0%	0%	0%	0%	0%	100%
Total	1,529	2,293	6,891	1,929	112	5	2	1	0	1	12,763

(The 9 daytime departures registering maximum noise levels in excess of 82dB(A) during the period July to September 2014 related primarily to ad hoc, older generation business jets, involving B737-200, Gulfstream 3 and F900 aircraft types)

3.1.1 Daytime Noise Violations (July to September 2014)

There was one daytime noise violation during this quarter.

Date/Time (Local)	Aircraft Type	Noise Level	Penalty
9/7/2014 (09:09 hrs)	GLF3 (Executive Jet)	94.9dB(A)	400% of runway charge

3.2 Night Noise Levels (July to September 2014)

The following table identifies the night noise levels correlated to departing aircraft at the fixed noise monitor terminals.

(Any aircraft exceeding the Night Noise Violation Limit of 82dB(A), between 23:00hrs and 06:00hrs Monday to Saturday and 23:00hrs to 07:00hrs on Sunday, is fined accordingly)

	Number of Departures (Night time)										Total
	<70 dB(A)	>=70<73 dB(A)	>=73<76 dB(A)	>=76<79 dB(A)	>=79<82 dB(A)	>=82<85 dB(A)	>=85<88 dB(A)	>=88<91 dB(A)	>=91<94 dB(A)	>=94 dB(A)	
Jul	37	32	86	39	3	0	0	0	0	0	197
Aug	21	27	81	46	7	0	0	0	0	0	182
Sep	63	38	79	22	3	0	0	0	0	0	205
% Total	21%	17%	42%	18%	2%	0%	0%	0%	0%	0%	100%
Total	121	97	246	107	13	0	0	0	0	0	584

N.B. The detection thresholds for the noise monitoring terminals are set at the lowest level to record the maximum number of aircraft noise events. However, a number of smaller aircraft types, such as business jets and propeller aircraft, get very close to but do not reach the detection threshold. Ambient background noise is also an important factor as strong winds and specific incidents such as loud road traffic, emergency vehicle sirens, lawn mowers, drills etc. can register noise levels louder than an aircraft overhead, which results in not all aircraft movements being correlated to noise events. Generally the louder noise events have more certainty of being correlated with aircraft movements.

3.2.1 Night Noise Violations (July to September 2014)

There were no night noise violations during this quarter.

3.2.2 Night Noise Contours (July to September 2014)

Night contour data for the 3rd Quarter 2014 is attached at the end of this report.

4. COMPLAINTS

4.1 Total Complaints relating to LLA aircraft operations

	3 rd QTR 2013	3 rd QTR 2014
Total No. of Complaints relating to LLA aircraft operations	364	495
No. of Complainants	196	279
No. of Events (eliciting a complaint)	738 [#] (504 [*])	1,198 [#] (739 ^{**})
<i>Average No. of Complaints per Complainant</i>	1.9	1.8
<i>Average No. of Events per Complainant</i>	3.8 [#] (2.6 [*])	4.3 [#] (2.6 ^{**})
<i>Average No. of Events per Complaint</i>	2 [#] (1.4 [*])	2.4 [#] (1.5 ^{**})
<i>No. of Aircraft Movements per Complaint</i>	75	60
<i>No. of Aircraft Movements per Event</i>	37 [#] (54 [*])	25 [#] (40 ^{**})

(Where a high proportion of events originate from one or more sources, these are identified in the above table)

* Figures excluding 234 events reported by one resident of Harpenden.

** Figures excluding 459 events reported by one resident of St Albans. These events all involved westerly departures following the 26 Match/Detling heading, for which we are proposing to introduce a revised RNAV1 flight route to help improve track-keeping away from highly populated areas.

It should be noted that one other individual in Harpenden has continued to report a large number of events during this quarter. In order not to cause distortion in the reported statistics and in agreement with LLACC, these events are no longer included in statistics. However, complaints received from this individual (reporting general disturbance and frequency) have still been included in the complaints total and this individual has been included in the number of complainants.

- 4.1.1 During the last quarter a total of 495 complaints relating to LLA aircraft operations (on average just over 5 complaints per 24 hours) were received by the Airfield Environment Office, compared with 364 for the same period last year, an increase of 36%.

The monthly breakdown of total complaints and events eliciting a complaint relating to LLA aircraft operations is as follows:

Jul 2014	229 complaints	(517 events)
Aug 2014	116 complaints	(186 events)
Sep 2014	150 complaints	(495 events)

- 4.1.2 A further 33 complaints (reporting 34 specific events) not attributable to LLA traffic were received throughout the quarter, compared to 18 (15 events) for the period July to September last year.
- 4.1.3 A total of 279 complainants reported concerns to the Airfield Environment Office between July and September 2014, compared to 196 for the same period last year. Statistics identify that 210 of the complainants (75%) contacted the airport only once during the quarter and that 98 individuals (35%) were reporting concerns for the first time.
- 4.1.4 Within the 495 complaints received during the quarter, a total of 1,198 events (eliciting a complaint) were listed, compared to 738 events for the same period last year. It should be noted, however, that 38% of events this quarter were reported by just one individual in St Albans.
- 4.1.5 Throughout the quarter a total of 44 complaints related to aircraft that had been identified as having deviated from Noise Preferential Route (NPR) swathes below the vectoring altitude of 3,000ft during the day and 4,000ft at night (off-track). Following investigations, it was verified that in 39 cases revised vectors had been given by Air Traffic Control for reasons of weather avoidance, whilst 5 complaints related to aircraft which did indeed fly outside the stipulated departure corridor. Any track deviations are automatically highlighted by the Topsonic monitoring system, prompting further analysis and details are discussed with NATS and/or operators, reminding them of our standard recommended procedures. Two complaints received during the period July to September 2014 reported disturbance relating to the single aircraft departure this quarter that exceeded our daytime noise violation limit (see section 3.2.1).

4.2 Breakdown of Complaints relating to LLA aircraft operations

The table below identifies the areas of concern reported with regard to aircraft activity during the period July to September 2014.

<u>Reported Concerns</u>	<u>No. of Complaints</u>	<u>% of Total Complaints</u>
Westerly Departures	213	43%
Easterly Arrivals	94	19%
Easterly Departures	90	18%
Westerly Arrivals	47	10%
General / Frequency	29	6%
Go Arounds	17	3%
Helicopters	1	0.2%
Ground Noise	1	0.2%
Engine Ground Runs	1	0.2%
Alleged Near Miss	2	0.4%
Total	495	100%

- 4.2.1 During the last quarter 112 individuals reported a total of 194 complaints concerning aircraft noise disturbance at night (39% of overall complaints). This compares to 124 night noise complaints (from 76 individuals) received during the same period last year.

Departing aircraft accounted for 43% of the 194 night complaints and 45% involved arrivals. A further 12% of night complaints reported general disturbance. Cargo flights, primarily involving A306 aircraft and ATP postal flights were reported in 21% of night complaints.

- 4.2.2 Within the 213 complaints concerning westerly departures, 142 complaints involved aircraft on the Match/Detling flight route, 56 were of a general nature, 9 involved Olney departures and 3 related to aircraft following the Compton heading and 3 involved aircraft on short positioning flights, following off-airways routings.

- 4.2.3 With regard to the 90 complaints attributed to easterly departures, 62 related to aircraft following the Compton flight route, 15 were of a general nature, 8 to aircraft following the Olney flight route, 5 related to aircraft on the Match/Detling heading.

- 4.2.4 Whilst 80 of the 94 complaints concerning easterly arrivals reported general disturbance, 14 related specifically to aircraft following the arrivals routing from the Lorel Reporting Point.

4.3 Nature of Disturbance

Noise was cited as a main disturbance in 94% of the 495 complaints received during the quarter. Aircraft being perceived as **off track** were reported in 39% of complaints and concerns relating to **frequency** of operations were reported in 28% of complaints received. The **low-flying** aircraft was cited in 22% of complaints.

(It should be noted that complaints received may relate to more than one type of disturbance (i.e. noisy, low and off track) and therefore the totals given in the table below will not correspond to the number of complaints received during the quarter.)

Disturbance	Day	Night	General *	Total
Aircraft Noise	273	136	57	466
Off Track	147	27	17	191
Frequency	88	23	29	140
Low-Flying	66	25	17	108

* The 'General' category relates to non-specific reports of disturbance

4.3.1 Attached to this report are two print-outs, extrapolated from the Topsonic Aircraft Noise & Track Monitoring System, identifying samples of actual flown tracks of Luton aircraft operations (arrivals and departures up to an altitude of 12,000ft, during both easterly and westerly operations) for a typical 24 hour period within the third quarter of 2014.

4.3.2 Within the 495 complaints registered during the quarter a total of 321 complaints (65%) were clearly correlated to a specific aircraft type, although many complaints were of a general nature.

Aircraft Type	No. of correlated complaints	% of Total complaints
A320 (Wizz/Monarch/easyJet/Atlas Jet)	99	20%
B737-800 (Ryanair/EI Al/Thomson)	46	9.3%
A319 (easyJet)	45	9.1%
A306 (MNG Cargo & DHL)	30	6.1%
B737-400 (Blue Air)	21	4.2%
ATP (Atlantic Airlines)	10	2%
GLF4/GLF5 (GA)	8	1.6%
GLEX (GA)	7	1.4%
B757/B767 (Thomson/EI Al)	6	1.2%
FA50/FA70 (GA)	5	1%
GLF3 (GA)	3	0.6%
Helicopter	1	0.2%
Other Private Aircraft	26	5.3%
Other Passenger Aircraft	11	2.2%
Other Cargo Aircraft	3	0.6%
Total	321	65%

4.4 Origin of Complaints

The chart below identifies the areas around the Airport from which complaints relating to LLA aircraft operations were received during the period July to September 2014.

<u>Location</u>	<u>Complaints</u>	<u>Events*</u> <u>(eliciting a complaint)</u>	<u>Complainants</u>	<u>Average Complaints per Complainant</u>	<u>Average Events per Complainant</u>
Aylesbury	1	0	1	1	0
Ayot St Lawrence	13	1	1	13	1
Berkhamsted	2	2	2	1	1
Biggleswade	1	0	1	1	0
Breachwood Green	8	15	5	1.6	3
Caddington	23	25	20	1.2	1.3
Crafton	2	0	1	2	0
Dagnall	6	2	2	3	1
Dunsmore, Wendover	2	5	2	1	2.5
Eaton Bray	17	21	5	2.8	3.5
Edlesborough	3	2	3	1	0.7
Flamstead	14	18	10	1.4	1.8
Flitwick	1	0	1	1	0
Gaddesden Row	2	0	2	1	0
Great Brickhill	1	1	1	1	1
Great Missenden	5	6	5	1	1.2
Gubblecote	1	0	1	1	0
Guilden Morden	1	0	1	1	0
Gustard Wood	3	14	2	1.5	7
Harpenden	90	188	54	1.7	3.5
Hastoe	1	2	1	1	2
Hemel Hempstead	27	28	8	3.4	3.5
Hitchin	12	17	7	1.7	2.4
Hounslow	1	3	1	1	3
Kensworth	24	129	7	3.4	18.4
Kimpton	3	2	3	1	0.7
Kinsbourne Green	3	12	3	1	4
Knebworth	5	3	4	1.3	0.8
Leighton Buzzard	1	0	1	1	0
Letchworth	1	0	1	1	0
Little Gaddesden	2	1	2	1	0.5
Luton	28	52	19	1.5	2.7
Markyate	14	11	14	1	0.8
Pepperstock	7	13	2	3.5	6.5
Pirton	1	0	1	1	0
Pitstone	1	3	1	1	3
Princes Risborough	1	0	1	1	0
Rabley Heath	1	0	1	1	0
Redbourn	23	20	12	1.9	1.7
Ringshall	3	3	2	1.5	1.5
Sandridge	1	0	1	1	0
Slip End	8	12	6	1.3	2
St Albans	55	491	21	2.6	23.4
St Leonards	2	3	1	2	3
Stevenage	19	5	15	1.3	0.3
Studham	1	0	1	1	0
Tring	7	43	4	1.8	10.8

Walkern	24	24	4	6	6
Welwyn	1	0	1	1	0
Wheathampstead	14	15	9	1.6	1.7
Whitwell	7	7	4	1.8	1.8
Wilstone	1	0	1	1	0
Totals	495	1,198 (739^{**})	279	1.8	4.3 (2.6^{**})

* Where complaints are of a general nature (i.e. frequency), individual events may not have been specified.

** Figures excluding 459 events, reported by one individual from St Albans

5. COMPLAINTS ADMINISTRATION

5.1 Method of Receipt

<u>How Received</u>	<u>% of Total Complaints</u>
E-mail*	72.5%
Telephone	27%
Letter	0.5%

* During the period July to September a total of 359 complaints were reported to the Airfield Environment Office by e-mail. Within this total 59% of e-mail complaints (211) were submitted via the noise complaint template on the website www.london-luton.co.uk, with the remaining 41% (148) being sent directly to noise@ltn.aero.

6. COMMUNITY RELATIONS

The RNAV1 Consultation ended on 9th July 2014. Following the incorporation of all feedback received during the consultation process, a proposal for a revised RNAV1 departure route has been submitted to the CAA – Directorate of Airspace Policy for approval, as part of a formal Airspace Change Proposal, in accordance with CAA guidelines (CAP 725). We expect a decision by the end of the year and any future developments in this respect will be published on our website. In the meantime members may be interested to read the RNAV1 Stakeholder Consultation Report, which is available to view on our website at the following link: <http://www.london-luton.co.uk/rnav1consultation>.

6.1 Community Visits to the Airport

Invitations are often extended to local residents and LLACC members to visit the Airfield Environment Office for a demonstration of the Aircraft Noise & Track Monitoring System, to discuss specific concerns and to view for themselves flight tracks of LLA aircraft operations in their area.

Towards the end of September 2014, the airport hosted a meeting for a resident of Gustard Wood to discuss the general impact of Luton aircraft operations in that area and any future plans for RNAV1 procedures on other Luton departure routes.

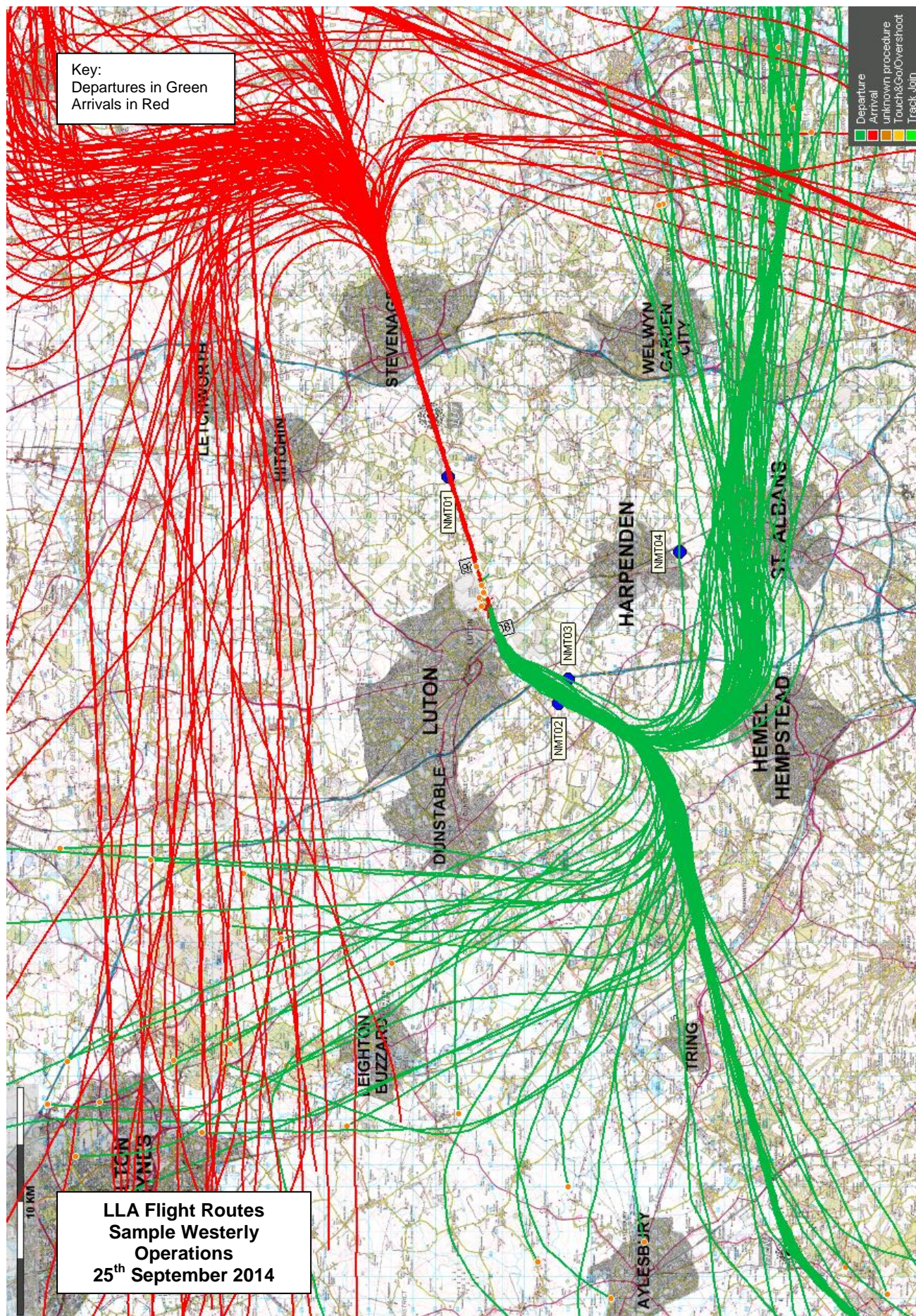
6.2 Airport Visits to the Community

No invitations were received by the Airfield Environment Office during the period July to September 2014.

*Airfield Environment Office
London Luton Airport Operations Ltd
November 2014*

*Direct Dial: (01582) 395382 (24 hours)
email: noise@ltn.aero*





London Luton Airport

Briefing Note to NTSC – 17th December 2014

Night Noise Contours July to September 2014

Introduction

Luton Airport Operations Limited (LLAOL) have retained Bickerdike Allen Partners to produce quarterly night noise contours for the third quarter of 2014 in accordance with Issue 8 of the Night Noise Policy, paragraph 3.6, which states: “LLAOL will prepare $L_{Aeq,8h}$ noise exposure contours for an average night in each quarter (Jan–Mar; Apr–Jun; Jul–Sep; and Oct–Dec) for the night contour period (2300-0700). These contours will commence at 48 dB(A) and show increasing values in 3 dB(A) steps and will be reported to the LLACC and/or NTSC.”

Contour Production

Aircraft movement data for use in the contour production has been supplied by LLAOL. The same contour production methodology has been used as for the revised 2014 Q1 and the 2014 Q2 contours. That is with the inclusion of terrain, and the latest INM software (Version 7.0d) which has been used with a validation based on measured results in 2013 at the fixed noise monitors. This methodology is very similar to that used for the 2013 Q1 to Q4 contours. The differences are described in the note A9457-N08-NW.

Noise Contour Results

The resulting noise contours are shown in the attached Figure A9457-NN14-Q3 and presented at values from 48 to 72 dB $L_{Aeq,8h}$. The area of each noise contour is given in Table 1 below and compared with the values for the previous quarter (April – June 2014) and the equivalent period during the previous year (July – September 2013).

Contour Value (dB $L_{Aeq,8h}$)	Contour Area (km ²)		
	Jul – Sep 2013	Apr – Jun 2014	Jul – Sep 2014
48	31.6	31.7	34.6
51	17.9	18.2	19.6
54	10.1	10.2	11.0
57	5.9	5.9	6.3
60	3.0	3.1	3.4
63	1.5	1.5	1.6
66	0.9	0.9	1.0
69	0.6	0.6	0.6
72	0.4	0.4	0.4
W/E Split (%)	69/31	56/44	66/34

Table 1: Area of Night Noise Contours

Aircraft Movements

The aircraft movements for the night noise contours as supplied by LLAOL are summarised in Table 2 below, and compared with the movements from the previous quarter and the equivalent quarter in the previous year. Only aircraft types with at least 10 movements have been presented. For aircraft types with less than 10 movements in a period or types that were not explicitly presented in previous periods, 'n/a' is shown.

INM Aircraft Type	Jul – Sep 2013	Apr – Jun 2014	Jul – Sep 2014
737300	n/a	17	44
737400	97	79	87
737700	n/a	11	n/a
737800	727	688	765
757RR	100	51	77
A300-622R	125	142	143
A319-131	839	722	857
A320-211	786	987	1295
A321-232	175	192	189
A330-301	n/a	18	14
BAE146	n/a	n/a	11
CL600	83	111	124
CL601	18	21	20
CNA441	14	14	21
CNA500	11	19	14
CNA510	10	21	20
CNA525C	41	42	48
CNA55B	n/a	21	14
CNA560XL	39	68	48
CNA680	n/a	13	10
DO328	137	144	139
EMB145	46	59	57
F10062	46	70	53
GIV	84	64	67
GV	171	219	212
IA1125	n/a	n/a	10
LEAR35	42	19	25
Other	80	69	29
Total	3671	3881	4393

Table 2: Night-time Aircraft Movement Numbers by Aircraft Type

Noise Contour Comparison

Compared with the same quarter in 2013, there has been an increase in the total number of movements of 20%. The fleet mix is generally similar although movements by the Airbus A320 have increased and movements by the Airbus A319 and Boeing 737-800 have decreased relatively. The modal split has remained similar, with 66% of aircraft operations using runway 26, compared to 69% of operations in the third quarter of 2013. The area within the 48 dB(A) noise contour has increased by 9% compared to the same period last year. This is largely due to the higher movement numbers. As in previous years, the number of movements, and therefore the contour area, has significantly increased compared to the previous quarter (April – June 2014).

Enneric Valmorin

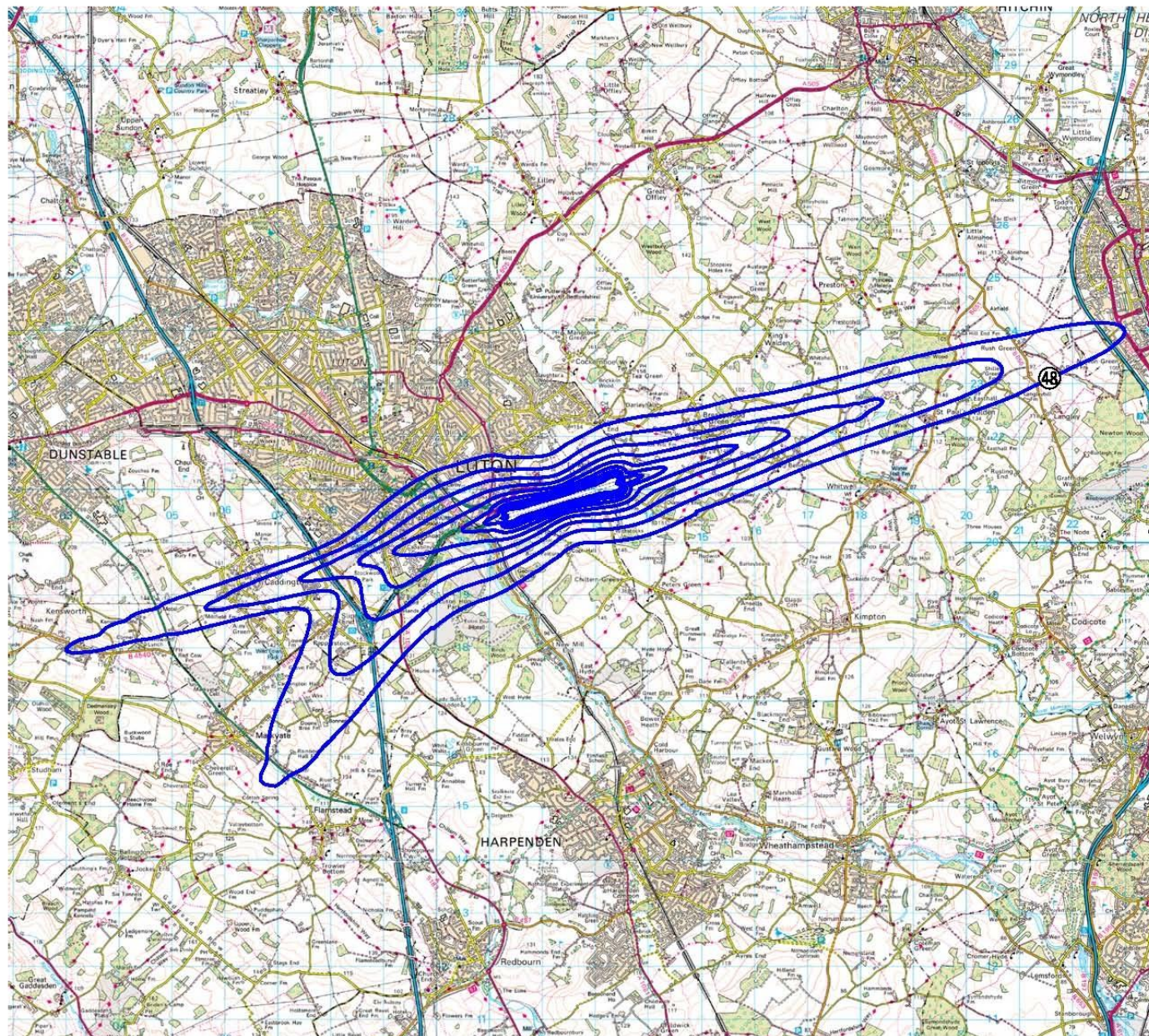
for Bickerdike Allen Partners

David Charles

Associate

Peter Henson

Partner



This drawing contains Ordnance Survey data © Crown Copyright and database right 2014.

LEGEND:

— Noise Contours,
48 to 72 dB $L_{Aeq,th}$ in 3 dB steps

REVISIONS

**Bickerdike
Allen
Partners**
Architecture
Acoustics
Technology

121 Salisbury Road, London, NW6 6RG
Email: mail@bickerdikeallen.com
www.bickerdikeallen.com

T: 0207 625 4411
F: 0207 625 0250

**London Luton Airport
Regular Contouring**

**Airborne Aircraft Noise Contours
Jul-Sep 2014 Average Night time**

DRAWN: EV

CHECKED: DC

DATE: 06/11/2014

SCALE: 1:100000@A4

FIGURE No:

A9457/NN14/Q3