Community engagement and airport operations: Heathrow case

KTH annual workshop 2017

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Heathrow today

- 75 million passengers
- 76,000 employees, 400 companies
- 80+ airlines
- 180 destinations / 90 countries
- World’s busiest 2 runway airport
  Operating at 98% runway capacity
- Capped at 480,000 ATMs per year
Airspace and Noise Performance Team: what do we do?

• AIP Compliance – Aeronautical Information Publication
  – A regulatory requirement for our operation
• Noise measurement – from individual events to all events over 92 days to produce our annual contours.
  – Helps to inform Government policy
• Night Flights – we administer the Government’s Night Flights regime
• Late runners – CEO’s company target to reduce disruption to local communities
  – Night flights are movements between 23:30 and 06:00 local time
• Unusual airspace activities – flypasts, firework displays, military exercises and anything out of the ordinary
  – Pre-event assessment of operational impact
• Airspace trials – currently undertaking an arrivals and a departures trial
• Community engagement – try to help the local communities understand all of the above
In other words, we’re trying to make sense of this…

No, just a single day in the airspace around Heathrow. (Green = LHR departures, Red = LHR arrivals, Blue = all other, non-LHR traffic)
Noise today and some time ago

• Since 1970’s, flights at Heathrow have doubled yet some noise level contours have shrunk significantly
Challenges

- Operating at capacity
- Ability to recover from disruption
  - Punctuality vs community needs (respite) vs delivering operation (commercial reasons)
- Maintain and expand our social license to grow
- Airspace modernisation to add capacity to handle demand
- Building trust with our local community and other stakeholders

Real operational improvements ➔ Improved stakeholder perception ➔ Demonstrable evidence ➔ Trust!
So what do we do with and for the community?
Genesis: airspace trials

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of people</th>
<th>No. of complaints</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>2,922</td>
<td>18,318</td>
</tr>
<tr>
<td>2013</td>
<td>2,769</td>
<td>18,717</td>
</tr>
<tr>
<td>2014</td>
<td>8,458</td>
<td>95,987</td>
</tr>
<tr>
<td>2015</td>
<td>5,573</td>
<td>108,255</td>
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</tbody>
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This raised the profile of aircraft noise around Heathrow, and...

Operational Freedoms
- Phase 1 November 2011 – 29 February 2012
- Phase 2 1 July 2012 – 30 September 2012
  - Increased use of TEAM

Early Morning Respite Trial
- 5 November 2012 – 28 March 2013
  - Trialling respite period for local community during early morning arrivals period

Airspace Trials
- Easterly and Westerly Phase 1, 16 December 2013 – 15 June 2014
- Easterly Phase 2, 28 July 2014 – 12 November 2014
- Westerly Phase 2, 25 August 2014 – 12 November 2014

Steeper Approaches Trial
- 17 September 2015 – 16 March 2016

... Mobilised community action groups

Heathrow
Making every journey better
Heathrow’s governance of noise

**Heathrow’s Airspace Governance Group**

- **Flight Ops Performance and Safety Committee**
  - Industry stakeholders focused on operational procedures
  - Industry reps
  - Airlines
  - BALPA
  - UK Flight Safety Committee

- **Community Noise Forum**
  - Focused on impact of airspace policy and noise management on local area
  - Councillors
  - Community reps
  - Action group reps
  - Industry reps
  - DfT (Government)
  - CAA

- **Heathrow’s Strategic Noise Advisory Group**
  - Strategic overview of airspace policy and noise management
  - Industry reps
  - DfT (Government)
  - CAA
  - Local authority reps
  - IATA
  - TfL
  - HACAN

- **Environmental Health Officers forum**
  - Forum for council EHOs to discuss compliance of noise regulations and management of noise
  - Council EHOs
Transparency above all

A possible breakthrough!

Reports, presentations and meeting minutes all available here

Heathrow.com/noise
Gaining trust in the data: precursor for a fact-based conversation

- “Your data is wrong!”
- “You manipulate the data”
- “My eyes and ears don’t lie!”

- NLR Verification of Heathrow NTK Systems Report
  - Independent, appointed by the local community with agreed outputs.
  - NLR had free rein on our data. They decided on what, when and how much
  - Data direct from radar and ANOMS, processed using NLR’s internal systems

  “The overall conclusion of the results found during the verification study is that no indication has been found which reduces the trustworthiness of the information presented. The information available via Heathrow’s Noise and Track Keeping system as well as via the publicly accessible WebTrak system is based on correct input, is processed in a correct way and is complete.”
Putting out real-time* information: WebTrak

* 20minute lag

1 second $L_{eq}$ values from 4G enabled noise monitors

Ability to log a complaint for any of these flights
Influencing what, when and how is flown at Heathrow: the “Fly Quiet and Clean” programme

<table>
<thead>
<tr>
<th>Airline</th>
<th>Score</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Aer Lingus</td>
<td>918</td>
<td>3</td>
</tr>
<tr>
<td>2. British Airways - short haul</td>
<td>915</td>
<td>14</td>
</tr>
<tr>
<td>3. Etihad Airways</td>
<td>900</td>
<td>17</td>
</tr>
</tbody>
</table>

**Strategic metrics**
1. Noise quota count/seat
2. Chapter number (noise certification)
3. NOx emissions/seat
4. CAEP standard (engine emissions certification)
5. Continuous Descent Approach (CDA) violations
6. Track keeping (TK) violations
7. Early or late movements between 23:30 and 04:30

**Ultimate objective is to remove red dots through engagement**

www.heathrowflyquietandclean.com
More trials: this time also driven by the community

Slightly Steeper Approach Trial
Run 2
Trial underway

Increased climb gradient on 09R DET departure route
Baseline data collection underway, trial in 2018
All of this is enabled through investment in tools

- Upgrades to ANOMS, Heathrow’s noise and track keeping system
  - The current 3-year enhancements project ends in 2018
- Additional “spin-off” tools developed
  - WebTrak My Neighbourhood
  - x-Plane
  - WebTrak 3D – coming soon
- 50 new noise monitors
  - Upgraded the permanent noise monitors (12 pcs)
  - Deployed an array to capture noise data to support the increased climb gradient trial
  - Deploying an additional ‘fixed’ array of noise monitors (16 pcs)
  - To aid community trust building
- Next steps
  - ???
  - Candidate: an automated system for ‘track change’ detection
“Making Heathrow a better neighbour”

- All this work helps with the identification of shortcomings and problem areas, and enables improvement proposals - but without stakeholder buy-in the desired effects are unlikely to materialise

- A change leading to improvement can only be achieved through close cooperation with both airlines as well as the air traffic control provider
  - Close relationship with NATS on operational/environmental issues
  - Challenge of maintaining relationship with 80+ airline stakeholders
  - ANOMS is a key enabler: automated reports, dedicated functions free up resources for actual engagement with airlines on areas that need attention
Thank you for your attention