Tampere-Pirkkala airport
Survey on noise

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Presentation in N-ALM/Copenhagen May 2016, Mikko Viinikainen

Tampere-Pirkkala airport

In 2014
- 400,000 pax (4th biggest in Finland)
- 15,000 ops (3rd biggest in Finland)
- 57% international flights

Operational frame
- Commercial aviation
- Military aviation
- General aviation
Tampere-Pirkkala airport, civil and military aviation noise Lden, year 2012
Background for the survey research

• Environmental permit was granted in 2007.
• Appeals against the permit
• Administrative Court decision in 2009
  Regulation for the survey research
    o Civil and military aviation
    o Areas affected by aviation noise
    o About people’s experience on noise
Process

- Survey consultant Research Insight Finland Oy
- 1000 answers as a goal
  - Noise area over Lden 55 dB
  - Noise area Lden 50-55 dB
  - Departure and arrival route areas
  - CTR-area
- Written questionnaires, also possibility to answer online
- 18 questions + 2 open questions + basic information about the respondent
- 4000 questionnaires sent by mail, 1302 answers
- As a motivator, a gift voucher lottery (500 €)

Areas to the questionnaire receivers
Survey in Finnish

- The survey was made according to
  - ISO Draft Technical Specification 15666
  - Standardized general-purpose noise reaction questions for community noise surveys: Research and a recommendation, Journal of Sound and Vibration 2001, 242/4
  - Noise questions were designed by a Finnish expert
- Response scale
  - 5 point verbal scale is not tested in Finnish
Airport development and aviation growth

• Open question about airport:
  – Essential to the region and it’s economics
  – Easy to access
  – Respondents were hoping for more flights and airport development
• Attitude towards the increase in air traffic growth
  – 80 % of the respondents felt positive or very positive
• Importance to the nearest municipalities
  – 1/3 of the respondents felt very important
  – ¾ felt at least quite big importance

Environmental impacts

• As the biggest impacts were felt
  – Noise
  – Air pollution
  – Water pollution
  – Disadvantage to land use
  – Climate change contribution
• Experiencing disadvantages focuses on the area > 55 dB
• 40 % of the respondents felt no disadvantage of the airport
• Respondents compared traffic noise sources with each other:
Experienced bothering, disturbance or annoyance at home in past 12 months

- 1. Commercial aviation inside
- 2. Commercial aviation outside
- 3. General aviation inside
- 4. General aviation outside
- 5. Military aviation inside
- 6. Military aviation outside

### All respondents (n=1302)

#### Extremely bothering, disturbing, annoying

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</table>

### Respondents living in area 50-55 dB (n=232)

#### Not at all bothering, disturbing, annoying

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FINAVIA
Experienced bothering, disturbance or annoyance at home in past 12 months, Valuation based on a numerical value

Not at all bothered, disturbed or annoyed = 0
Extremely bothered, disturbed or annoyed = 10

<table>
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<tr>
<th></th>
<th>Residents in 55 dB</th>
<th>Residents in 50-55 dB</th>
<th>Residents outside 50 dB and inside routing area</th>
<th>Residents in 50-55 dB and inside routing area</th>
<th>Residents inside CTR</th>
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<td>B=7</td>
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</table>

How often respondent wakes up at night because of the aviation noise in past 12 months

<table>
<thead>
<tr>
<th>All respondents N=1302</th>
<th>Residents in 55 dB N=19</th>
<th>Residents in 50-55 dB N=323</th>
<th>Residents outside 50 dB and inside routing area N=325</th>
<th>Residents inside CTR N=635</th>
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- Several times a night
- A few times a week
- 2-3 times a month
- Almost never / never
- Once a night
- Once a week
- Less than once a month
- Once a month
Analysis

• Respondents considered that airport is important and needs further development
• Aircraft noise is the biggest disadvantage
  – The effects of disadvantages were strongest in the vicinity of the airport
• % highly annoyed (numerical values 8-10)

![Bar chart showing residents in different noise levels.]

Conclusions

• Number of residents in the noise area Lden >55 was too small for a proper survey
• Trends can be observed, but actual results are missing
• Not possible to make further conclusions
• Adoption of similar studies in the future is unnecessary
Thank you!