

PURPOSE OF THIS PRESENTATION

- 1. Explain the purpose of the study
- 2. How it was undertaken
- 3. Present some specific research & proposals
 - Community forums
 - Runway schemes
 - Night flight restrictions
 - Other examples
- 4. Answer any questions you may have

GTAA NOISE MANAGEMENT ACTION PLAN (2013-2017)

RESEARCH

Noise management at other airports

IDENTIFY

Potential new programs or initiatives for GTAA to pursue that

Mitigate the impacts of aircraft noiseEnhance community engagement

INPUT TO

Next GTAA Noise Management Action Plan (2018-2022)

HOW CONDUCTED

DESK RESEARCH

PROPOSALS

OUT OF SCOPE

- 26 airports
- 11 areas of noise management
- For potential new programs and initiatives
 - Best practices
 - Regulatory & operational environment
 - Best judgement

Financial costs & resources

GTAA INPUT

- Airports & areas of noise management
- Briefing on research & review of draft report

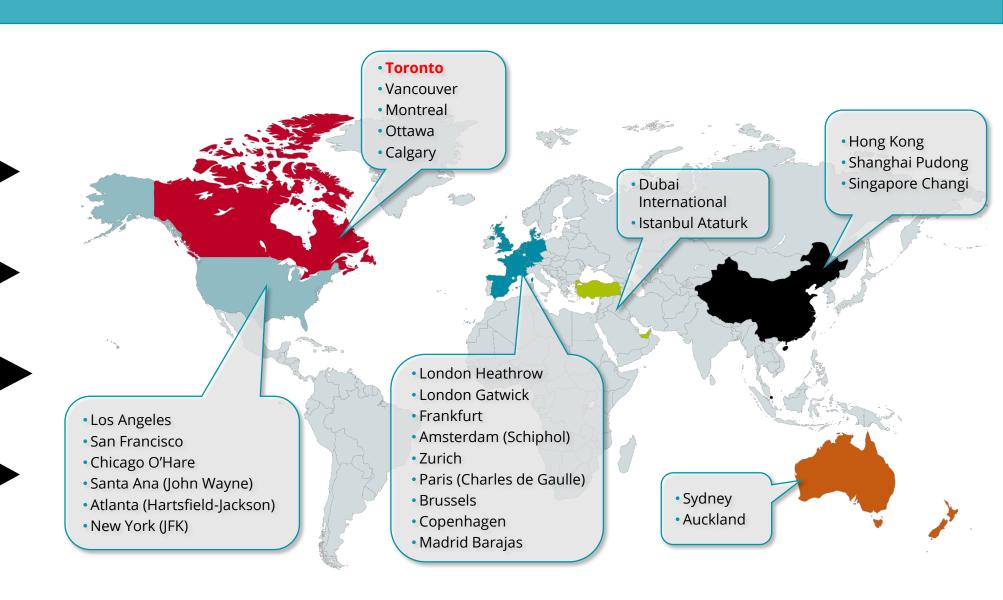
26 AIRPORTS RESEARCHED

CANADIAN AIRPORTS

TRAFFIC VOLUME

URBAN ENVIRONMENT

NOISE MANAGEMENT



Several stakeholders can be involved in each practice

QUIETER FLEET INITIATIVES

NOISE ABATEMENT PROCEDURES

NOISE REPORTING & METRICS

NIGHT FLIGHT RESTRICTIONS

LAND USE PLANNING

FLY QUIET REPORTING

RUNWAY USE

NOISE COMPLAINTS

INDEPENDENT NOISE OMBUDSMAN

AIRCRAFT ON THE GROUND

COMMUNITY OUTREACH

Noise management at Toronto already includes practices in these areas

Not part of the existing noise management practices at Toronto

QUIETER FLEET INITIATIVES

Restricting the noisiest aircraft types, financial mechanisms, A320 family 'whine' (more detail later)

NIGHT FLIGHT RESTRICTIONS

More stringent operating restrictions at night (more detail later)

RUNWAY USE

Use of runways to manage noise (more detail later)

AIRCRAFT ON THE GROUND

Noise from engine tests and parked aircraft

NOISE ABATEMENT PROCEDURES

Procedures to reduce noise on landing & take-off

LAND USE PLANNING

Management of land use near an airport & noise insulation schemes

NOISE COMPLAINTS

How submitted, handled, reported

COMMUNITY OUTREACH

Forums similar to CENAC at Toronto

NOISE REPORTING & METRICS

How data from noise monitors is reported to the public

FLY QUIET

Voluntary publication of airline performance against noise related metrics

INDEPENDENT NOISE OMBUDSMAN

Independent third party responsible for oversight & intervention

30 PROPOSALS DEVELOPED

Group 1: Reducing the impact of aircraft noise

Group 2: Managing night noise

Group 3: Community & industry engagement

Group 4: Data & reporting initiatives

Group 5: Examine voluntary initiatives

Some examples from each area follow

Reducing the impact of aircraft noise

Short-term

- Investigate summer time weekend runway alternation schemes (PR1/PR3)
- Retrofit A320 family aircraft with vortex generators (QF2)
- · Investigate lower power low drag operations (NAP2)
- Auxiliary power unit restrictions (GG2)

Long-term

- Investigate opportunities to use the runways to provide noise relief during off-peak periods on weekdays (PR2)
- Investigate continuous descent approach operations (NAP2)
- Investigate if departure procedure NADP2 has benefits of NADP1 for residential communities (NAP3)

Managing night noise

Short-term

- Investigate night-time preferential runway schemes (PR1/PR3)
- Voluntary night-time ban on use of reverse thrust (NAP2)
- More stringent restrictions on the noisiest aircraft types at night (QF1)
- Earlier start time for ground-run restrictions (GG1)

Long-term

- Extend the period during which night-time noise is managed (NF1)
- No increase in total night-time noise (NF2)

Community & industry engagement

Community forum (CENAC)

- Annual work programme aligned to community concerns (CENAC1)
- Ensure wider community involvement (CENAC2)
- Consider increasing the independence of CENAC from GTAA (CENAC3)

Industr

- Industry forum with oversight of operational & policy activities related to noise (NAP1)
- Day-to-day complaints investigation supported by NAV CANADA/main Toronto airlines (NC1)
- Voluntary industry code of practice (NAP4)
- Standard trials methodology (NAP5)

Data & reporting initiatives

- Formal complaints policy (NC2)
- Quarterly review of noise complaints (NC3)
- Focus reporting on aircraft noise on tangible actions (NM1)
- Fly Quiet programme (MR1, MR2)
- Report compliance with preferential runway schemes (PR3)
- Benchmarking noise insulation schemes used at other airports (LUP2)

Examine voluntary initiatives

- · Programme to determine how financial mechanisms could be used to incentivise guieter fleets if required in the future (QF3)
- Consider the merits of a voluntary land-use compatibility plan with communities and local authorities (LU1)
- Examine the conditions under which a voluntary noise insulation scheme would be considered (LU2)
- Consider the need for a designated third party to arbitrate where a noise issue has not been resolved satisfactorily (NO1).

EXAMPLE 1: REDUCING THE IMPACT OF AIRCRAFT NOISE - QUIETER FLEET INITIATIVES

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OPERATING RESTRICTIONS

Restricting the noisiest aircraft types (at night) (Most airports including Toronto)

NOISE BASED CHARGING

Lower charges for 'quieter' aircraft and at night (mainly Europe)

FINANCIAL INCENTIVES

To introduce quieter aircraft (Amsterdam, Zurich)

A320 FAMILY RETROFIT

To reduce 'whine' on approach

(Chicago, Frankfurt, Gatwick, Heathrow, Los Angeles, San Francisco)

FLY QUIET REPORTING

Includes fleet

(Heathrow, San Francisco, Vancouver)

Note: Airlines with aircraft fleets based at Toronto will have less flexibility to quickly deal with changes

EXAMPLE 1: REDUCING THE IMPACT OF AIRCRAFT NOISE - QUIETER FLEET INITIATIVES

Proposals

- Restrictions: Investigate more stringent restrictions at night
- A320 retrofit: Establish programme
- Financial mechanisms: Investigate should they be required in the future

EXAMPLE 2: REDUCING THE IMPACT OF AIRCRAFT NOISE- RUNWAY SCHEMES

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PREFERENTIAL RUNWAYS

Order of priority

(e.g. Amsterdam, Toronto at night)

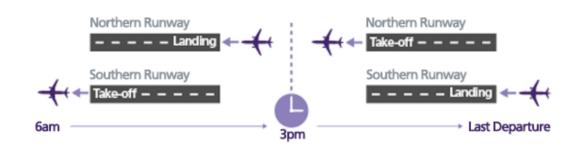
FIXED TIMETABLE

Preferred runways at different times of day (e.g. Brussels, Zurich)

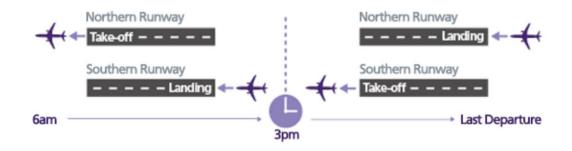
ROTATING TIMETABLE

Runway timetable changes (e.g.) weekly (e.g. Heathrow, Chicago at night (trial))

Heathrow – week 1 (daytime)



Heathrow - week 2 (daytime)



EXAMPLE 2: REDUCING THE IMPACT OF AIRCRAFT NOISE - RUNWAY SCHEMES

LEAST POPULATED AREAS

Aircraft directed over least populated areas (e.g. coastal airports – particularly at night)

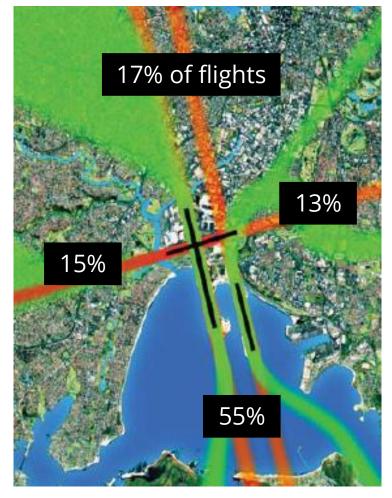
NOISE SHARING

Aims to achieve long-term sharing of noise (e.g. Sydney)

CONFORMANCE

Difficult to achieve 100% conformance, most schemes are therefore voluntary

SydneyLong Term Operating Plan Targets



EXAMPLE 2: REDUCING THE IMPACT OF AIRCRAFT NOISE - RUNWAY SCHEMES

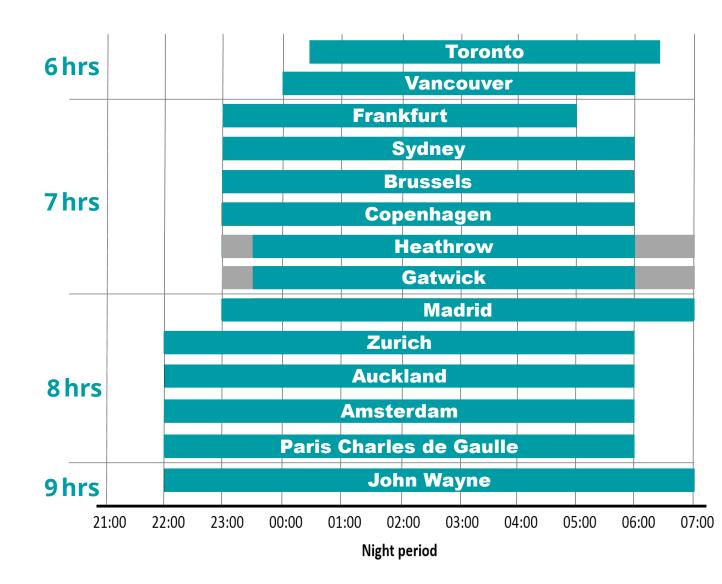
Current GTAA/NAV CANADA work

- Night time: Reviewing the existing preferential runway scheme
- Weekend (summer):
 Exploring opportunities for runway alternation scheme

Proposals

- Continue to investigate
- Requirements
 - Demonstrate: Ability to deliver an equitable sharing of noise
 - Community support: Receive sufficient support
 - Conformance: Demonstrate that a suitable level can be achieved
 - Public consultation: Successfully pass
- If implemented define & regularly report against expected conformance

- Night period: Different and more stringent set of operating rules compared to the day
- **Summary:** 13 of the 26 airports researched (& Toronto) have such a period



NONE

No defined night-time operating rules (Mainly Middle/Far East and United States)

AIRCRAFT

Restrictions on older/noisier/heavier aircraft (Several including Toronto)

TOTAL NIGHT FLIGHTS

Maximum number of night flights (per year) (Toronto, Amsterdam, Brussels, Paris)

"TOTAL NIGHT NOISE"

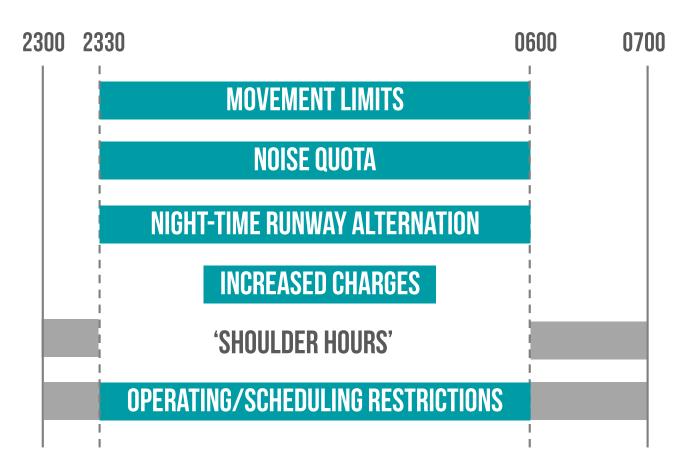
Maximum night noise 'generated' (per year) (Brussels, Gatwick, Heathrow, Hong Kong, Madrid)

CURFEW

No night flights or very specific rules (Frankfurt, Sydney, Zurich)

Other practices: Runway schemes and night-time noise charges (Europe)

Heathrow example



Proposals

- Night period: Extend the time over which night-noise impacts are managed (does not necessarily mean applying the current night period rules for a longer duration)
- Night noise: Ensure the total amount of night noise does not increase
- Relevant recommendations in the quieter fleet example

OTHER EXAMPLES

OTHER EXAMPLES

ENGAGEMENT

COMMUNITY FORUM

INCREASED INDEPENDENCE FROM GTAA

WORK PROGRAMME

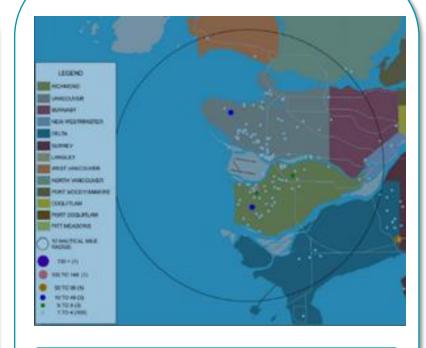
WIDER COMMUNITY INVOLVEMENT

INDUSTRY

INDUSTRY FORUM

INDUSTRY CODE OF PRACTICE

DATA & REPORTING

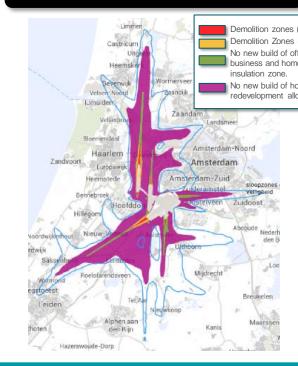


COMPLAINTS POLICY

QUARTERLY REVIEW OF COMPLAINTS

FLY QUIET

VOLUNTARY INITIATIVES



INVESTIGATE CONDITIONS FOR A VOLUNTARY NOISE INSULATION SCHEME

INVESTIGATE FINANCIAL MECHANISMS (IF REQUIRED)

SUMMARY

PURPOSE

- Research noise management initiatives and programs at other airports
- Identify potential new programs or initiatives for GTAA to pursue

RESEARCH

- 11 noise management practices investigated
- 26 airports reviewed

OUTPUT

- 30 proposals for potential new programs & initiatives
- Financial costs & resources were out of scope