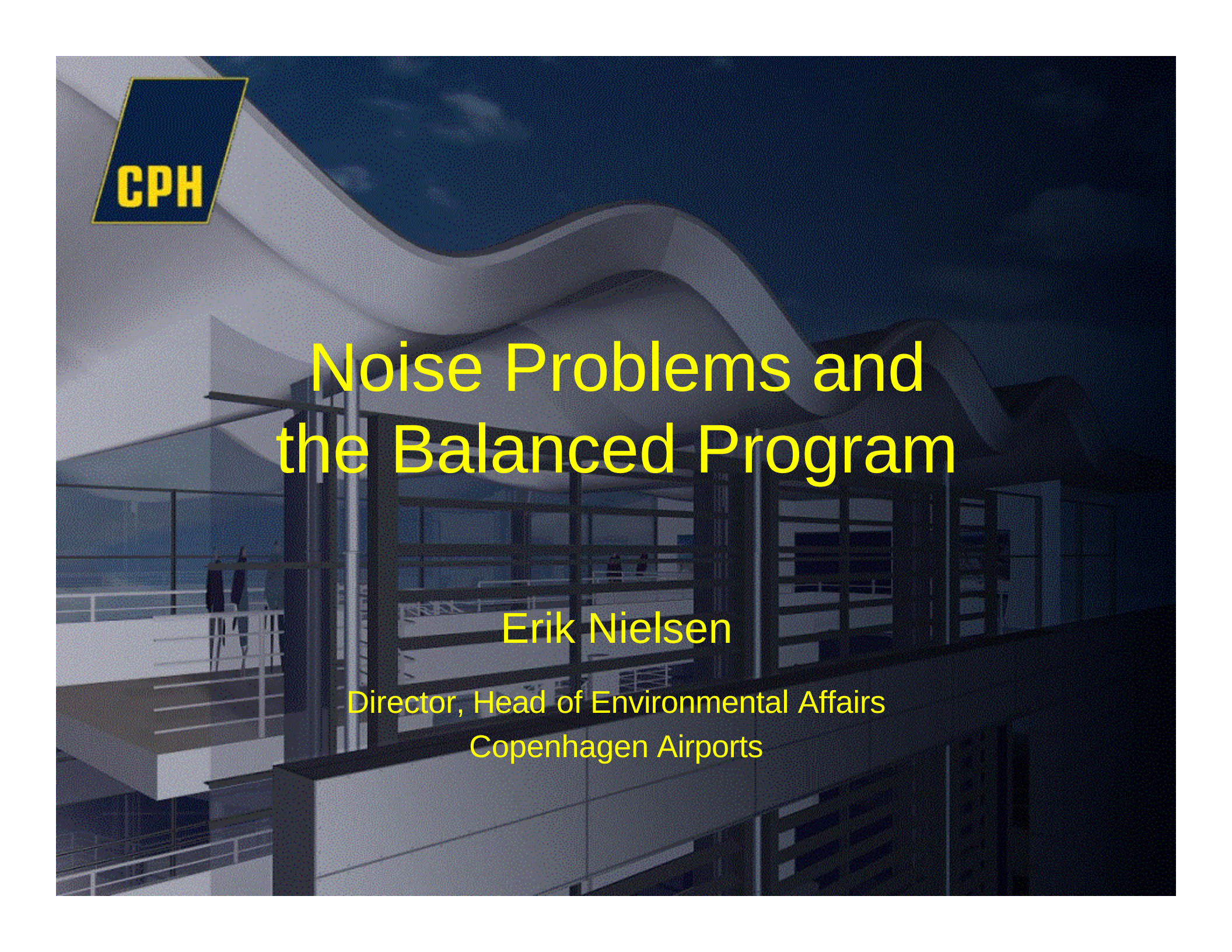




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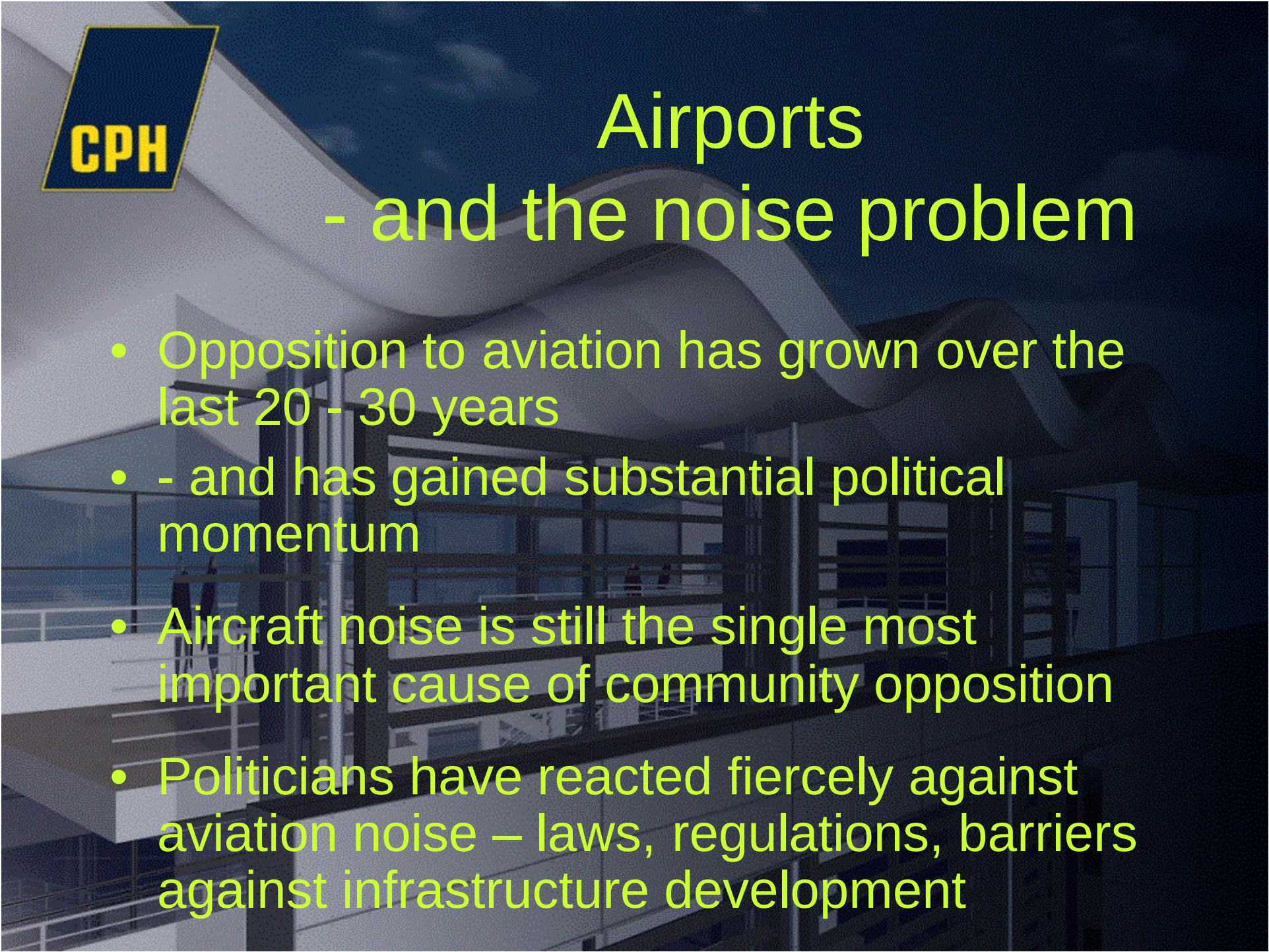
Noise Problems and the Balanced Program

Erik Nielsen

Director, Head of Environmental Affairs
Copenhagen Airports

Overview

- Noise Problems
- Balanced Program
 - Increased Stringency
 - Operational Measures
 - Operational Procedures
 - Operational restrictions
 - Land Use Planning
- Future development



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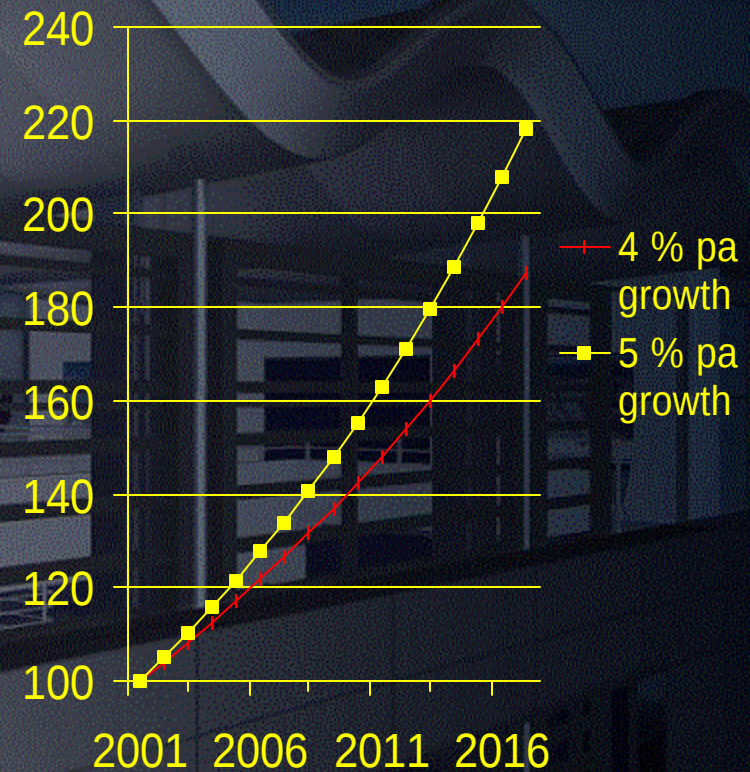
Airports

- and the noise problem

- Opposition to aviation has grown over the last 20 - 30 years
- - and has gained substantial political momentum
- Aircraft noise is still the single most important cause of community opposition
- Politicians have reacted fiercely against aviation noise – laws, regulations, barriers against infrastructure development

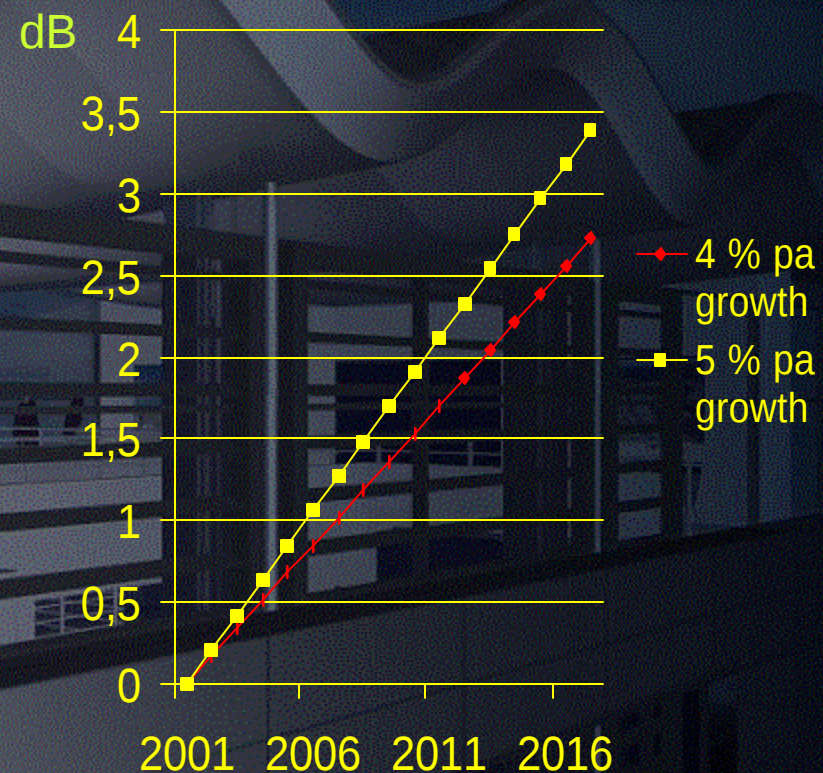
Growth - a problem?

- With a traffic growth of 4% p.a. or 5% p.a. the total traffic volume will increase (2001 = 100)



Increase in noise exposure

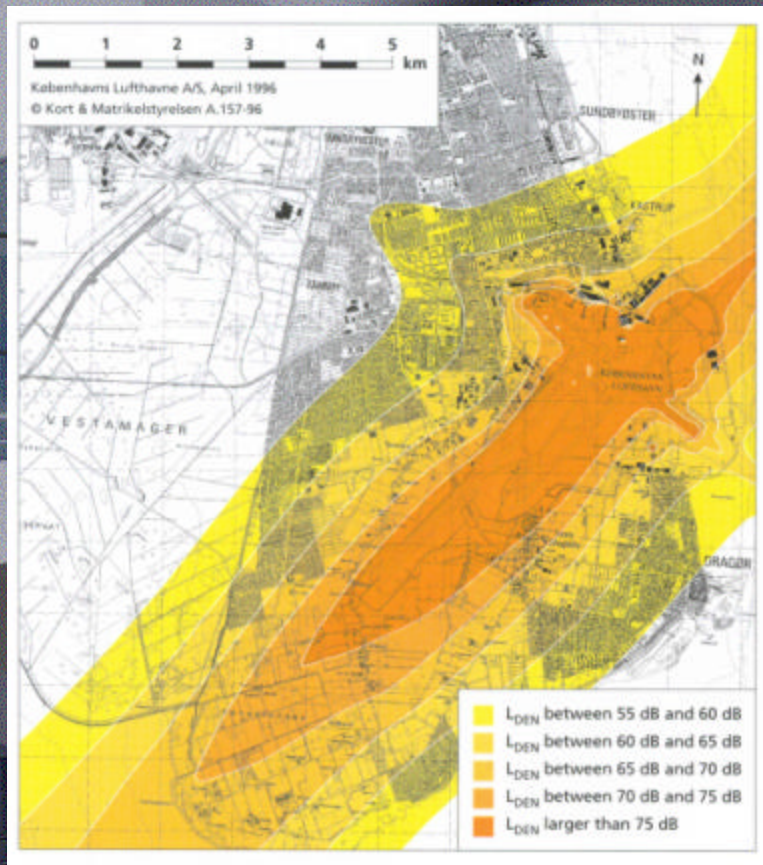
- An annual growth will lead to an increase in noise exposure



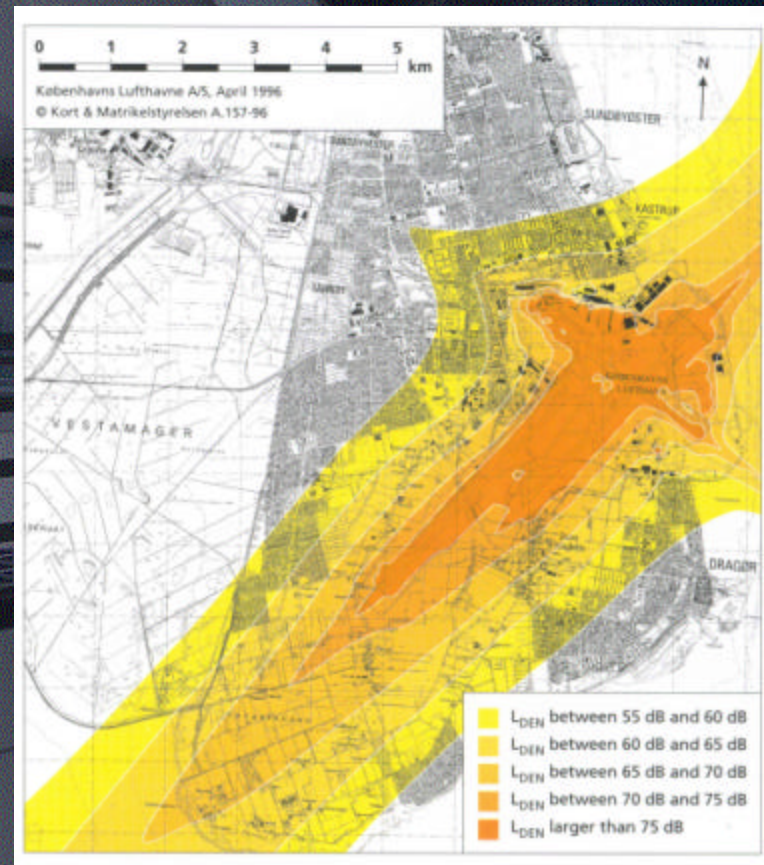
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Noise reduction demand

Noise exposure 1994



Noise exposure 2005





Policy

- what airports want

- Airports aim to growth of aviation with minimum restrictions and maximum flexibility



Airports' Noise Policy

What to achieve

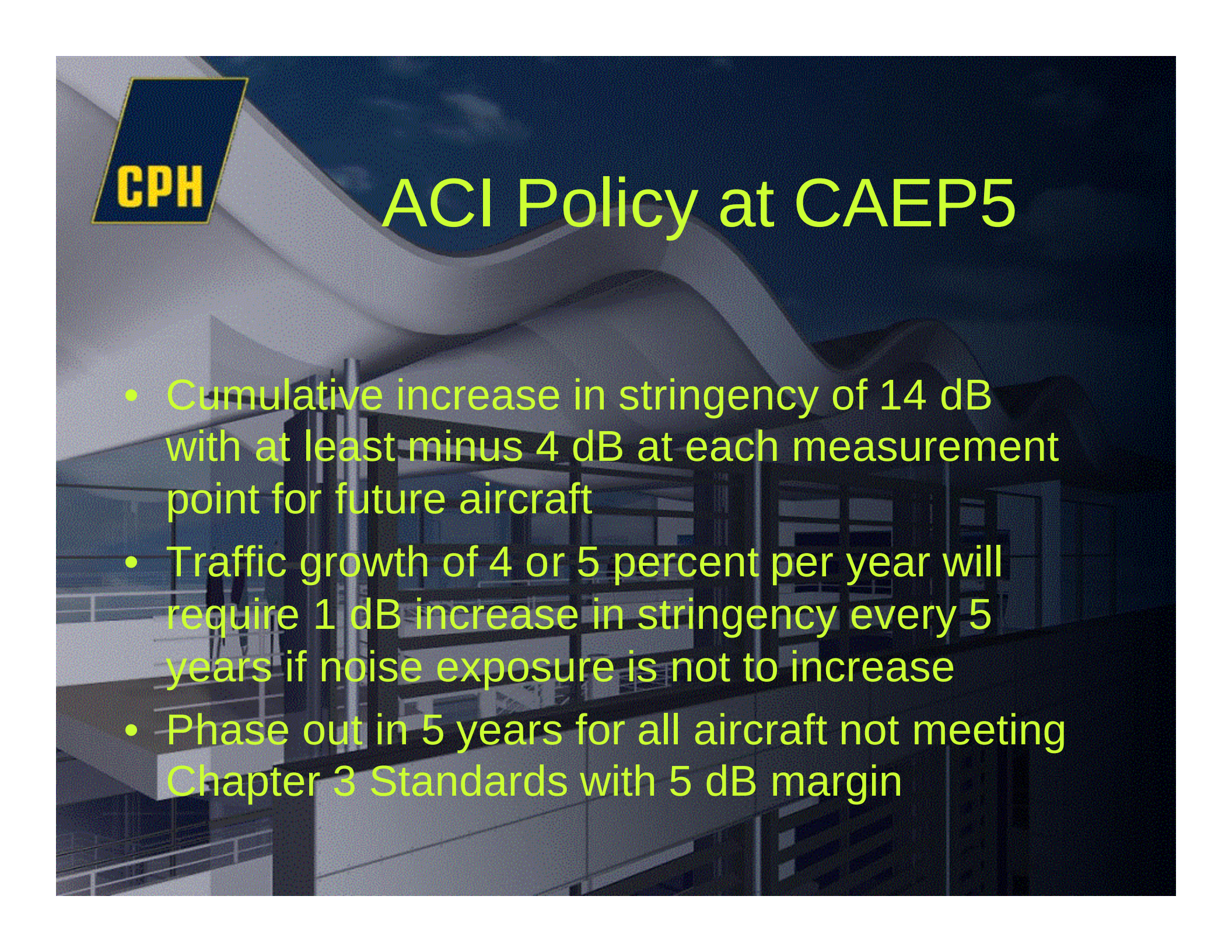
- Meeting public demand for aviation
- Continued development of aviation
- Economic development
- Traffic development



Airports' Noise Policy

What to avoid

- Further political interference in environmental requirements to aviation
- Proliferation of different noise standards and requirements in different regions and countries



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ACI Policy at CAEP5

- Cumulative increase in stringency of 14 dB with at least minus 4 dB at each measurement point for future aircraft
- Traffic growth of 4 or 5 percent per year will require 1 dB increase in stringency every 5 years if noise exposure is not to increase
- Phase out in 5 years for all aircraft not meeting Chapter 3 Standards with 5 dB margin



Outcome of CAEP5 Noise

- Cumulative increase in stringency of 10 dB and the sum of any two points must be at least 2 dB
- Unspecified commitment for future revision of standards
- No phase out



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ACI

Top airports by pax

- 1 Atlanta - ATL
- 2 Chicago - ORD
- 3 Los Angeles - LAX
- 4 London - LHR
- 5 Dallas/Ft. Worth
- 6 Tokyo - HND
- 7 Frankfurt
- 8 San Francisco - SFO
- 9 Paris - CDG
- 10 Denver - DEN

- Environmental problems often occur at the world's busiest airports
- Many of these have found their own environmental solutions
- Top 20 airports accounts for 28 % of world traffic

Dialectic

- Noise problems are local problems that can best be solved on an international basis
- This calls for international cooperation between responsible aviation partners



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Responsibility

- In a world with increasing public demand and
- No international commitment on relief

Airport management must

- Be responsible
- Act with conscience



ICAO Balanced Program

- What to consider
 - Stringency
 - Land Use Planning
 - Operational Measures
 - Procedures
 - Restrictions



ICAO Balanced Program

- What to consider
 - Stringency
 - Land Use Planning
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Stringency

- Worldwide standards
 - Governed by ICAO
 - Set at Assembly or Council decision and often a delicate compromise
- Such standards may not be sufficient in some regions, in some nations or at some airports



ICAO Balanced Program

- What to consider
 - Stringency
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Land Use Planning

Why?

- Control the use of land in relation to
 - Noise Exposure
 - 24 h basis
 - Short term - $\frac{1}{2}$ h or 1 h basis
 - Maximum Noise Level
- Should protect against annoyance or sleep disturbance
 - and neighbors too close to airport



Land Use Planning How?

- Administrative levels
 - General Directive on Land Use
 - Control of local planning - different needs
 - Control of building permissions (prohibition or additional noise insulation requirement)
- Noise insulation programs and shielding
- Buy out
- Relocation of inhabitants and/or houses



ICAO Balanced Program

- What to consider
 - Stringency
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Operational Procedures

- Preferential Runway System
 - Wind
 - Noise
 - Aircraft type
- Noise Abatement Procedures
 - Eventual dedicated for special purpose
- Noise Preferential Routing
- Adjustment of flight paths
- Flight Path Adherence



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Operational Restrictions

- Aircraft type
 - could be combined with stage length
- Time of day
 - Noise Exposure and/or Maximum Noise Level
- Aircraft classification



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Classification

	Noise Class		
	Class A Very Good	Class B Good	Class C Acceptable
2001	10	5	0
2006	14	10	5
2011	17	14	10

Cumulative margins relative to ICAO Annex 16 Third Edition 1993 Chapter 3
Individual airports may specify minimum improvements at each measurement point



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Classification System

- Manufacturers' Design Target
- Operators' Guideline for Equipment
- Airports' Guideline for Classification
- Universal Operational Opportunities
- Efficient Aviation Industry
- Proof of Responsibility



Balanced Programme

- and the future

- Many Airports will have no relief from insufficient results of CAEP5
- At Many Airports Land Use Planning has been effective for years
- Many Airports have introduced all operational procedures
 - and will therefore have no other option than operational restrictions



Future Challenges for airports

- Increase in traffic, but no increase in noise
- Airports can not afford to loose credibility
- Public Relation



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One way ?

- Your noise complaint has made a deep impression on our airport management
- We have never experienced problems of a similar serious nature
- You may retain this letter as evidence of our most sincere sympathy