

Moving Metrics:
A Performance-Oriented View of the Aviation Infrastructure

**Conference
Wrap-UP**

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Asilomar Conference Grounds

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Complex Subject Matter

- **It isn't brain surgery**
- **It isn't rocket science**
- **It isn't theoretical physics**
- **It isn't creating a PBO within the FAA**

1994-1995 National Capacity Indicators Forum

■ **Current Conditions**

- Many disparate definitions and measures of capacity and delay for different applications.
- Many different data collection and R&D programs with their own definitions of capacity and delay.
- Many analysts who have valuable insights and "tool kits"
- Lack of fundamental measures of basic performance

■ **Needs**

- Develop believable, agreed-upon measures to establish credibility
- Consolidate various existing data, definitions, measures, and programs

1994-1995 National Capacity Indicators Forum (continued)

■ Approach

- Define goals, then measures, then data collection techniques

■ Goals (need only enough data to support goals)

- Achieve additional capacity
- Establish best way to spend limited resources
- Be "solution-oriented" (e.g., ITWS)
- Get basic data out for analysts to use

Metrics

- **How do we balance having too much complexity with too much simplicity?**
 - Measurement artifact pyramid (bottom to top): measures, metrics, indicators, and models
- **Caution on using single metric in isolation**
 - Always accompany with components
 - Anticipate effects on behavior and game-playing
- **Must maintain link with organizational goals and objectives**
- **Need for understanding how individual stakeholders are affected and how they “value” metrics**

What Do All These Metrics Do for Us?

- **Justify investments / make the business case**
- **Compare/prioritize alternative improvements**
- **Measure trends and point to potential problems**
- **Analyze tradeoffs**
- **Reward performance**
- **Effect desired behavior**
- **Incentivise desired change**
- **Identify inequities**
- **Achievement of goals and objectives**

Proxy Revenues Versus Proxy Prices

- **Operate like a business**
- **Redistribution of costs according to benefits received**
- **Accountability to the customers, owners, employees**

Safety and Capacity Tradeoffs

- **Recent initiatives for reducing aviation accident/fatality rates by 80 percent by 2007**
- **Very sensitive topic**
 - All agree that safety must be preserved and enhanced
 - **Cost tradeoffs (value of human life)**
 - Safety at any cost
 - Capacity at any cost
- **Safety / accident precursors versus collision risk**
- **Need to understand process by which safety standards are developed and evaluated**
 - Essential to achievement of benefits from future technology improvements in OEP
 - Basis for setting “**ENABLING**” CNS/ATM performance requirements

Dr. Thunderstorm: There are Limits

- **Things we can and cannot control**
 - **Convective weather one third of the days**
 - **Extremely valuable mitigation techniques (ITWS/CIWS products)**
 - **Limitations of forecasts**
 - Disorganized storm systems
 - Four-hour forecasts not in the cards

- **Message: We will continue to have major disturbances in the system**

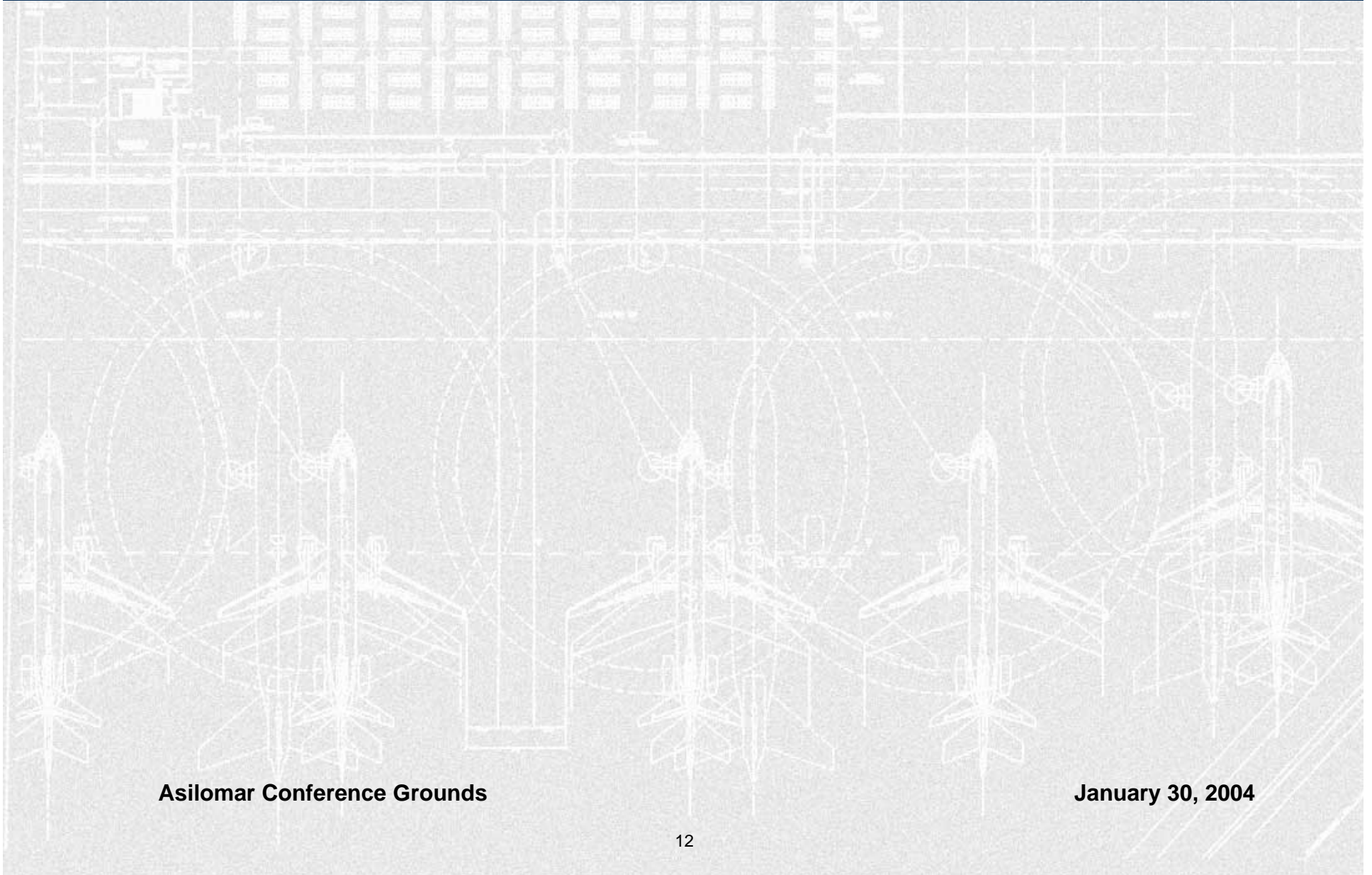
Other Limits: Things We Cannot Control

- **Uncertainty: DEAL WITH IT**
 - Not going away
- **Airline scheduling (our customers)**
 - Flight times
 - Aircraft fleet mix
- **Death and taxes of aviation industry (along with convective weather)**

Oceanic ATC Challenges

- **CPDLC**
- **RVSM**
- **RNP RNAV**
- **ADS-A/B**
- **Complex international standards and agreements**

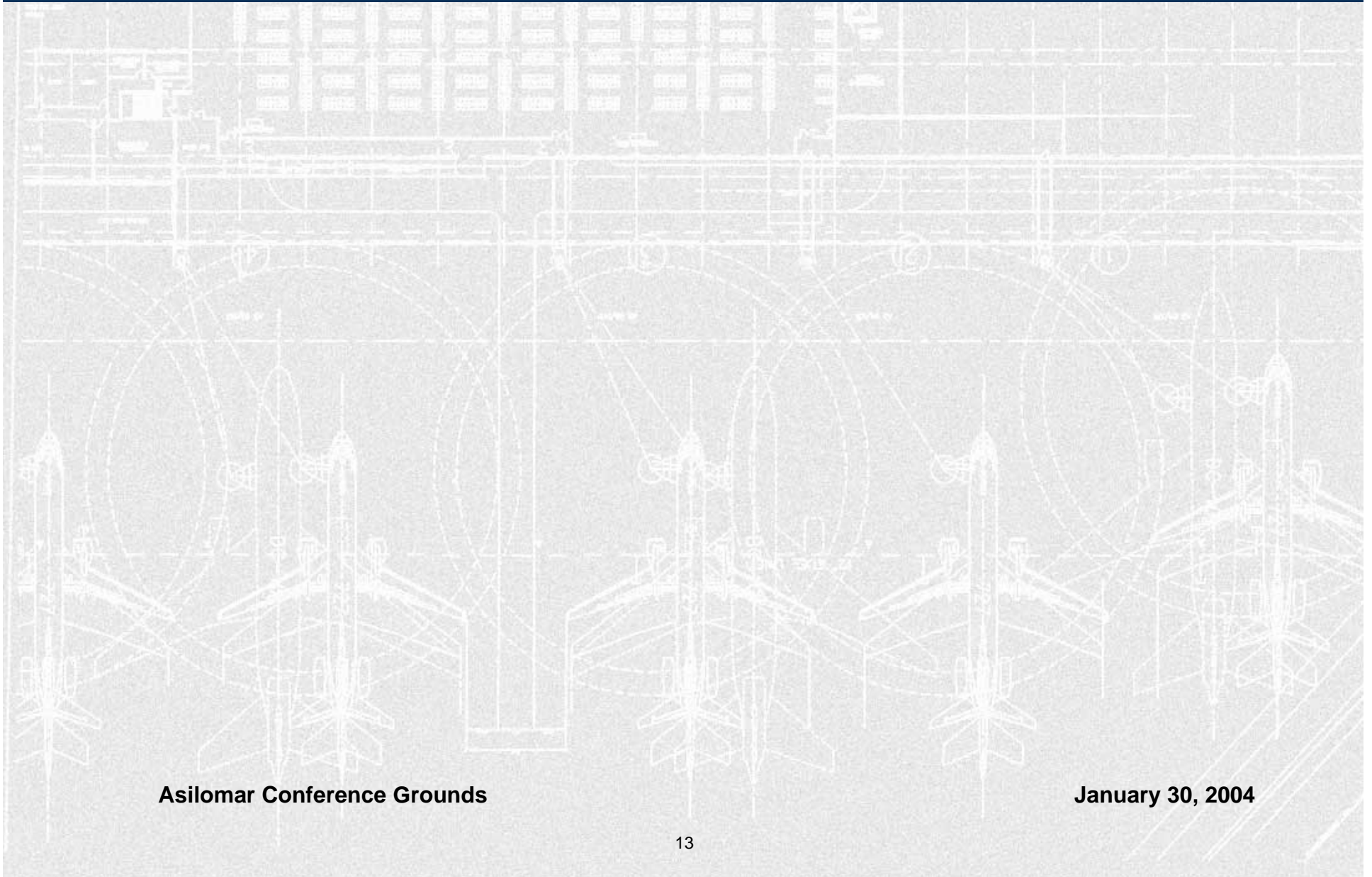
That's a Wrap



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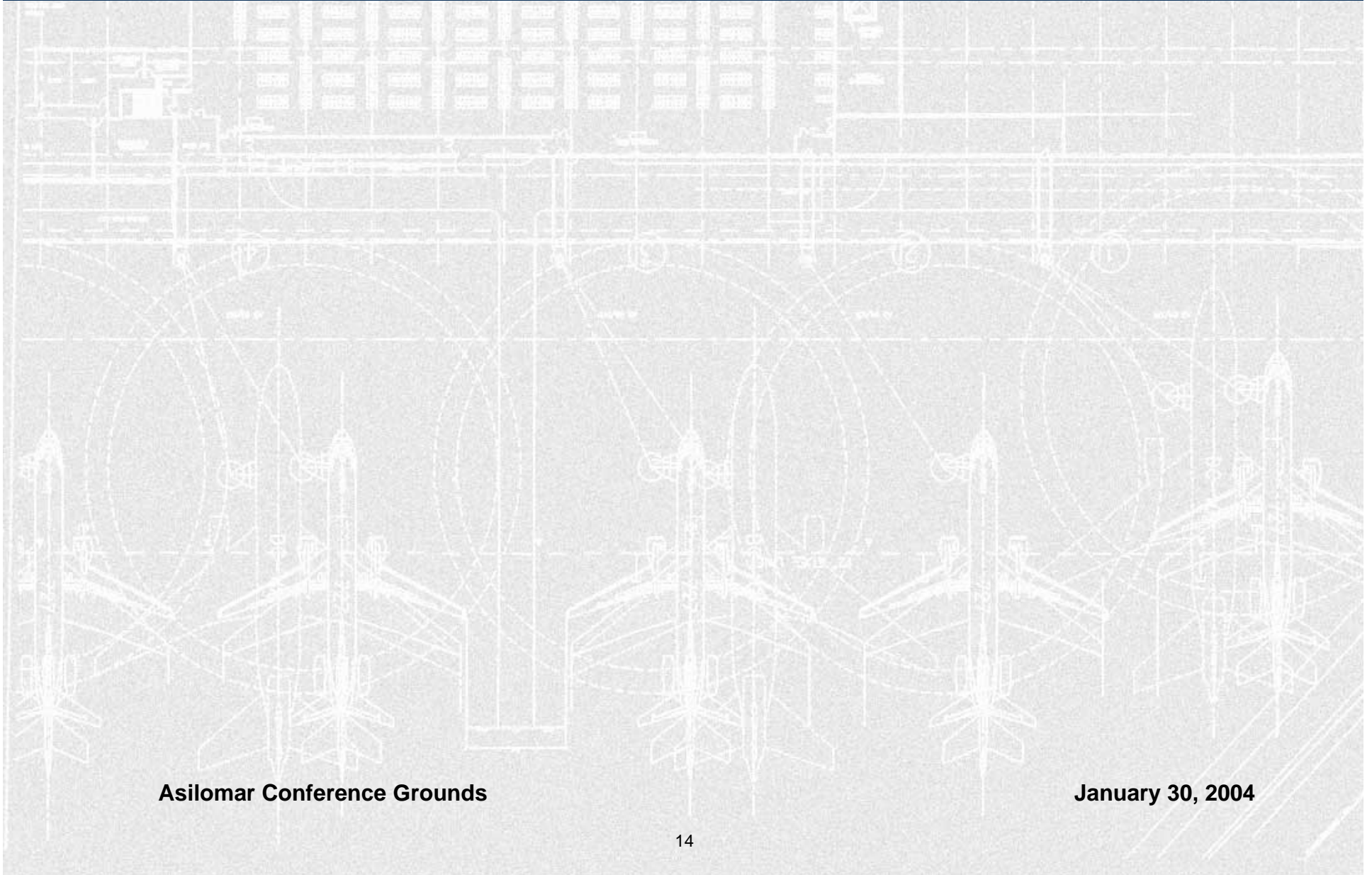
Airline Perspectives



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Inter-Sectorial Comparisons



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