Air Transportation System

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June 12, 2003
Air Transportation System

Superior Products Through Innovation

Aircraft

Security

Regulatory

Infrastructure

Simple Model

Lockheed Martin Aeronautics Company
Available Solutions

**Aircraft**
- New aircraft enabling new operating concepts
- Rationalize the system for “free flight” environment
- Prognostic Health Management to enhance safety, reduce downtime

**Security**
- Less reliance on inspections, more on tracking and “soft” technologies
- Container technologies advancements, “secure, smart containers”

**Regulatory**
- Increasingly open skies
- Improvements in ATC technologies

**Infrastructure**
- Dynamic mission planning and re-planning improvements
- Adaptive airspace architectures for dynamic environment
- Improvements in terminal operations

Have We Missed Something?

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Trends In Transportation System

• Fastest growing air transport segment is freight
  
  - *Nearly a third of U.S. air transport is expected to be cargo in 2003*
  
  - *Time to double: less than a decade*

• Cargo will be clogging the nodes / hubs
  
  - *Gateway congestion intensified by heightened security following 9/11/01*

• Trend in passenger air transport away from hubs, toward point-to-point service
  
  - *Driven by congestion at the hubs*
Have We Considered …

- Air cargo will double again by 2013 but passenger travel will not double till 2020 or beyond
  - New kinds of transports are needed
  - New vehicles are decades in development
- Decoupling passenger from freight transportation?
  - Relieving congestion at the nodes, on ground and in air, will require new facilities and
  - Separating facilities, as occurred years ago with rail, road, and ocean

Today’s Combined System

Tomorrow’s Freight System

Tomorrow’s Passenger System

SECURITY
Implications

- For passengers: faster, smaller aircraft, networks with hub-free routes
- For cargo: larger aircraft flying into freight-dedicated inter-modal nodes


**BUT ... once in the air, one shared airspace system**
• We have a decade, two at the most, until economic growth worldwide is strangled by zero-growth in air transport capacity
• New solutions must set roots today