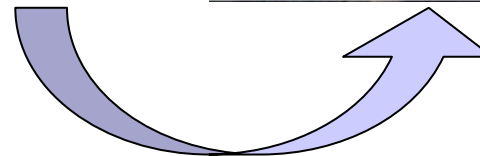
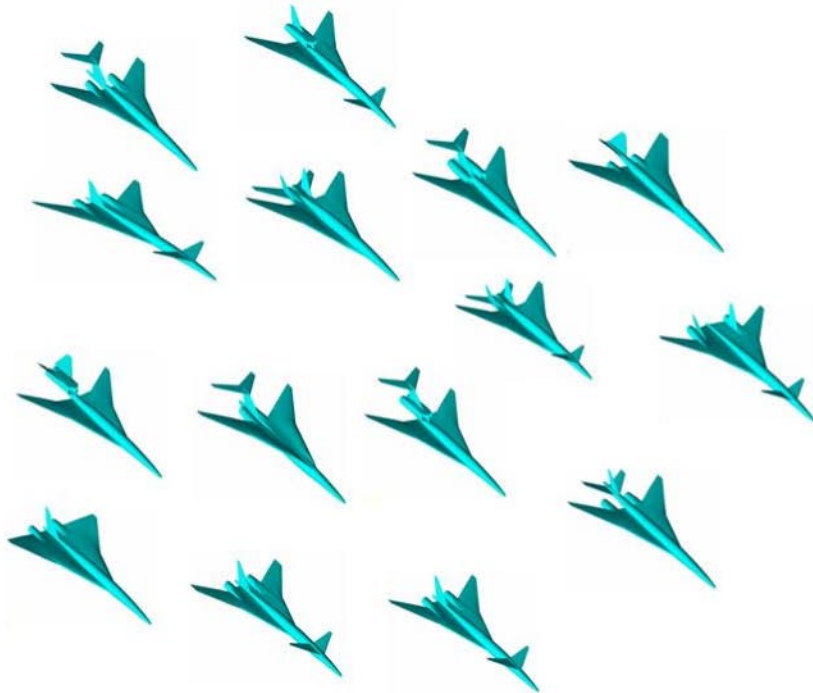


Airframe Focus

**Selected Concepts to
Understand Customer
Requirements, Technology
Needs, and Business Case**



**Peter Radloff
Boeing Commercial Airplanes**

FAA SuperSonic Aircraft Workshop

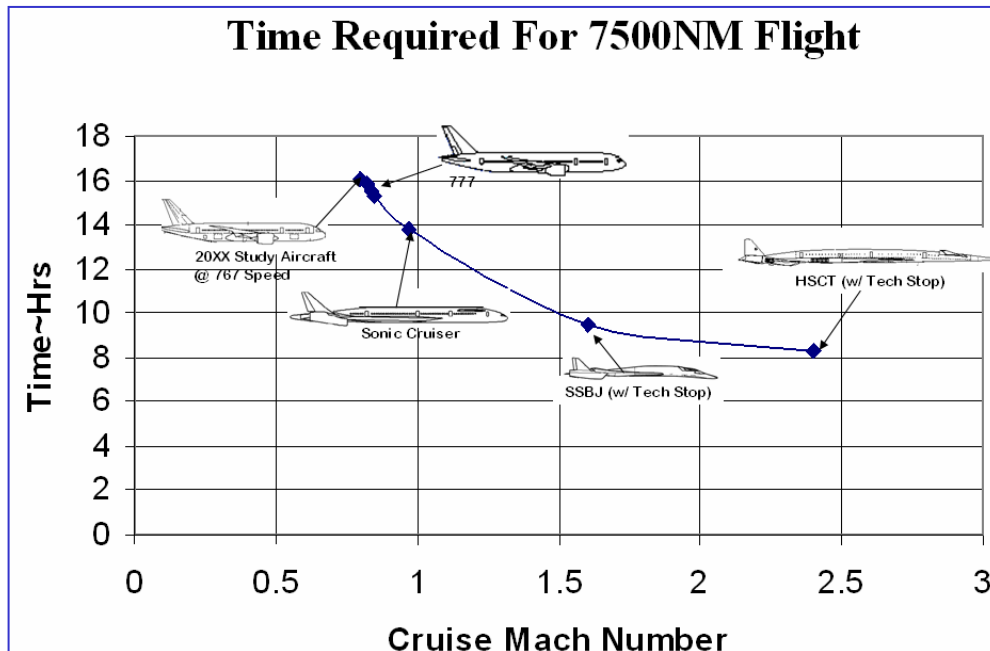
Arlington, VA

13 November 2003



797-PI-0202
11-07-3 MT

Why ?



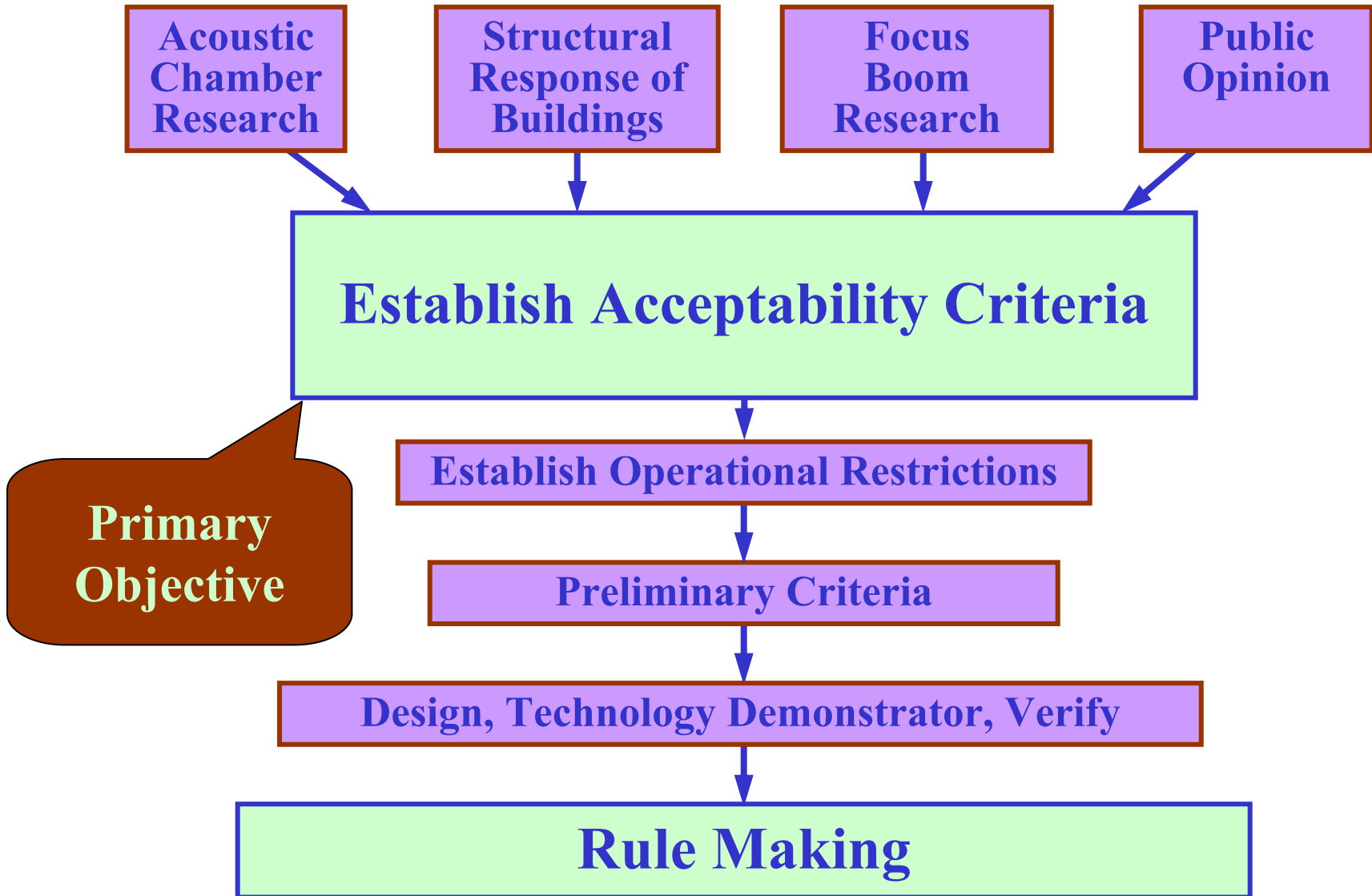
It is important that high speed aircraft research continues...

- Key U.S. aerospace technology development opportunities
- High value of time in national and global transportation systems
- At M~1.6 SSBJ captures most of supersonic time savings

Acceptable Boom Definition

- **Acceptability criteria must be based on solid science coupled with extensive human subjective response testing**
- **Must have international agreement on those criteria**
- **Will require a significant commitment of resources and time including technology demonstrator vehicle**
- **Requires technology readiness to permit design/ manufacturing of a vehicle that is totally acceptable to the public and of clear value to the global air transportation system**

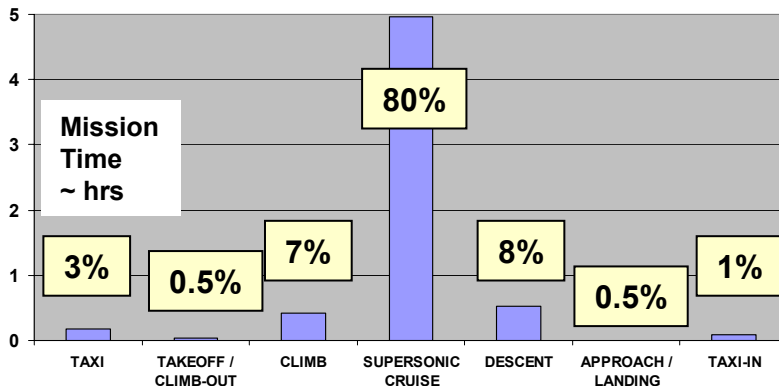
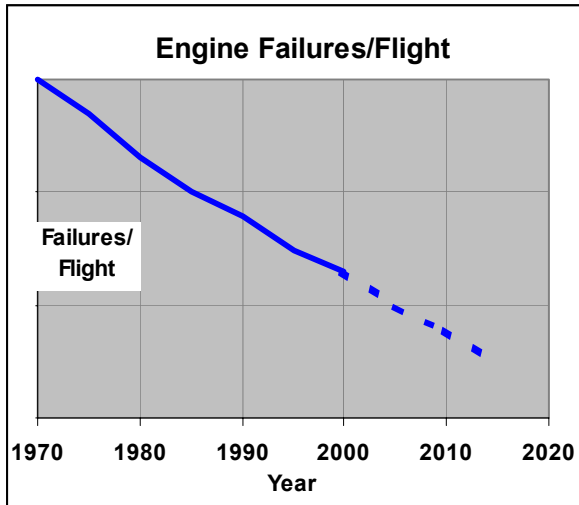
Acceptable Boom Definition



Technologies

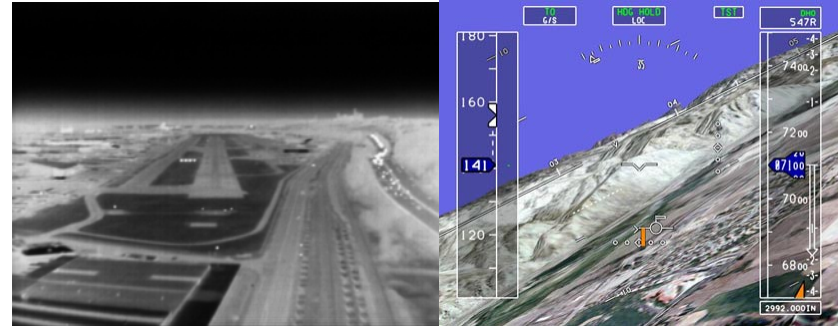
Propulsion

- Low Emissions
- High performance low noise inlet and exhaust design
- Rotor containment
- Time at temperature



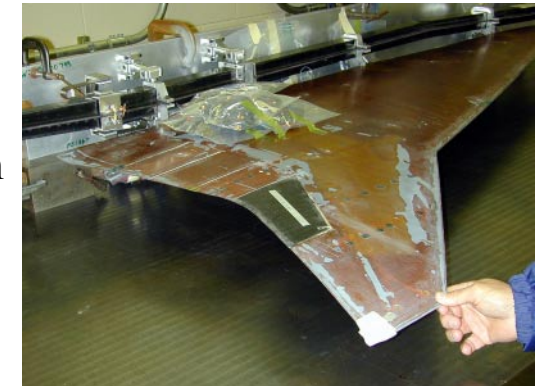
Flight Deck

- External/Synthetic/Enhanced Vision Systems



Aeroelastics

- CFD for Loads, Dynamics and S&C Analysis and Design
- Aerodynamic/Structural optimization of composite structure
- Active controls application for load alleviation



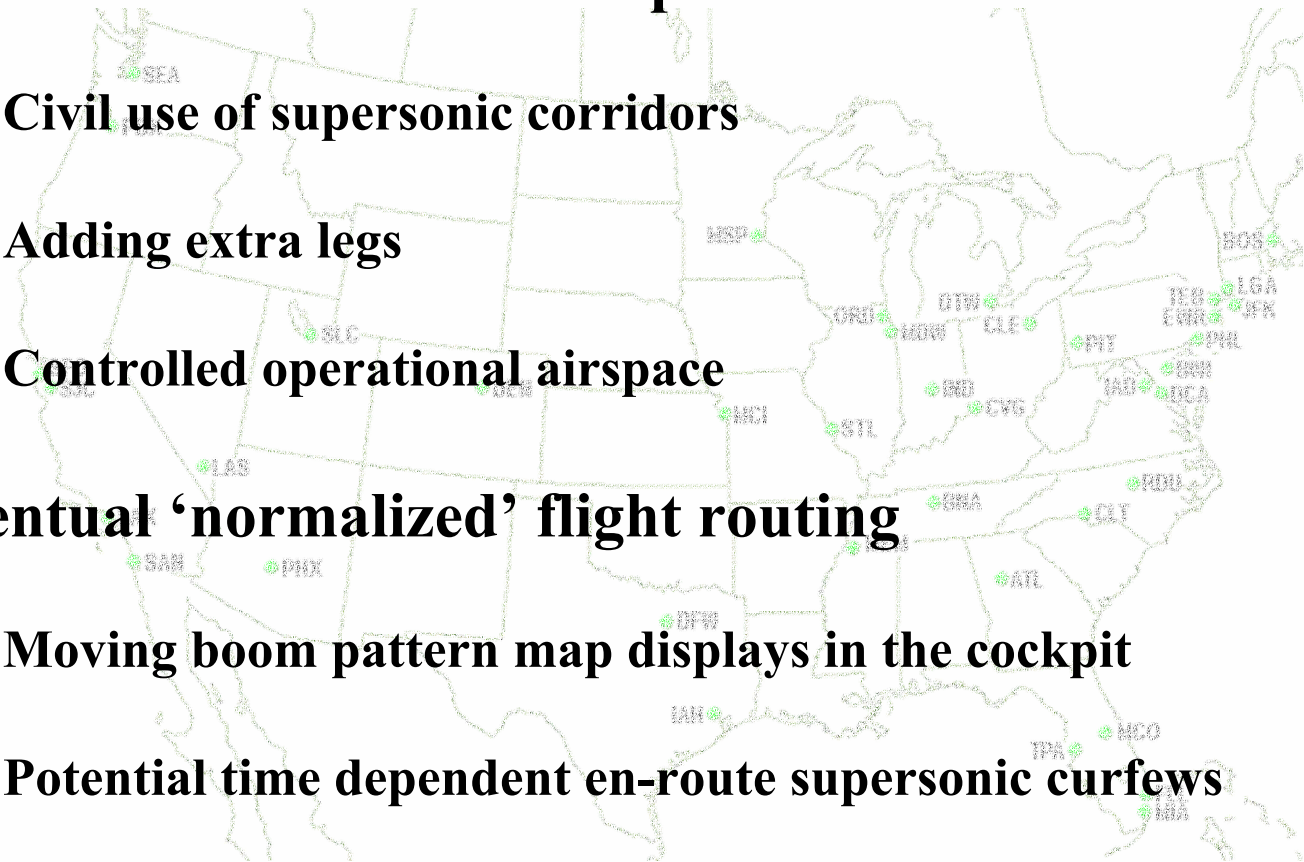
Incremental Introduction

- **Supersonic corridors concept**

- Civil use of supersonic corridors
- Adding extra legs
- Controlled operational airspace

- **Eventual ‘normalized’ flight routing**

- Moving boom pattern map displays in the cockpit
- Potential time dependent en-route supersonic curfews



Conclusions

- Fruitful area for Government funded research
- Establish clear value to global transportation system – “the value of time”
- Establishing acceptability criteria is key decision gate
- Government leadership to move forward on research required