

Impact of Engine Selection and Takeoff Procedures On Community Noise and Performance

April 21, 2016

NASA Langley Research center, Building 2101, Room 105 A&B

Recent studies for supersonic commercial aircraft indicate that meeting Chapter 14 noise regulations for takeoff will be difficult unless a combination of lower specific thrust engines and cutback procedures such as programmed lapse rate (PLR) can be implemented. The purpose of the workshop is to discuss the feasibility of relying on PLR for noise reduction and review the design trade space for various types of engines relative to noise and performance goals. Specific questions (listed below) will be posed to participants in preparation for the meeting. Short presentations will be given to kick off each discussion topic, followed by responses from selected industry panelists and open discussion with the audience.

8 AM - Introduction (Peter Coen)

Programmed Lapse Rate (PLR)

8:15 - Overview Presentation (Jeff Berton)

8:30 – Discussion (Participants can present charts or verbal comments)

- Can Chapter 14 noise regulations be met with sufficient margin to enable a supersonic commercial aircraft without PLR?
- How much throttle cutback is feasible for safe takeoff?

10:00 - Break

Engine Cycle

10:15 - Overview of NASA studies for noise and performance (Jon Seidel & Dennis Huff)

10:30 – Discussion (Participants can present charts or verbal comments)

- Can a low specific thrust engine meet all system level requirements for performance (range), low boom and community noise?
- What would be considered a reasonable trade for range and noise? (Current studies indicate 8 EPNdB reduction in takeoff jet noise for a 100 mile reduction in range).

Noon - Adjourn