

UC Davis Annual Symposium on Aviation Noise & Air Quality

March 1-4, 2009

Overview

- Conference Focus
 - 50% Aircraft Noise
 - 40% Air Quality
 - 10% Sustainability (Green Airports)
- “60’s” Theme
 - Revolution in Aviation

Supersonic Flight

- Civilian supersonic flight over US territory is banned
 - Current aircraft designs have a Sonic Boom has a 60 mile wide path
- Corporate aircraft looking into supersonic business jets
 - Sonic boom is a function of aircraft weight and speed, which gives business jets an advantage over larger commercial aircraft
 - Gulfstream has been looking into supersonic flight for over 25 years
 - Travel between 1.5 Mach to 1.8 Mach
- NASA Research
 - “Aircraft Shaping” has shown up to a 35 dBc(a) decrease in noise
 - Reduce “Sonic Boom” to “Sonic Puff”
 - Make no more noise than current subsonic aircraft

Presentations

- Part 150 - Noise & Land Use Compatibility Plan
 - Steve Alverson, ESA Airports
- Part 161 – Approval of Airport Access and Noise Restrictions
 - Ted Baldwin, HMMH
- National Environmental Policy Act (NEPA)
 - Rob Adams, Landrum & Brown
 - Federal Environmental Regulations
 - CAT-Ex = Categorical Exclusion
 - EA = Environmental Assessment
 - EIA = Environmental Impact Statement
 - FONIS – Finding of No Significant Impact

Presentations

- Virgin American Going Green
 - New A319/A320 aircraft, Full GPS/Next Gen Navigation
 - Single engine taxi operations
 - Minimal APU operation, get power at gate
 - Carbon brakes, less use of reverse thrust
 - 90% of food packaging is biodegradable
 - Headquarters within walking distance of BART Station
 - “At Home Call Center” – Allow people to work from home
 - Creature Comforts
 - Can select food from menu on in seat TV screen
 - Laptop and IPOD power at each seat

Presentations

- Pratt & Whitney “Geared Turbo Fan”
 - Ultra high bypass engine design
 - 12% to 15% fuel burn improvement
 - Co2 emissions reduced by 3000 tonnes per aircraft per year
 - 20 dB below current Stage 4 noise requirements
 - 77% reduction in noise footprint
 - If you turn engine off during approach, won't hear difference in noise
 - Tested on 747SP & A340 aircraft
- Pratt & Whitney Engine Washing
 - Reduces fuel burn up to 1.2%
 - Delay engine overhaul by 6 to 12 months

Presentations

- Burbank 161 Study
 - Transfer late night Burbank operations to Van Nuys and LAX
 - Close Burbank Airport at night
 - Economic study showed it is cheaper to transfer aircraft to other airport than to soundproof Burbank homes
 - FAA has given them lots of “Feedback”, but yet they continue with study
- New Sound Metrics
 - Supplemental metrics to DNL
 - NA Metric = Number of events above a defined noise threshold
 - TA Metric = Amount of time a noise event is above a defined noise threshold

Presentations

- Australia Noise Issues
 - 79% of noise complaints from outside 55 DNL
 - Use to have a small number of very loud aircraft, but now have large number of aircraft with a ***lower noise***, but over a ***greater period of time***