

Aircraft Noise Abatement

An overview

July 14, 2021

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Overview



What makes noise?

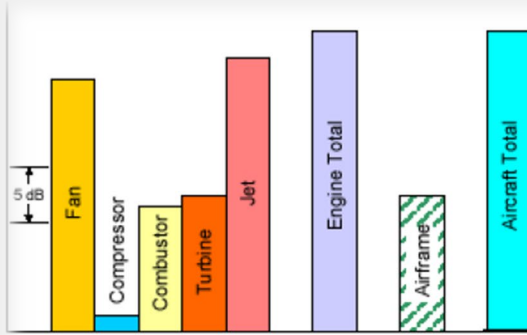


- Fan and Compressor
- Fan, Turbine and Combustor
- Jet Mixing
- Airframe

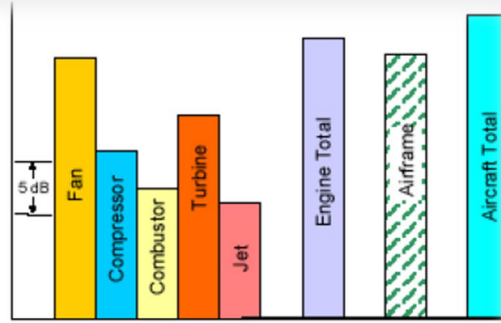


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Noise Share



Takeoff



Approach

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What makes noise increase/decrease?

Engine Thrust Level:

- More Power Increases noise
- Less Power Decreases noise

Airframe:

- Higher Airspeed Increases noise
- Lower Airspeed Decreases noise

Height above Ground

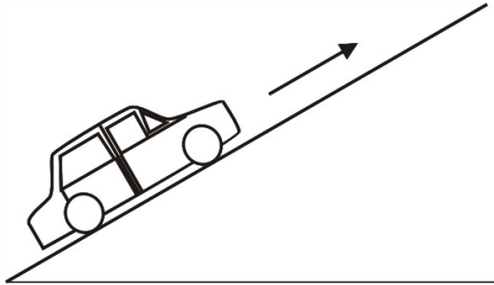
Lateral Displacement

Weather/Wind

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Engine



Higher

Does not
always equal

Quieter



Airframe





Airline

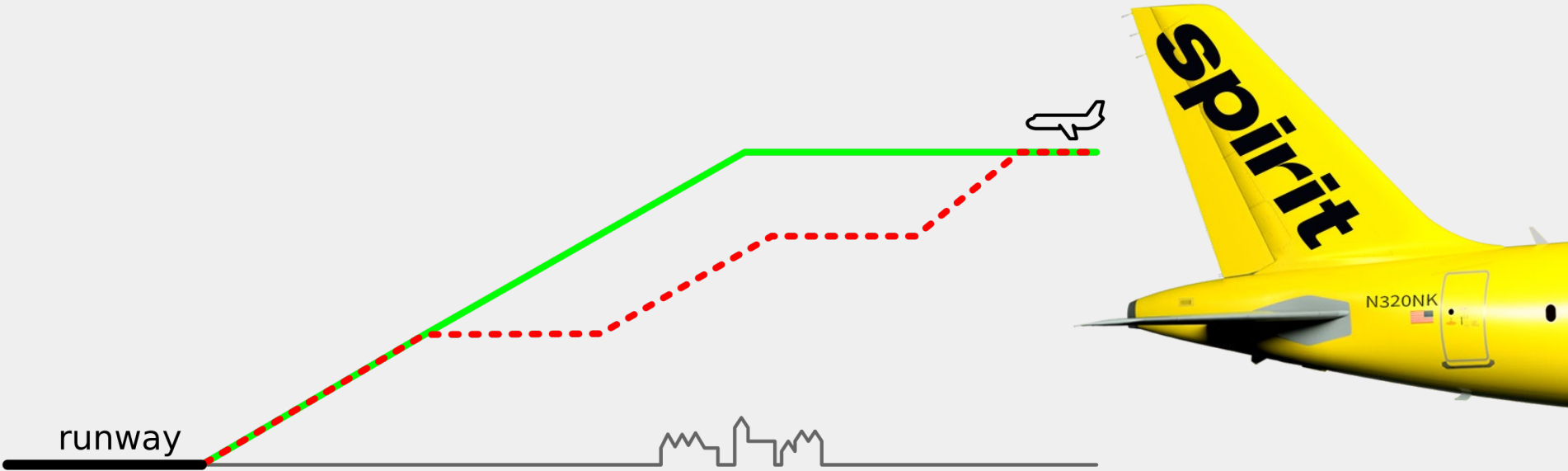
Actions

Continuous Descent Approach





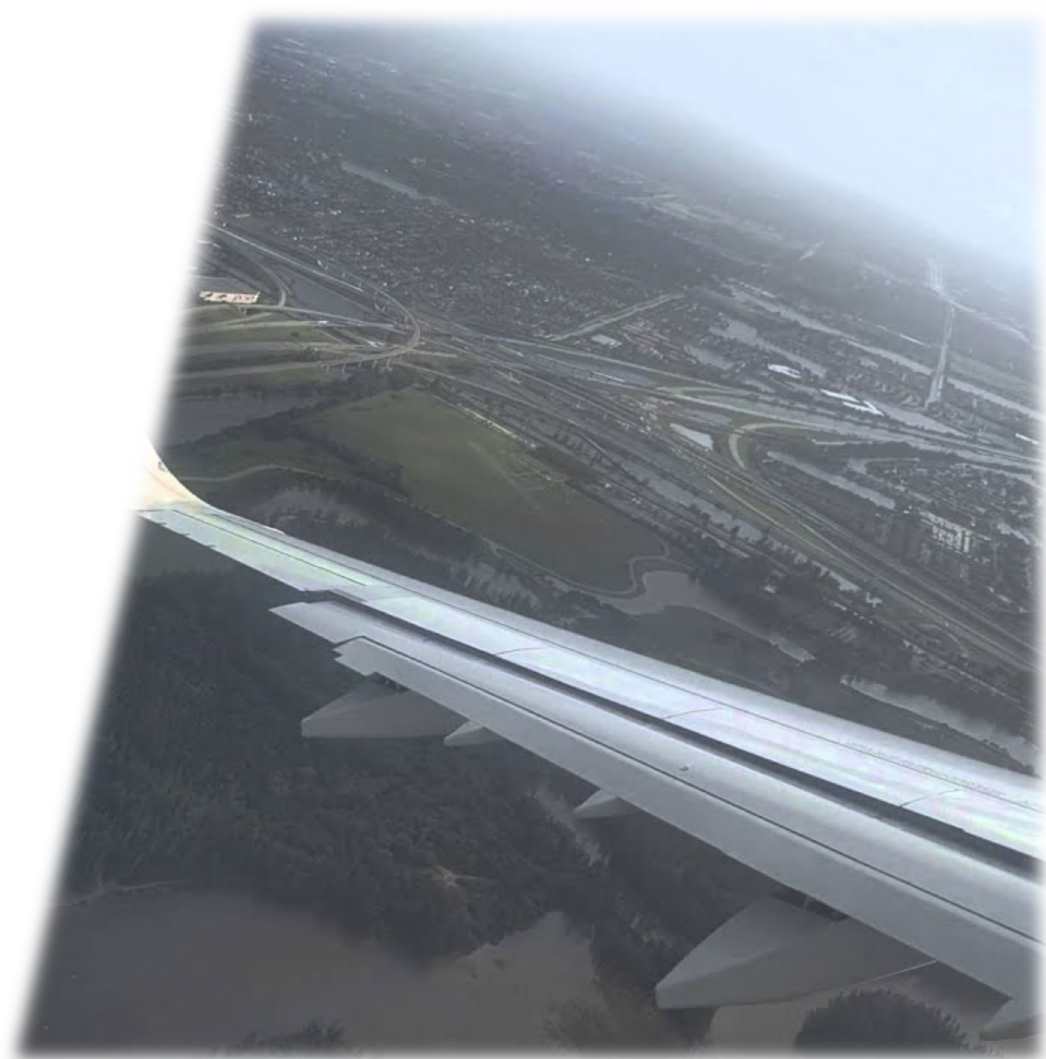
Continuous Descent Approach

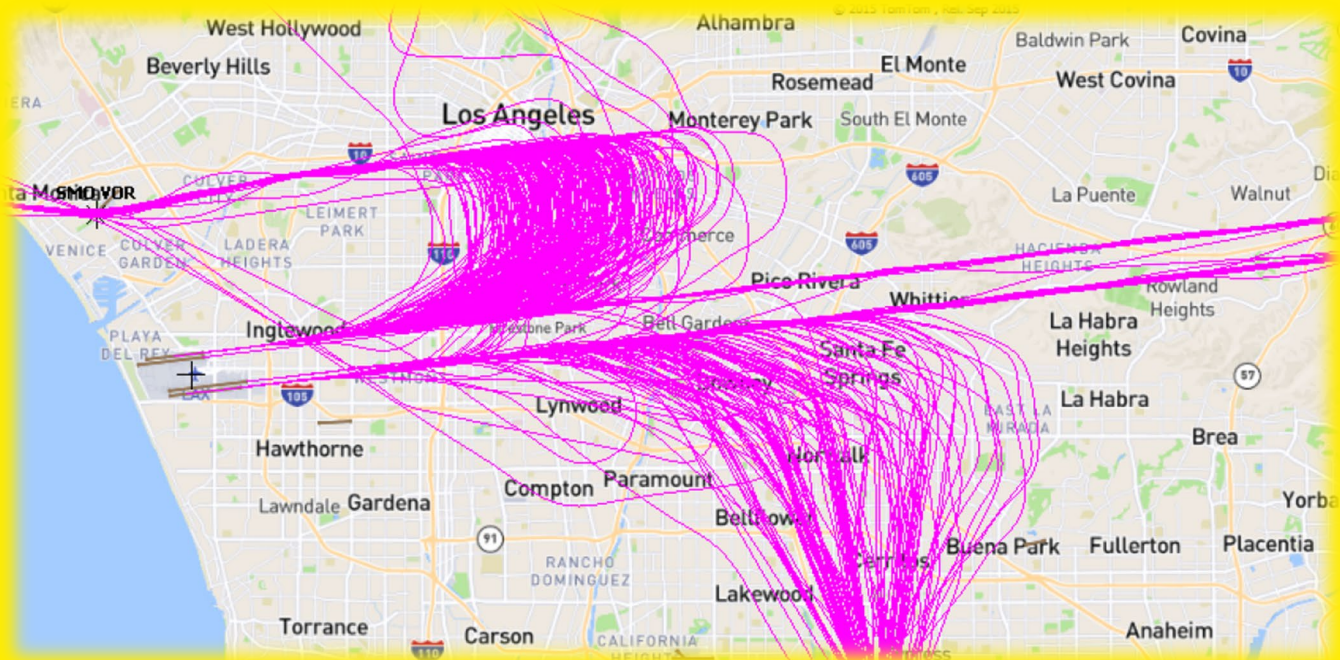




Drag Devices

Flaps: At minimum certified flap setting landings (when not limited by performance requirements), can reduce close-in noise by up to 4 dB(A)







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Actions



Fleet Upgrades

neo (New Engine Option)

- All new aircraft to Spirit are A319neo, A320neo, or A321neo
- 20% less fuel
- Near 50% reduction in noise footprint

Source: Airbus



▶▶▶ Noise Abatement Takeoff

“Spirit standard takeoff, climb and approach procedures were developed to provide noise abatement while ensuring acceptable aircraft performance.”

“Company policy is to comply with noise abatement policies and procedures to the fullest extent possible, consistent with the safe operation of the aircraft.”



Optimized Energy Management Approach



Technique to fly approaches in today's heavily speed-controlled environment, while still achieving maximized operational efficiency.



Continues on the constant descent profile philosophy.





Vortex Generators

Reduces noise (up to 6 dB(A)) from wind noise over fuel vents on underside of wing.

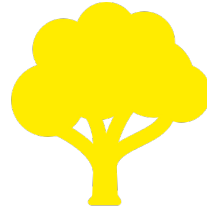




Sound Programs



Los Angeles



Seattle



Orange County



LAX Fly Quieter

- Provides Feedback
- Communication to crews for path improvement





LAS Noise

- Procedure change due to Metroplex Implementation
- Focuses on specific departures from runway 19L/R
- Daily, immediate feedback 24 hours





Q & A



»»» Contact

Carl Stallone
Spirit Airlines
Base Chief Pilot – LAS
Carl.Stallone@Spirit.com



[Thank You]

