LAX Community Noise Roundtable

Aviation Noise News Update

July 9, 2014

Wake Turbulence Recategorization

- **On June 1, 2014, FAA published Order 7110.659A which provides guidance on the implementation and use of Wake Turbulence Recategorization (Recat) procedures and separation minimums**

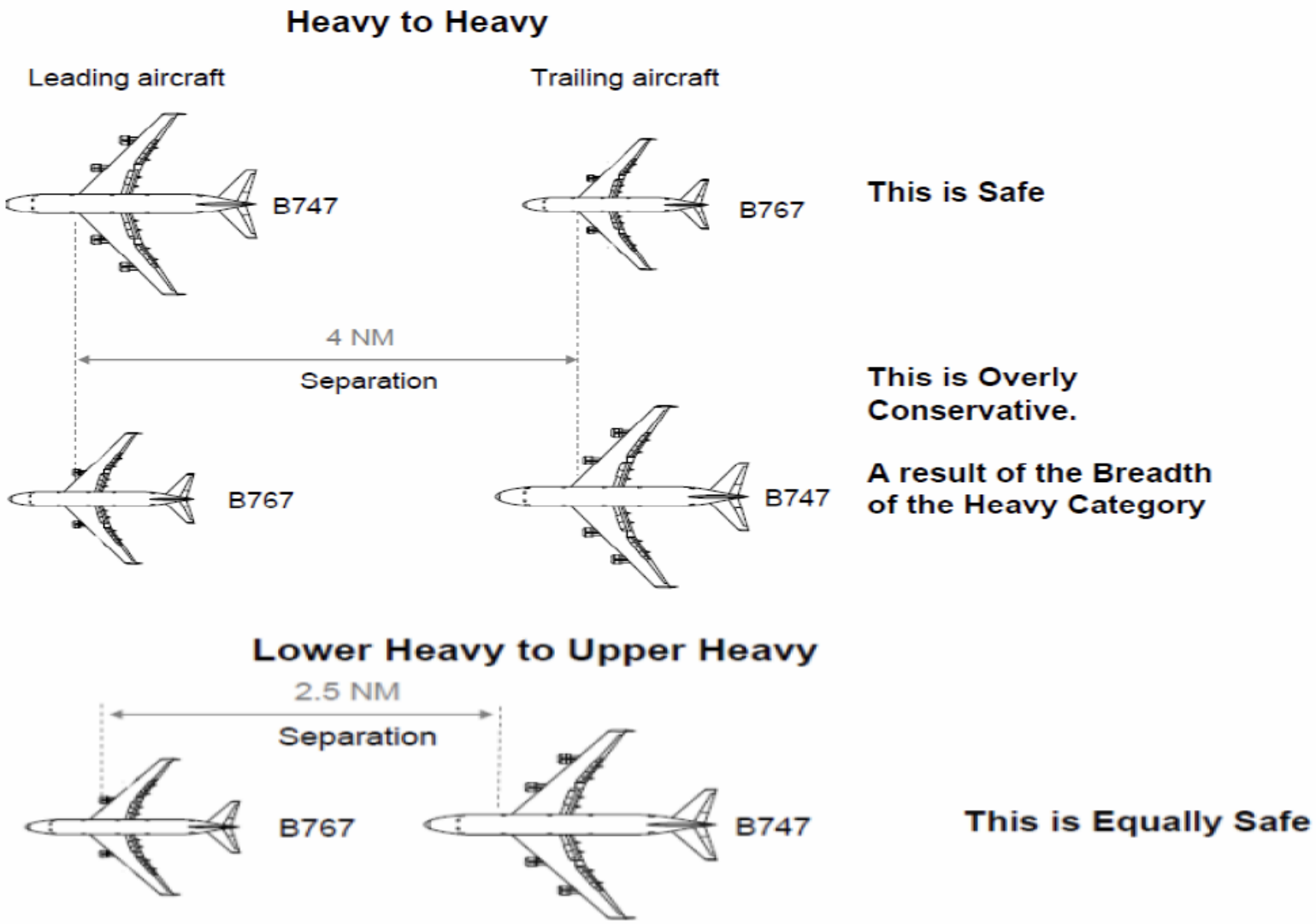
- **FAA currently classifies aircraft for wake turbulence purposes based on maximum certified takeoff weight, which results in three weight classes:**
  - **heavy,**
  - **large, and**
  - **small**

- **This classification results in greater-than-necessary separation distances, particularly for the "heavy" aircraft weight class**

http://www.faa.gov/documentLibrary/media/Order/7110.659A.pdf

Wake Turbulence Recategorization

Table 3: Example RECAT Wake Separation



Source: FAA Safety Alert for Operators 12007 – 10/18/12

Wake Turbulence Recategorization

- **The Recat program classifies aircraft according to:**
  - **wingspan,**
  - **the aircraft's ability to withstand a wake encounter, as well as**
  - **its certified takeoff weight**
- **This new method will create six new categories of aircraft for wake turbulence separation purposes:**
  - **A, B, C, D, E, and F**
- **The Recat program is intended to safely reduce the distance between arriving and departing aircraft, which will increase airport capacity while reducing arrival and departure delays**

http://www.faa.gov/documentLibrary/media/Order/7110.659A.pdf

Wake Turbulence Recategorization

Table 4: Example Aircraft Assignment to Proposed Six Category System

Category A	Category B	Category C	Category D	Category E	Category F
A380	B747 series	MD11	B757 series	AT72	E120
AN-225	A340 series	B763	B737 series	RJ100	B190
	B777 series	A306	A320 series	RJ85	C650
	A330 series	C-17	B727 series	B463	H25B
	C-5		MD80 series	B462	C525
			F50	E170	
			E190	CRJ1/2	
			B717	CRJ7/9	
			GLF5	AT45	
			DC95	AT43	
			DC93	GLF4	
			DH8D	SF34	
			F100	DH8A/B/C	
			F70	E135/145	

Source: FAA Safety Alert for Operators 12007 – 10/18/12

Issues and Needs in Aviation Noise Research

- **The Environmental Impacts of Aviation Committee of the Transportation Research Board (TRB) recently stated that more research into the effects of aircraft noise on annoyance, sleep, and health is needed**
- **The Committee noted that the following issues are attracting attention among industry stakeholders:**
  - **The effect of NextGen on noise abatement flight paths currently in place**
  - **The "open rotor" concept, its fuel savings capabilities, and associated noise levels**
  - **Growth in use of unmanned aircraft and the potential noise impacts**
  - **New technology that can reduce noise and annoyance caused by sonic booms**

(Noise Regulation Report Vol. 41, No. 5 May, 2014)

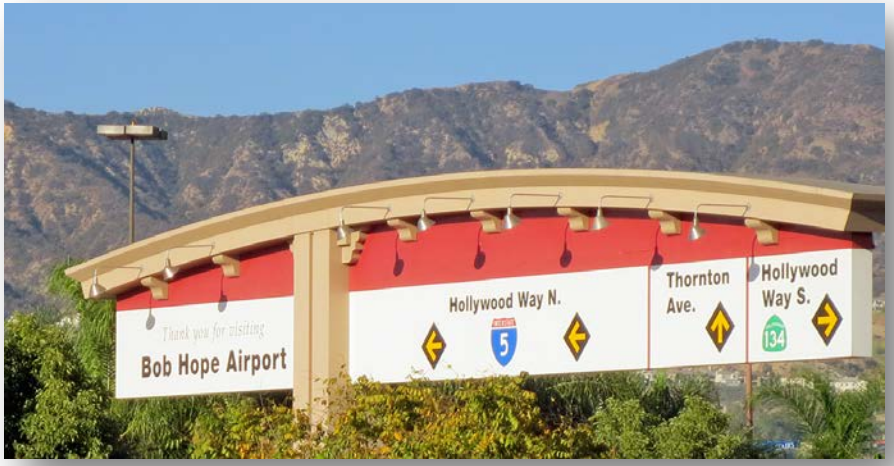
Issues and Needs in Aviation Noise Research

- **Committee members identified the need for research to:**
  - **Assess whether a correlation exists between aircraft noise and health effects, including behavior effects, particularly on children and other vulnerable populations**
  - **Quantify potential noise impacts on sleep and health**
  - **Develop experimental data to support open rotor noise model development and validation**
  - **Define the levels of noise exposure at which health effects begin to occur**
  - **Develop better capabilities to characterize, model, and quantify human response to helicopter noise**

(Noise Regulation Report Vol. 41, No. 5 May, 2014)

House Nixes Amendment for Bob Hope Airport Curfew

- **The U.S. House of Representatives narrowly defeated (208-212 votes) an amendment to the Transportation, Housing, and Urban Development Appropriations Act that would have required a mandatory curfew for Bob Hope Airport**
- **Bob Hope Airport currently operates a voluntary curfew from 10 p.m. to 7 a.m.; however, some cargo carriers do operate before 7 a.m. in order to meet scheduled delivery times**
- **The issue was previously voted on in 2011, when it was defeated by a 178-243 vote**



http://www.burbankleader.com/news/tn-blr-house-nixes-airport-curfew-bill-20140610,0,5253243.story

The Future of Sustainable Air Travel

- **Airbus debuted a fully electric airplane at the Berlin Air Show in May 2014**
- **The "E-Fan" is propelled by two 30-kilowatt electric motors, which are powered by a series of lithium-ion batteries fitted into the plane's wings, and can fly for approximately one hour**
- **According to Airbus, the "E-Fan" produces zero emissions and noise**

(Photo Credit: Olivier Pascaud/Airbus)

http://www.salon.com/2014/05/27/this_silent_zero_emissions_electric_plane_could_be_the_future_of_sustainable_air_travel/

The Future of Sustainable Air Travel

- **Airbus' ultimate goal is to make a 70- to 80-person hybrid electric commuter jet with three hours of range by 2050**

- **These advances are intended to meet the European Union's aggressive goal of reducing the aviation sector's nitrous oxide emissions by 90 percent, carbon dioxide emissions by 75 percent by 2050, and noise pollution by 65 percent**

- **"It's a very different way of flying," said Jean Botti, Airbus Group's chief technical and innovation officer, "absolutely no noise, no emissions."**

http://www.salon.com/2014/05/27/this_silent_zero_emissions_electric_plane_could_be_the_future_of_sustainable_air_travel/

Airlines Phase Out 747s

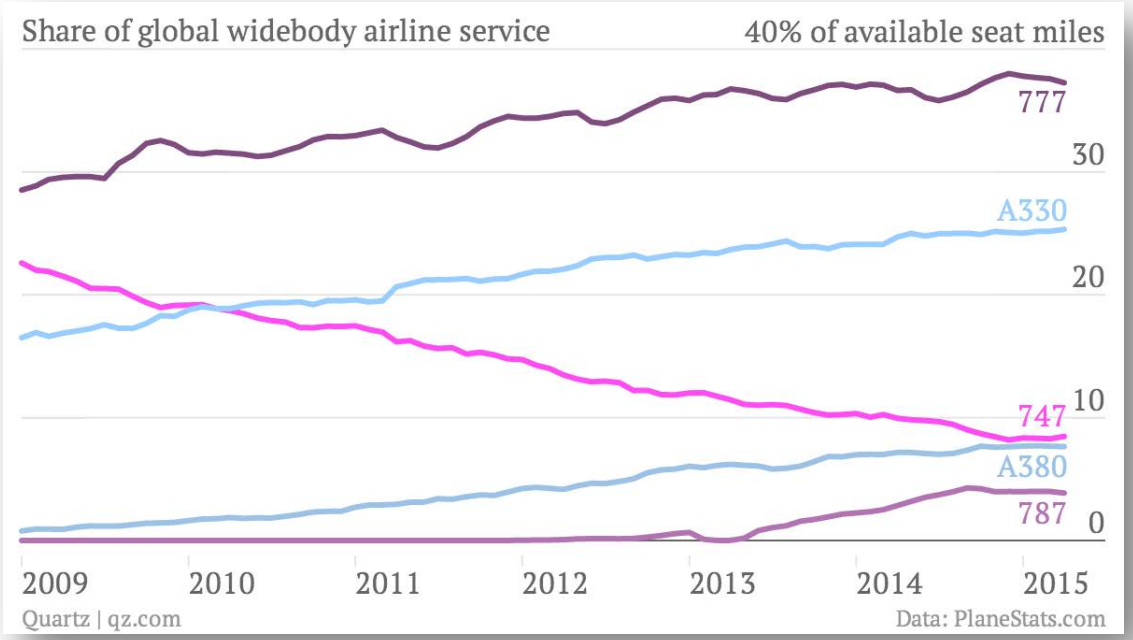
- **Recent market studies indicate that airlines are increasingly using newer, twin-engine aircraft over Boeing 747s**
- **Despite overall growth in air travel, the 747s share of available seat miles—a measure of total capacity and mileage on scheduled passenger flights—among similarly sized aircraft is expected to fall to 14.1 percentage points by April 2015 from 2009 levels**

(Photo Credit: AP Photo/Michael Probst

http://qz.com/217727/boeing-747-airplane-is-going-extinct/

Airlines Phase Out 747s

- **Because of lower demand from airlines, Boeing's production of 747s has dropped to a rate of 1.5 planes per month through 2015**
- **Reasons for the decline in use of the 747 include:**
  - **Efficiency issues**
  - **Environmental advances in newer aircraft**
  - **Changing market demands**



http://qz.com/217727/boeing-747-airplane-is-going-extinct/

Upcoming Wave of Aircraft Retirements

- **It is estimated that aircraft retirements will reach 1,000 aircraft a year within the next decade, and 41 percent of today's fleet will leave service in the next 20 years**
- **The rapid increase in aircraft reaching the end of their service term is the combined result of:**
  - **Demographics (aircraft reaching the end of their economic life)**
  - **Low interest rates**
  - **High fuel prices and,**
  - **The introduction of newer, more efficient aircraft models**

http://www.aviationpros.com/news/11527641/aircraft-retirement-tsunami-1000-aircraft-a-year-to-leave-service-by-2023?utm_source=AIRB+E-Newsletter&utm_medium=email&utm_campaign=AVVDB140613004