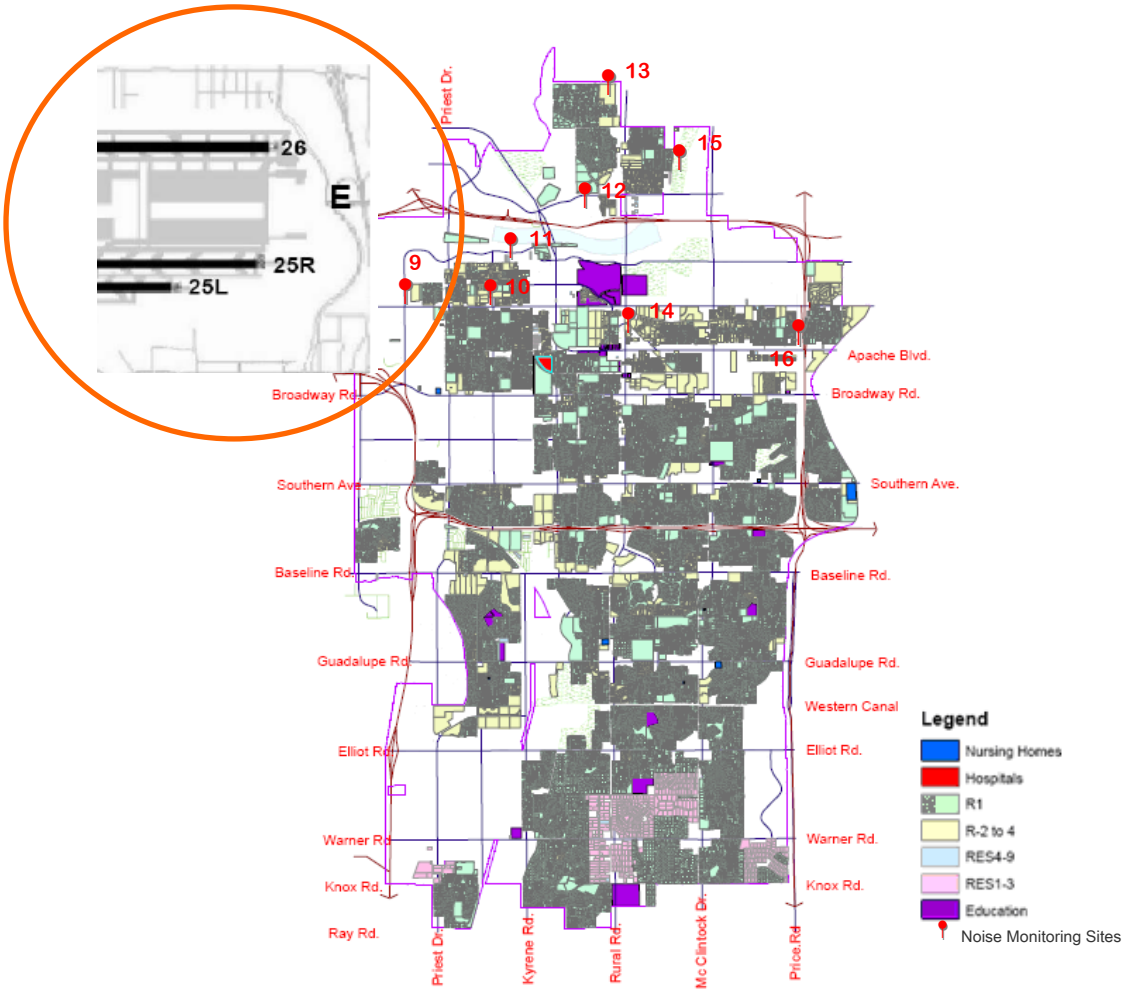
Tempe

2011 4th Quarterly Noise Monitoring Report

PHX East



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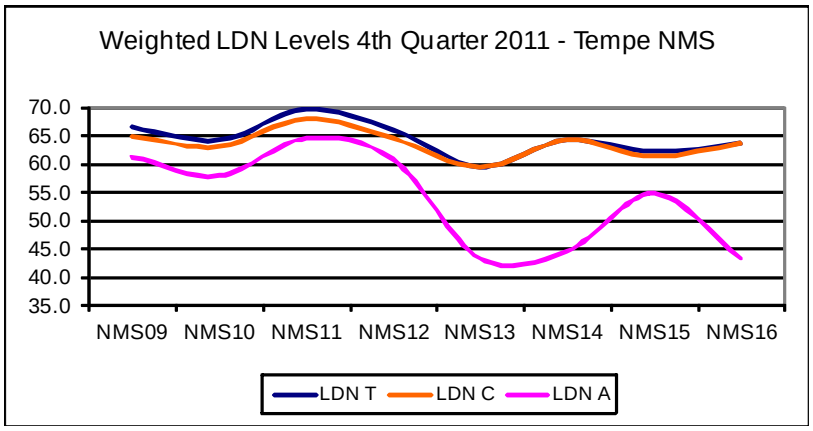
Aviation Noise Monitoring

The Phoenix Sky Harbor International Airport Noise and Flight Track Monitoring System (NFTMS) has 8 fixed Noise Monitoring Sites (NMS) in Tempe located in neighborhoods around the Town Lake/ Rio Salado area in proximity of the 65 DNL noise exposure contour line for the airport. Through an agreement made with the City of Phoenix the City of Tempe can access noise monitoring data collected by the system and use supporting software that filters the data to indentify the noise energy contributions attributed to aircraft operations over areas the monitors are located.

A. Weighted Sound Exposure Levels

Average monthly sound exposure levels of aircraft events, are calculated from the Ldn or day-night average sound level also called DNL. This is a summary description of noise based on long-term equivalent level (Leq) with a penalty of 10 dB (A) added for nighttime sound occurring between 22.00-07.00 hours. Average sound levels created by aircraft, Ldn A, are a product of detection tools built in to the NFTMS, which separate events registered at the monitoring site. The ambient sound events from sources picked up at a monitoring site, the Ldn C and events attributed to an aircraft over flight, the Ldn A. Ldn T is an expression of the total sound.



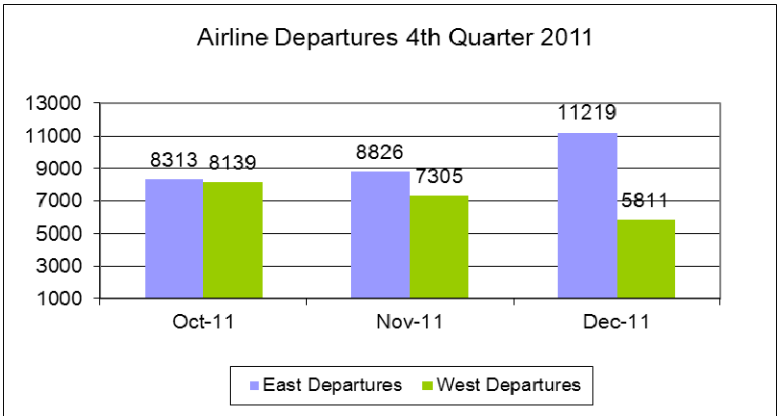
Ldn A decreases with the distance to the airport's runways. Except for site 9 all site failed to register minimum values, and the monitors showed exceptionally high standard deviations, or scatter around the average (mean) Ldn (A) values.

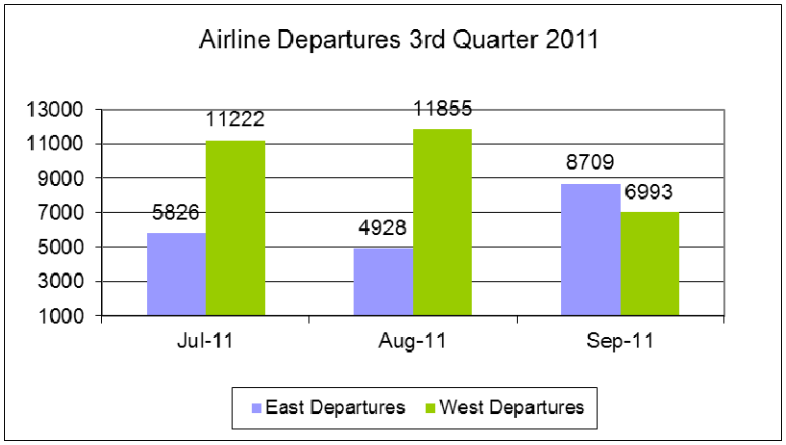
B. East – West Equalization of Noise Burden

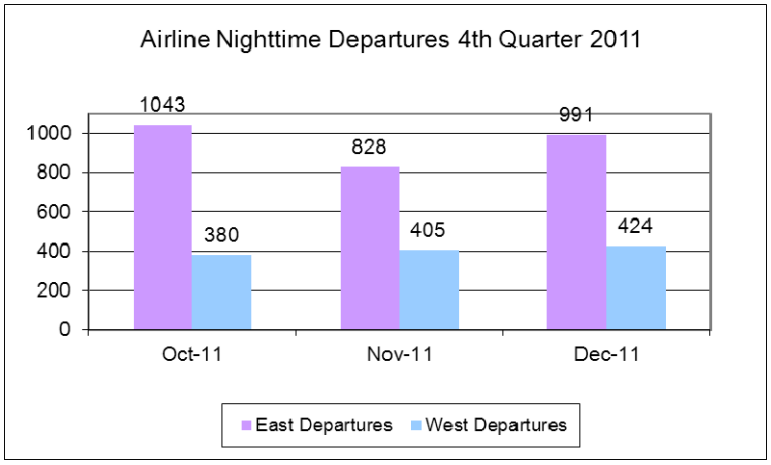
The airport Air Traffic Control Tower is directing large carrier departure traffic with the goal of accomplishing a 50/50 annualized east west split. A procedure for noise mitigation over Tempe delay air carrier turns away from the Salt River to the airspace over the Highway 202/ 101 intersection. There is no similar constraint for departure headings towards the west.

Departure flow east and west are determined over the year by daily and seasonal changes in wind directions, and the cities of Tempe and Phoenix has agreed that airport should attempt to distribute the noise burden from departing large commercial aircraft equally east and west on an annual basis.

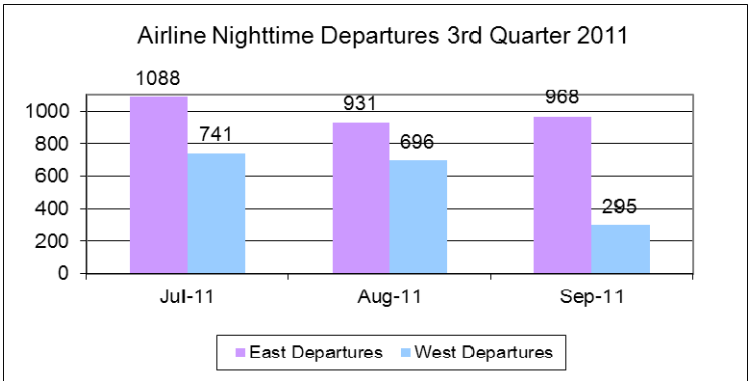
Commercial air carrier and corporate jet departures were heavily concentrated towards the west during the first two moth of the third quarter similar to the second quarter, but the flow turned with a majority going towards the east during the third quarter. The trend continued in the fourth quarter amounting to an overall increase in east departures by 18.6% and a decrease in west departures by 17.2% compared to the third quarter.



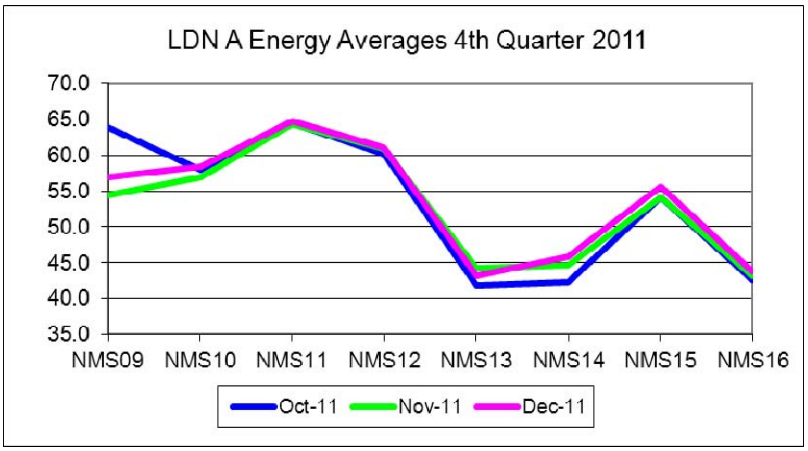




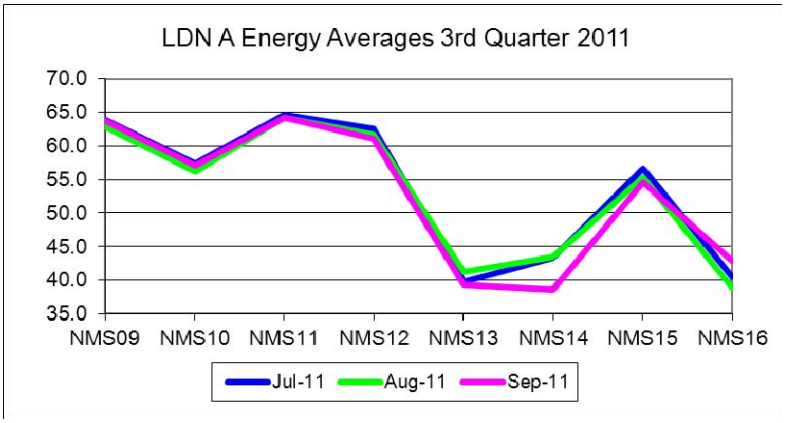
Departures occurring between 10:00 p.m. to 7:00 a.m. decreased towards the west with 17.8% from the 3rd quarter, with even more of the night time departures going east during the 4th quarter.



The average monthly Ldn A sound energy levels returned to levels registered during the first quarter of 2011.

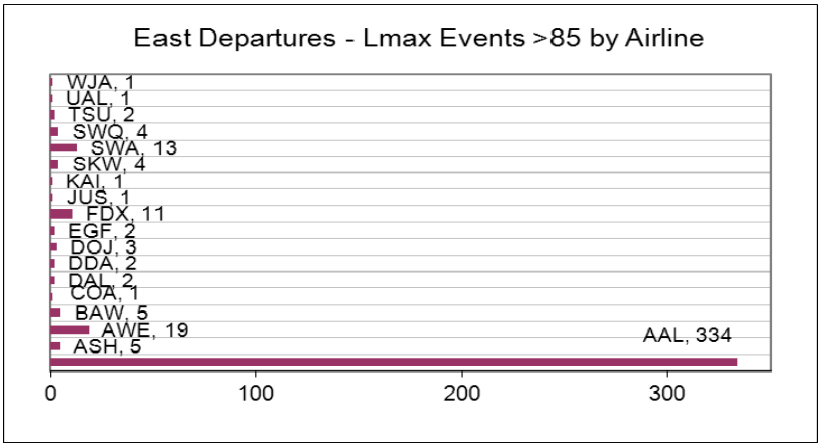


NMS 9 showed unusually low quarterly Ldn A minimum levels for the first two months of the quarter. The trend from last quarter continued with monitoring sites in the periphery of the runways registering higher average Ldn A levels than the previous quarter.

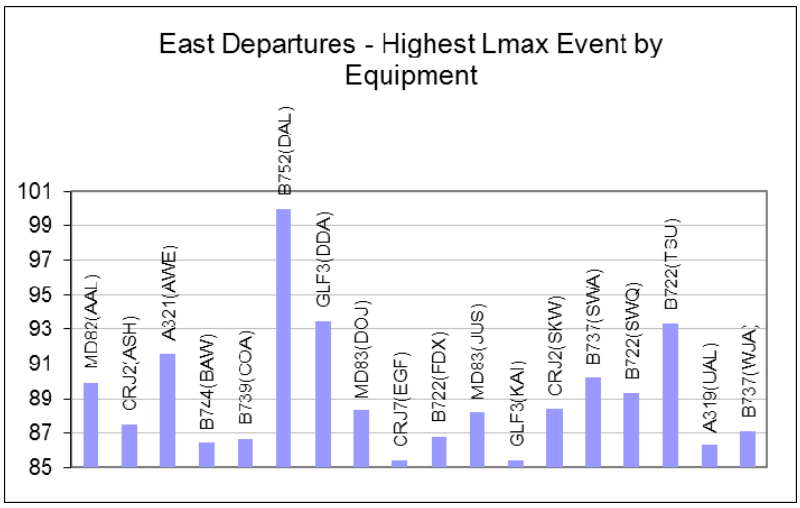


C. Registered Maximum Sound Energy Levels

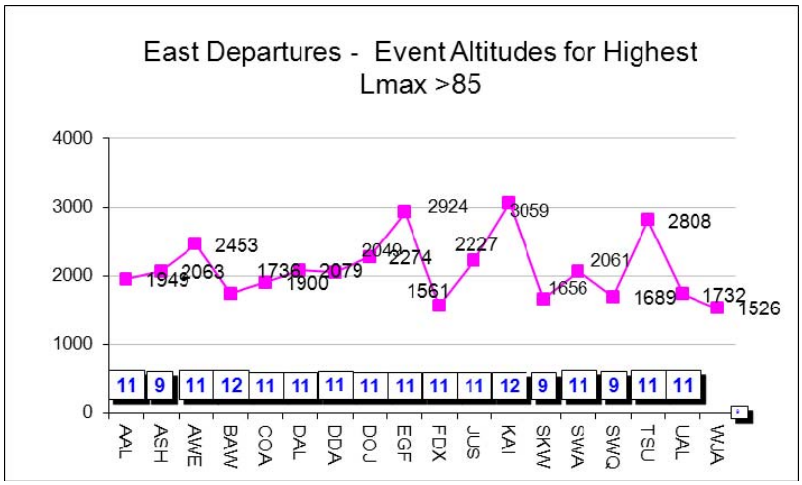
The number of higher sound energy level events attributed to airline operations varies each month, which influences monthly Ldn average levels. Lmax is the maximum A- weighted sound level, dB (A) registered during a particular sound event. A-weighted means the sound is measured at frequencies that reflect the sensitivity ranges of the human ear.



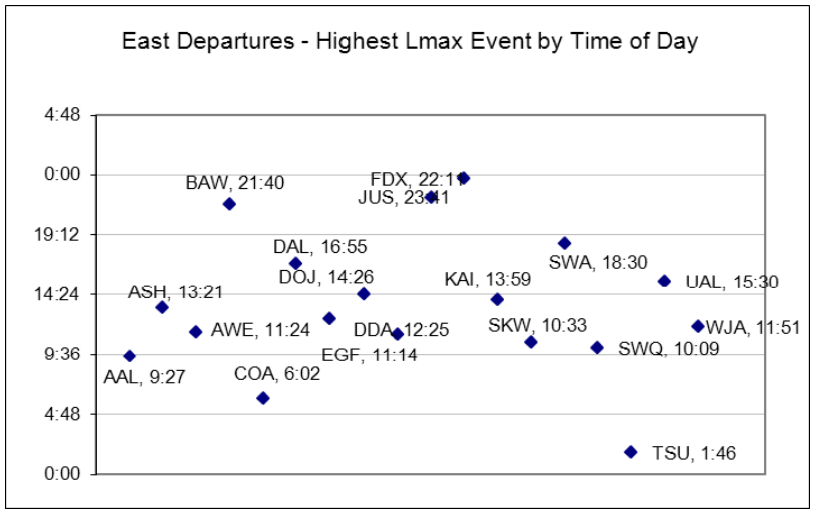
American Airlines had the most registrations of high Lmax levels. The chart displays events correlated to radar track data in the fourth quarter of 2011.



A B757 from Delta Airlines created the highest Lmax level among civil aircraft departing towards the east. It produced Lmax 100 dB (A) over the Tempe Beech Park.



The highest Lmax at lower altitudes were reached by a Fed Ex B722, and a WestJet B737.



Information about the NFTMS and the City of Tempe agreement with the City of Tempe are available at www.tempe.gov/aircraftnoise