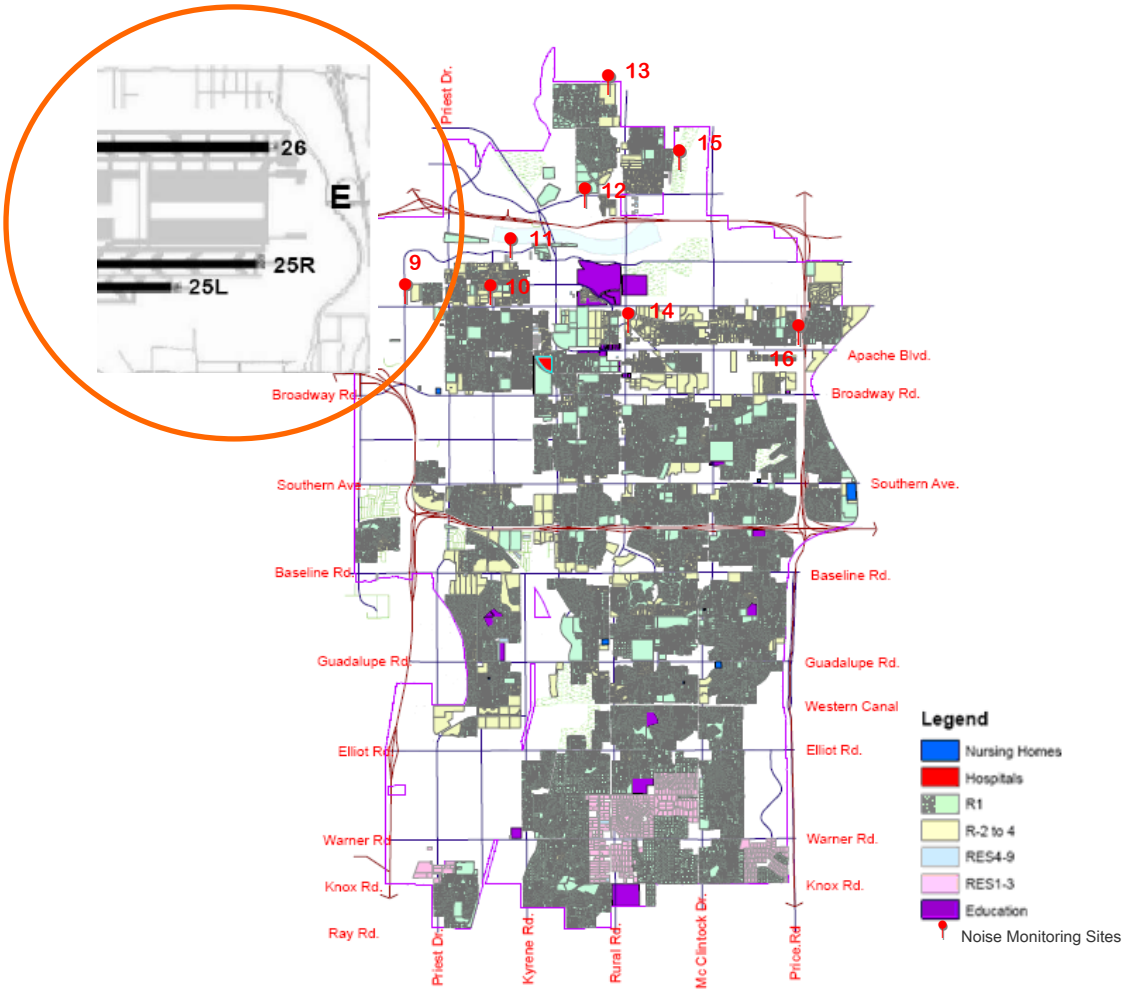
Tempe

2014 1st Quarter Noise Monitoring Report

PHX East



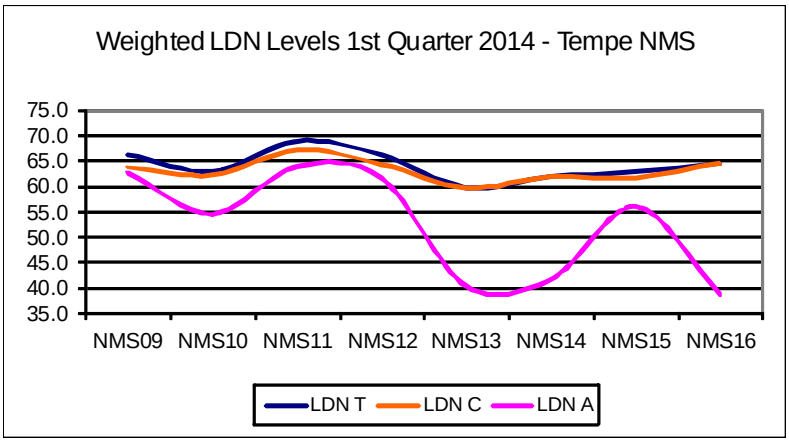
Contents

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 where 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 Day Night Level (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 all sources picked up at a monitoring site other than from aviation is the Ldn C. The sound events the NFTMS attributes to aircraft sound is the Ldn A. Ldn T is an expression of the total sound from all sources including aircraft noise.



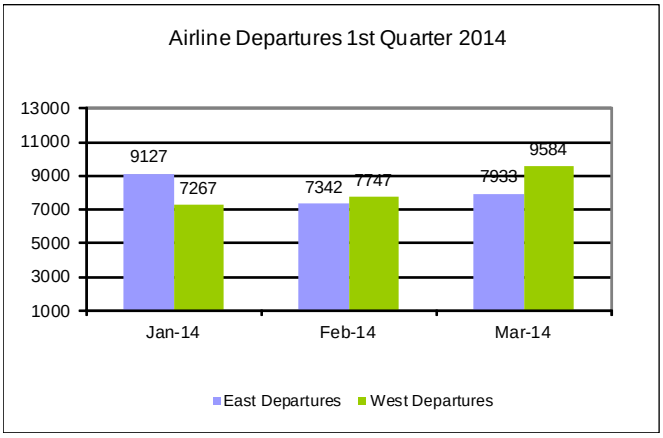
Ldn A decreases with the distance to the airport's runways. The monitored standard deviations are naturally higher for the monitors located at sites in Tempe located outside the downtown area where the distances to the aircraft are greater and noise from other sources than aircraft operations makes noise source attribution more complicated.

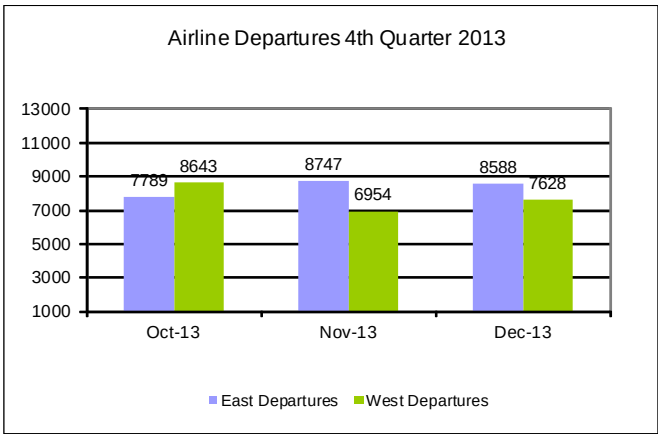
B. East – West Equalization of Noise Burden

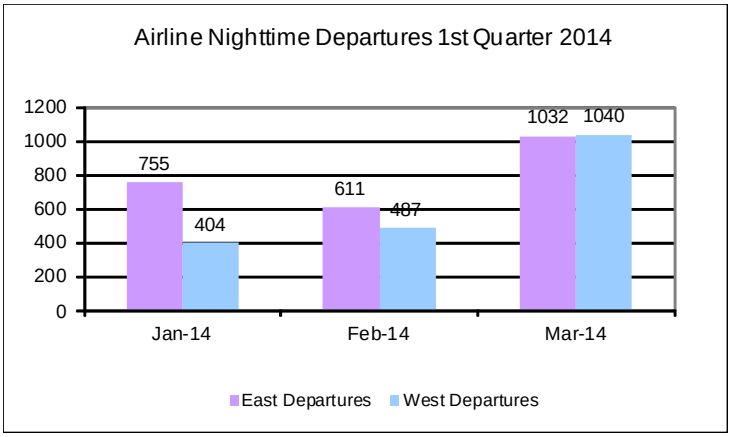
The airport Air Traffic Control Tower is directing large carrier departure traffic with the goal of accomplishing a 50/50 annualized east west split. A procedure for noise mitigation over Tempe delay air carrier turns away from the Salt River to the airspace over the Highway 202/ 101 intersection.

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 have agreed that airport should attempt to distribute the noise burden from departing large commercial aircraft equally east and west on an annual basis including both day-and nighttime operations.

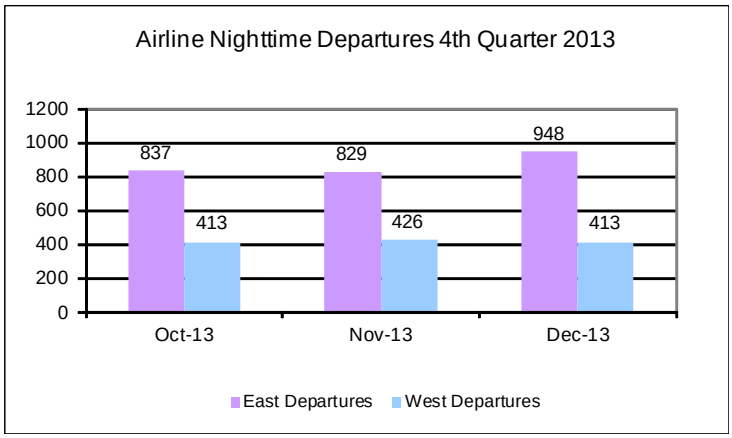
The flow of commercial air carrier and corporate jet departures went more in easterly directions the first quarter of 2014 compared to the last quarter of 2013. West daytime departures decreased by 1.5% and total departures increased 2.9% compared to the fourth quarter of 2014.



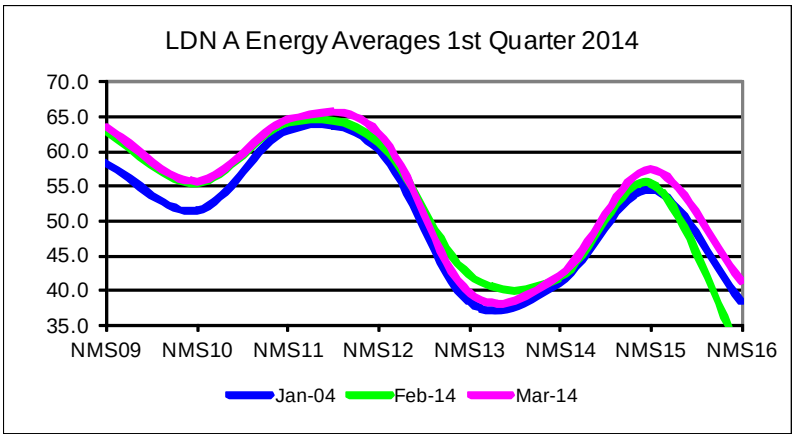


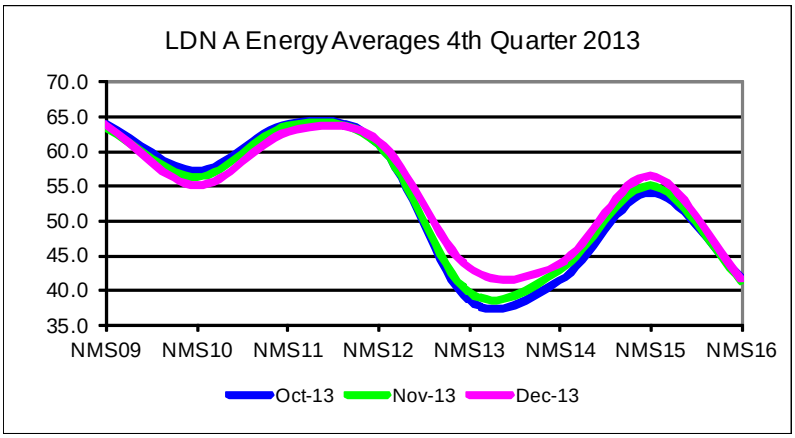


Night time departures occurring between 10:00 p.m. to 7:00 a.m. decreased towards the east with 4.3% and increased towards the west by 21.3% compared to last quarter of 2013. This was mainly due to weather and wind directions during the month of March 2014.



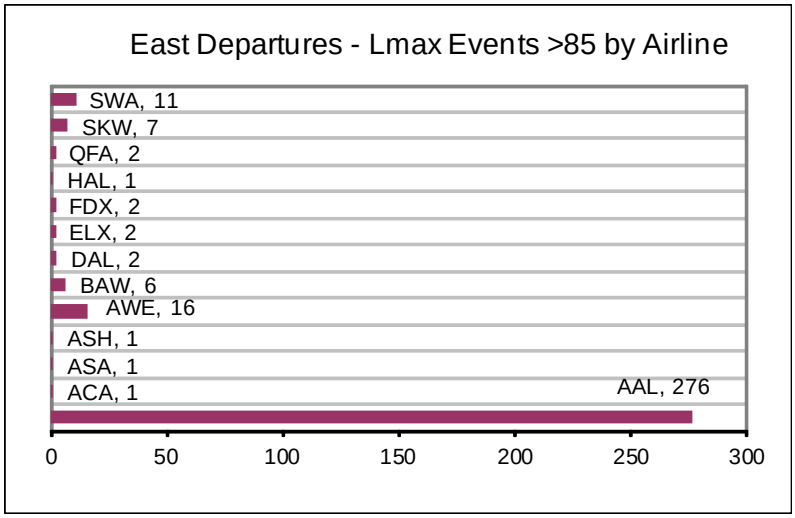
Higher number of night time operations during the month of March 2014 contributed to higher averages registered at Tempe Beech Park and at Weber Drive north of the riverbed.





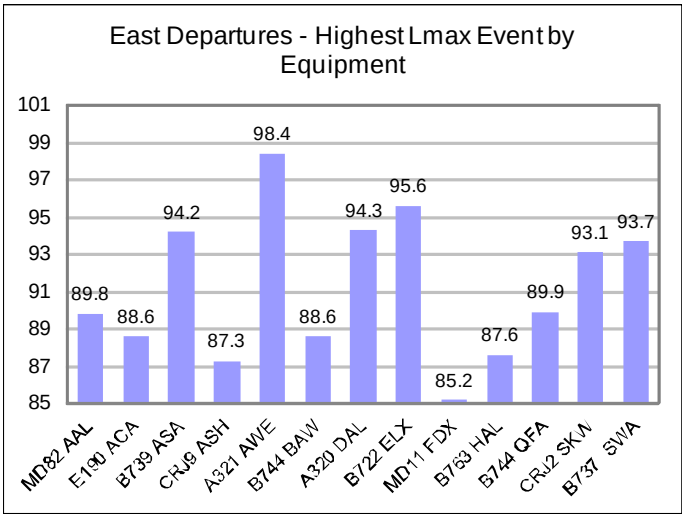
C. Registered Maximum Sound Energy Levels

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.

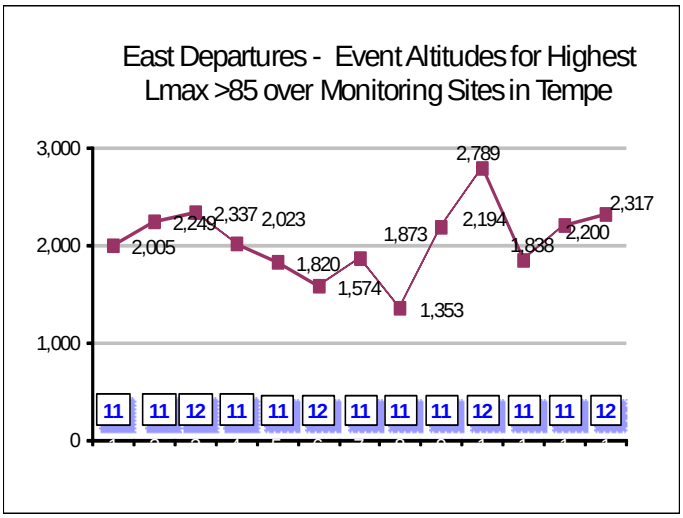


American Airlines has the most registrations of high Lmax levels over Tempe.

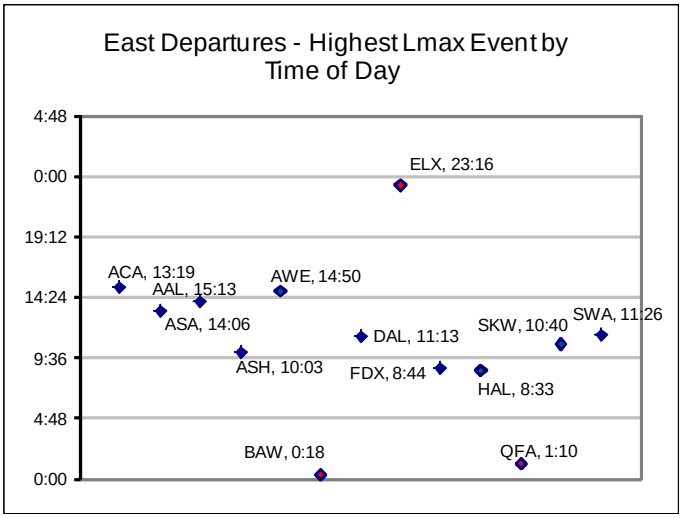
SWA: Southwest
SKW: Sky West
QFA: Qantas
HAL: Hawaiian
FDX: FedEx
ELX: Elan Express
DAL: Delta
BAW: British Airways
AWE: US Airways
ASH: Mesa Airlines
ASA: Alaska
ACA: Air Canada
AAL: American



The highest event registered by a non-military aircraft during the first quarter was registered to 98.4 dB A, (Lmax) by an American (US Airlines) A321 over the monitor at Tempe Beech Park.



The highest Lmax at the lowest altitude was reached by a British Airways B744 over the monitor at Curry Road.



Highest nighttime evens over 85 dB A Lmax are depicted in red.

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