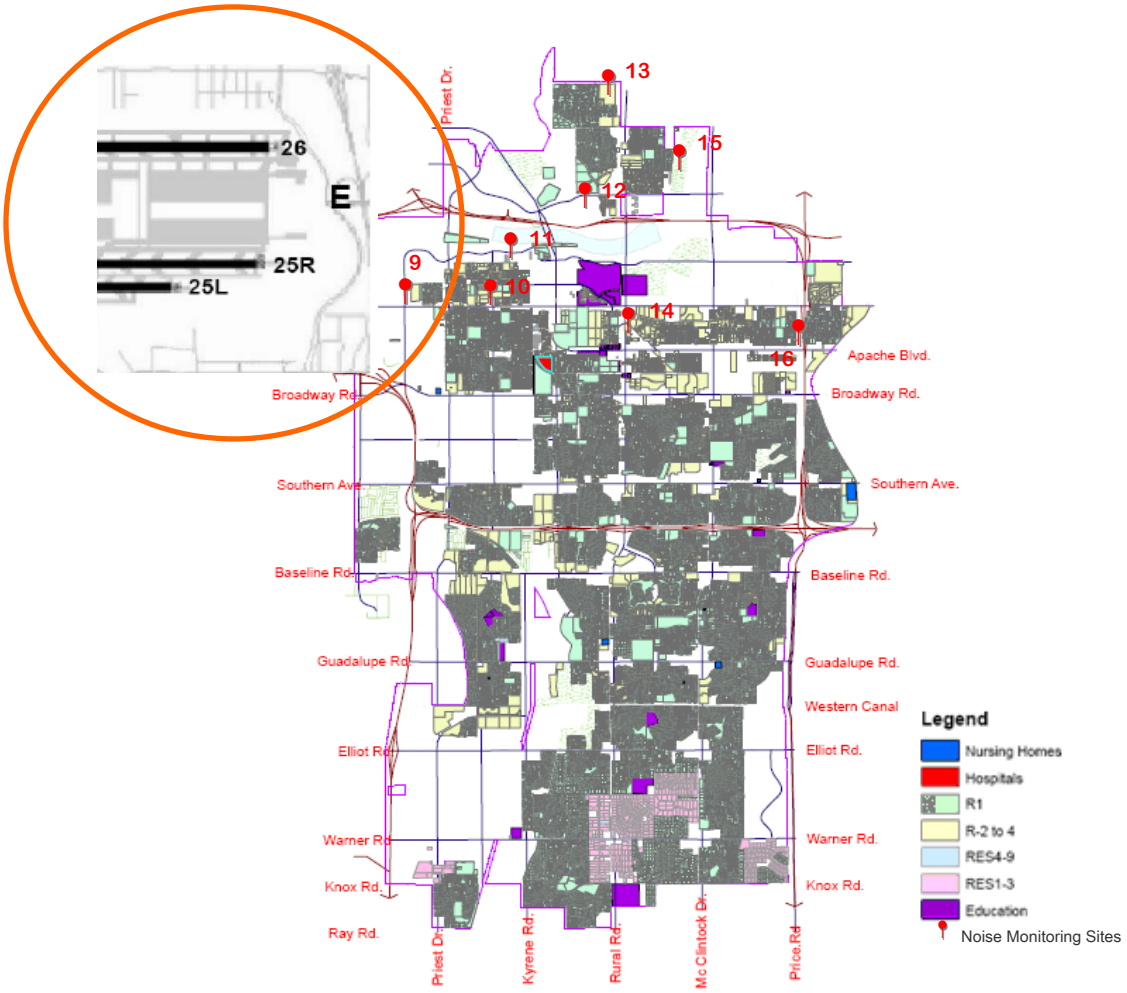
Tempe

2016 1st Quarter Noise Monitoring Report

PHX East



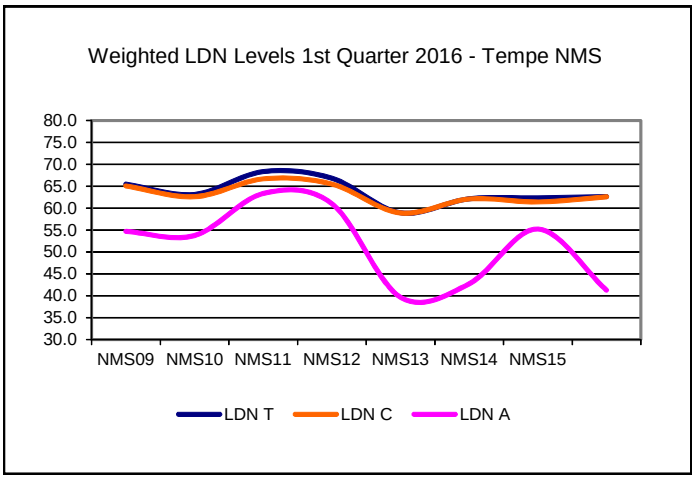
Contents

Aviation Noise Monitoring

The Phoenix Sky Harbor International Airport (PHX) Noise and Flight Track Monitoring System (NFTMS) has eight fixed Noise Monitoring Sites (NMS) in Tempe located in neighborhoods around the Town Lake/ Rio Salado area. 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) that includes a penalty of 10 dB (A) added for nighttime sound events occurring between 22.00-07.00 hours. This summary also includes a description of noise based on long-term equivalent level (Leq) Average sound levels created by aircraft, DNL or Ldn are a product of detection tools built in to the PHX NFTMS, which separate sound 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.

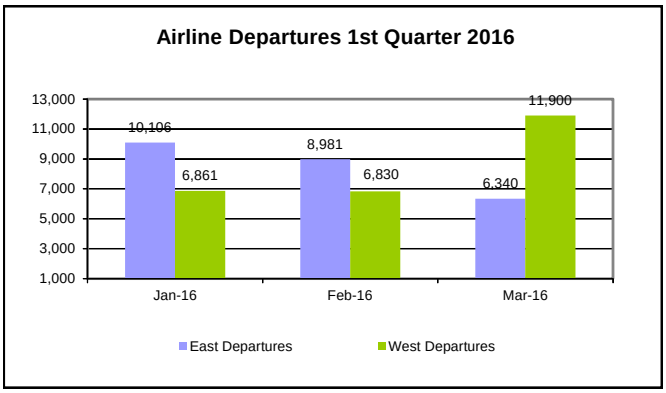


The average noise levels during the first quarter of 2016 relative to other community sources at NMS 11 at Tempe Beach Park were lower that for the last quarter of 2015. The Ldn A levels decreased at NMS 9, the Tempe site located closest to the airport. The monitored standard deviations are naturally higher for the monitors in Tempe located at sites outside the downtown area where the distances to the aircraft are greater and noise from other sources than aircraft operations makes attribution of noise to flights more complicated.

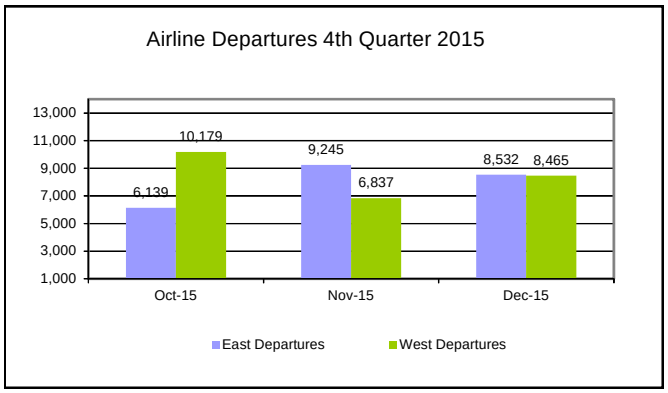
B. East – West Equalization of Noise Burden

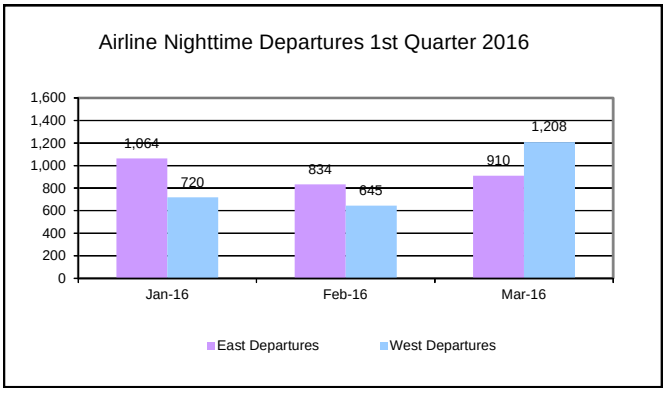
The airport Air Traffic Control Tower is directing large carrier departure traffic with the goal of accomplishing a 50/50 annualized east west split. A procedure for noise mitigation over Tempe delay air carrier turns away from the Salt River to the airspace over the Highway 202/ 101 intersection.

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.

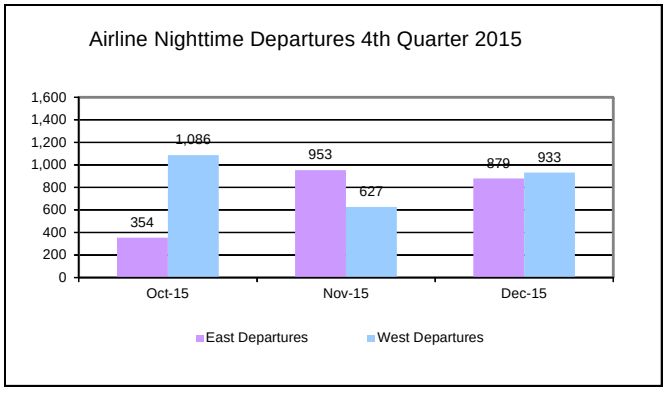


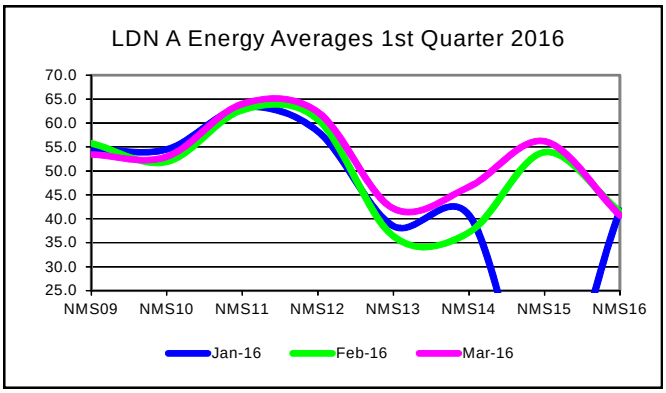
The flow of air carrier and corporate jet departures went predominantly east the first two months of the first quarter of 2016. This changed during March 2016, with its dominant flow of departures going west. There was a total increase in departures to the east by 3.1% and departures to the west decreased by 0.2% compared to the previous quarter.



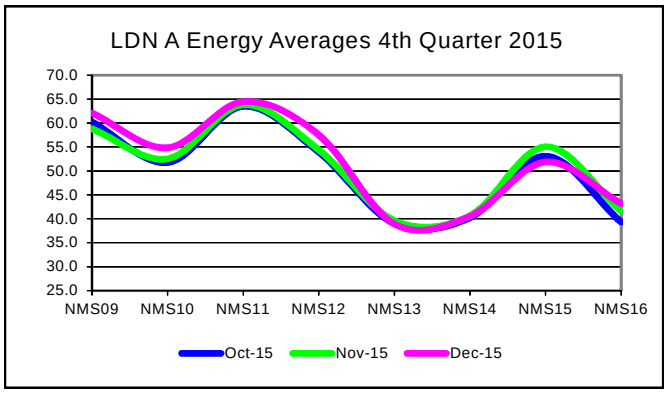


Night time departures occurring between 10:00 p.m. to 7:00 a.m. towards the east increased by 14.2% compared to the last quarter of 2015.



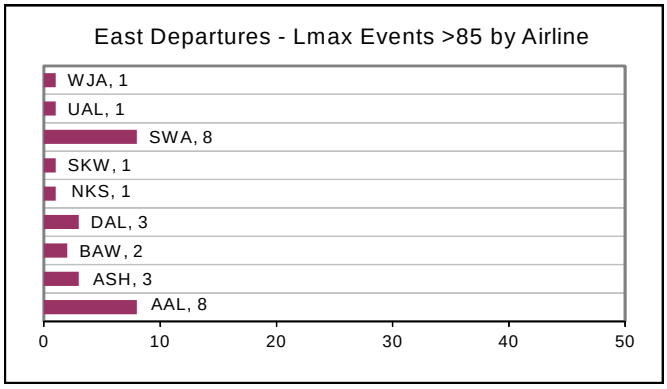


The day-night average noise levels registered at the noise monitoring sites in Tempe were on average equal or higher than the the last quarter of 2015. Particularely highter averages were registered at site 12. Site 15 was down during January 2016.



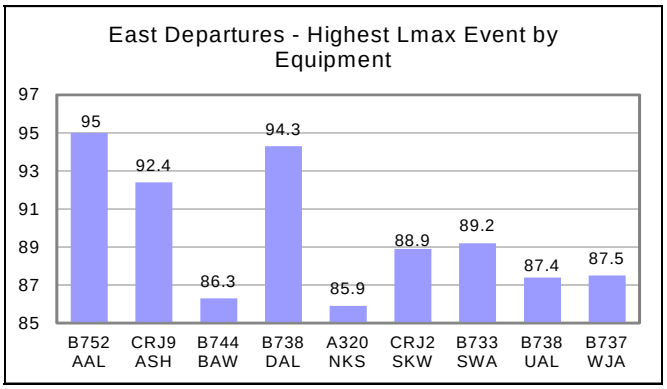
C. Registered Maximum Sound Energy Levels

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.

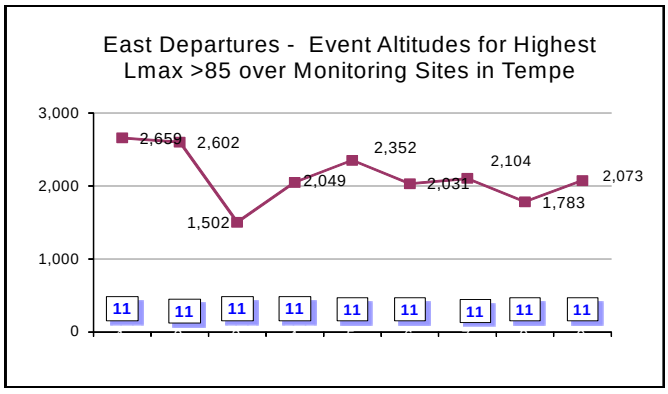


More registered events occurred where aircraft noise reached or exceeded Lmax 85dB compared to the last quarter of 2015.

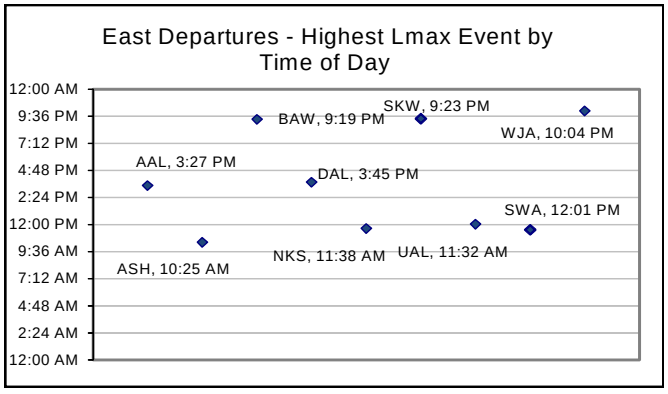
WJA: Westjet Airlines
UAL: United
SWA: Southwest Airlines
SKW: Sky West Airlines
NKS: Spirit Airlines
DAL: Delta Airlines
BAW: British Airways
ASH: Mesa Airlines
AAL: American Airlines



The highest event registered during the first quarter reached Lmax 95 dB, and was created by a Boeing B757 200.



The British Airways B747, was at the lowest altitude compared to other aircraft creating noise events above 85 dB (Lmax). The event was registered at the Tempe Beach Park monitoring site.



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