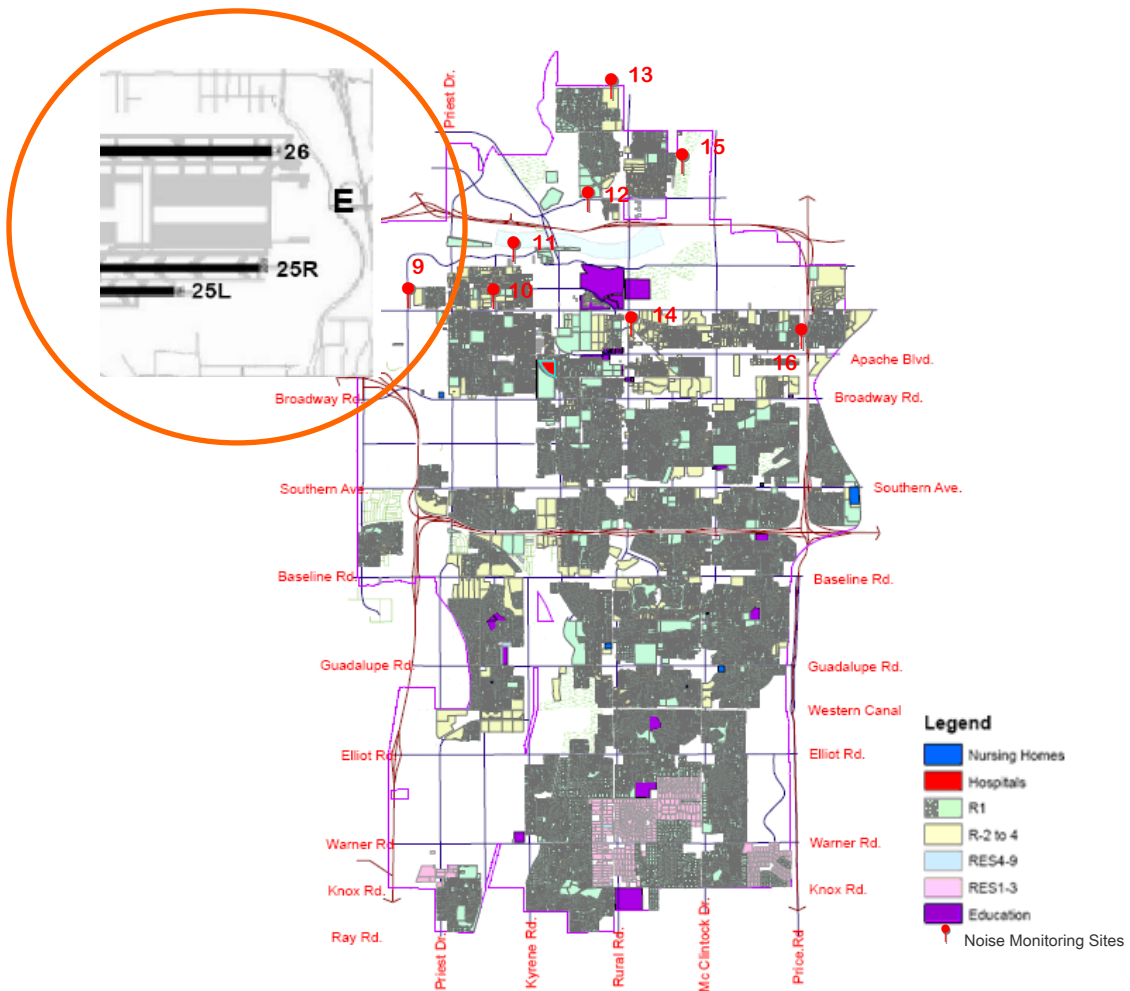


## 2013 4th Quarter Noise Monitoring Report

### PHX East



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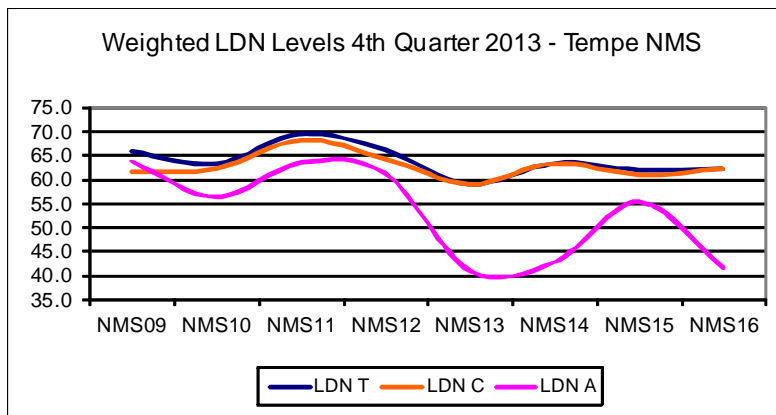
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## Aviation Noise Monitoring

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 identify 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 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 south of the riverbed, where the distances to the aircraft as one of the sources of noise in the local environment are greater. Site 9 was

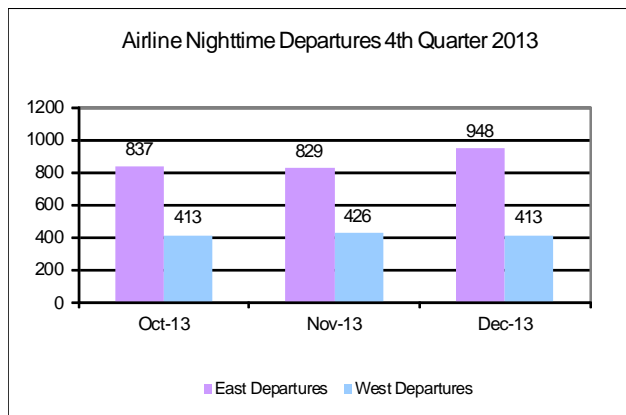
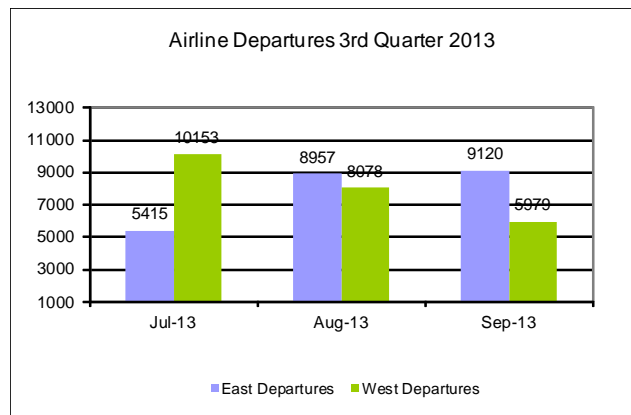
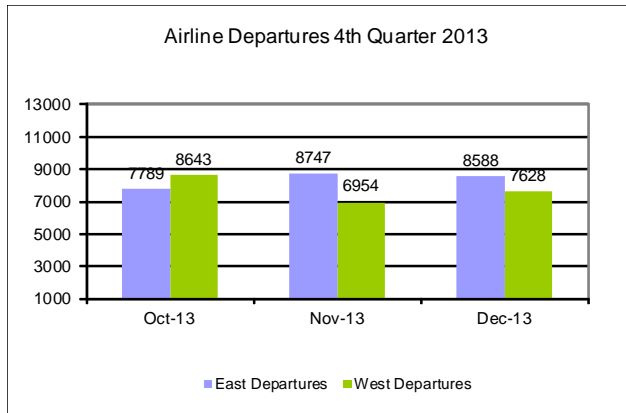
down through the third quarter.

### B. East – West Equalization of Noise Burden

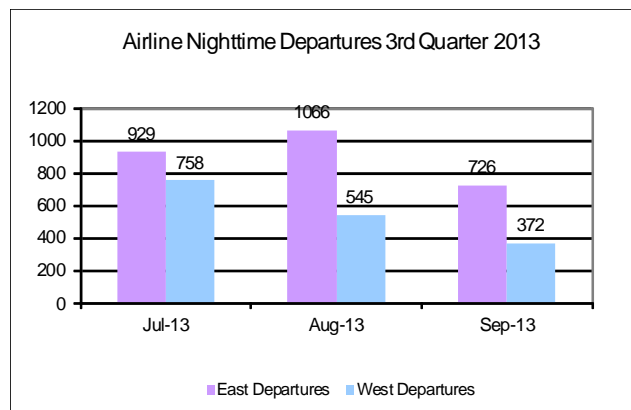
The airport Air Traffic Control Tower is directing large carrier departure traffic with the goal of accomplishing a 50/50 annualized east west split. A procedure for noise mitigation over Tempe delay air carrier turns away from the Salt River to the airspace over the Highway 202/ 101 intersection. There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

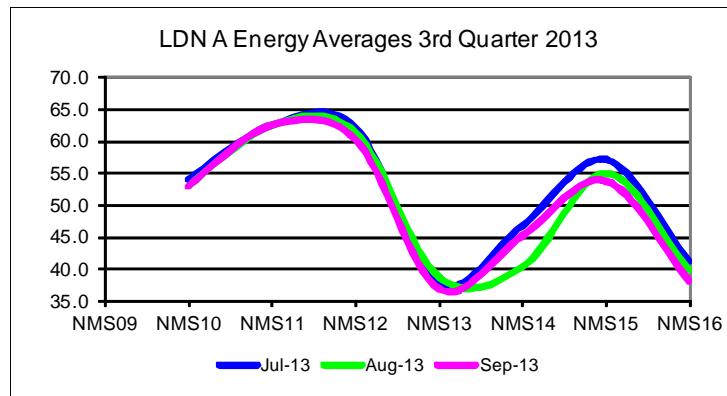
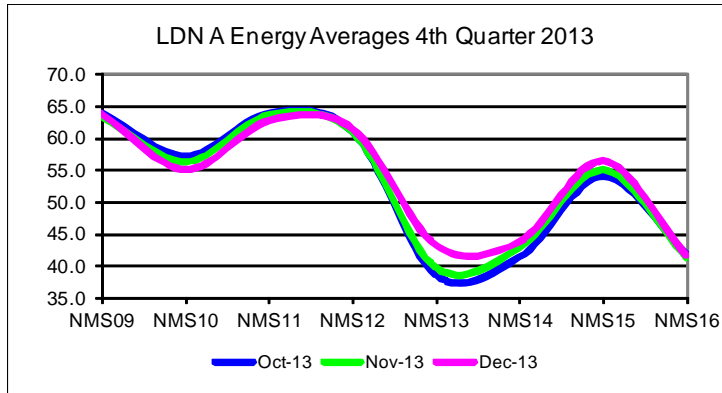
The flow of commercial air carrier and corporate jet departures changed the two last months of the fourth quarter from going in westerly directions to mostly easterly directions. Total number of these departures to the east increased by 3.4% and departures towards the west decreased by 2.1% compared to the third quarter of 2013.



Over the quarter as a whole departures occurring between 10:00 p.m. to 7:00 a.m. decreased towards the east with 2% and towards the west nighttime departures decreased by 14.5% compared to the third quarter of 2013.

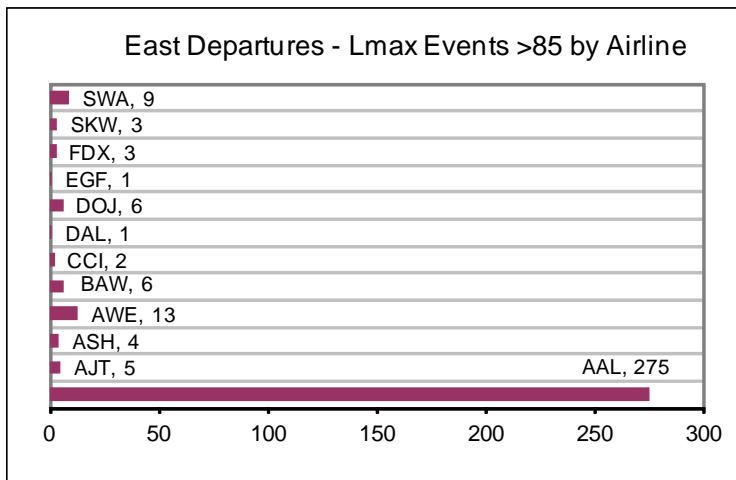


The increase in airline departure and arrival activity in December increased average day-night sound levels for the fourth quarter. Monitoring Site # 9 was back on-line.



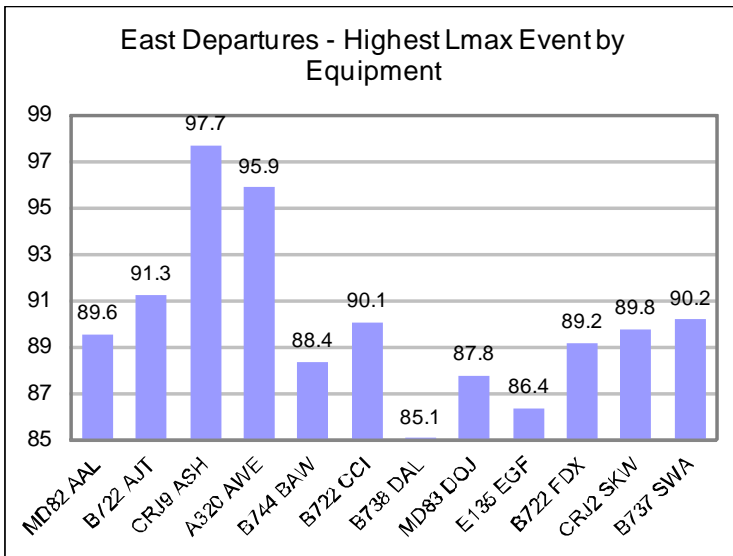
### C. Registered Maximum Sound Energy Levels

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, and events that

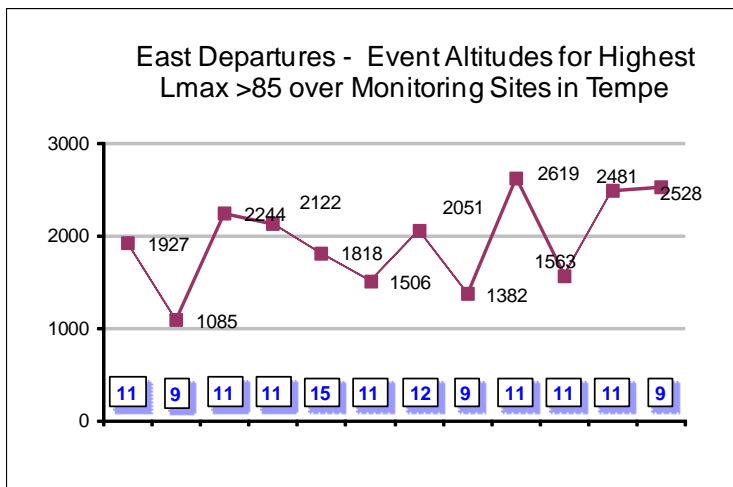


exceeded 85dB increased significantly from the third quarter.

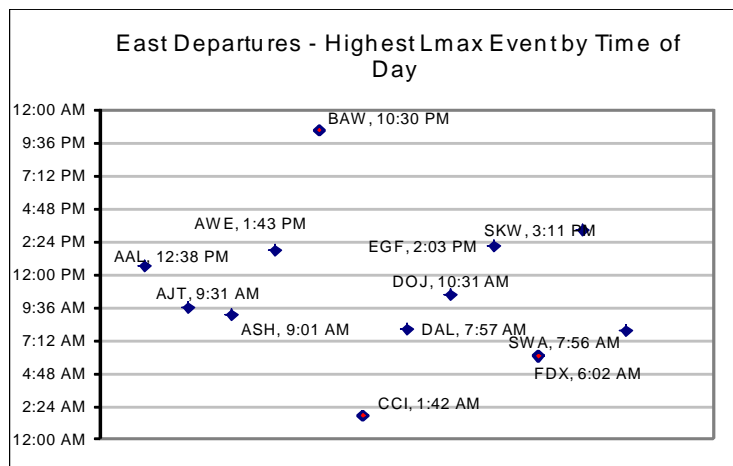
- SWA: Southwest
- SKW: Sky West
- FDX: FedEx
- EGF: American Eagle
- DOJ: Justice Department
- DAL: Delta
- CCI: Capital Cargo
- BAW: British Airways
- AWE: US Airways
- ASH: US Airways/Mesa
- AJT: Amerijet
- AAL: American



The highest single noise event registered during the quarter, military aircraft excluded, was 97.7 dB A, (Lmax) from a Mesa Airline Canadair Regional Jet CRJ900 over Tempe Beach Park at 9:01 a.m. on December 29, 2013.



High event at the lowest altitude was created by Amerijet International Boeing 727 200 hush kited all cargo aircraft at 9:01 a.m. on October 14, 2013.



Three of the loudest events over 85dB for each airline occurred during nighttime hours.

Information about the NFTMS and the City of Tempe agreement with the City of Tempe are available at [www.tempe.gov/aircraftnoise](http://www.tempe.gov/aircraftnoise).