PHX East Compliance Report

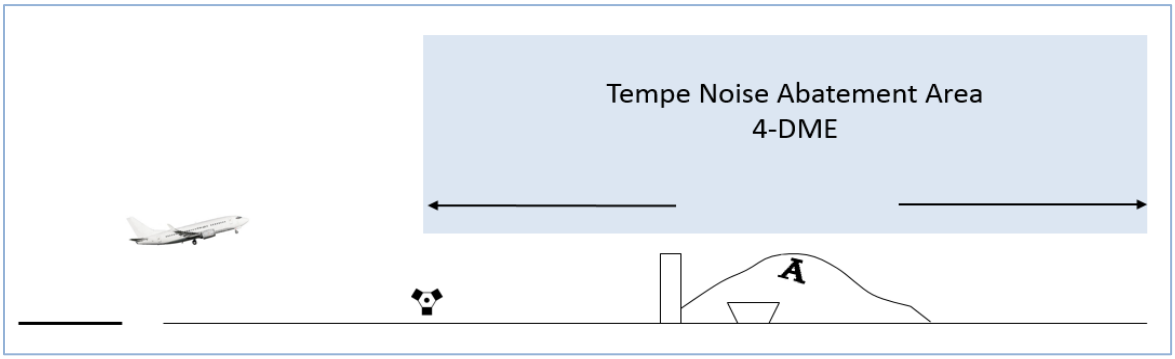
Q1, 2021

Introduction

The City of Tempe is located directly east of Phoenix Sky Harbor International Airport (PHX) which is owned and operated by the City of Phoenix.

This report gives an account of how well PHX operations comply with noise mitigation flight procedures over the City of Tempe. The flight procedures are memorialized in an intergovernmental agreement between the two cities, and the Tempe Aviation Commission (TAVCO) is tracking the implementation of the agreement in quarterly reports followed by an annual summary.

Departure Compliance



The Tempe and Phoenix Intergovernmental Agreement (IGA) requires jet and large turboprop aircraft to stay on headings east within the Salt River (Rio Salado) riverbed and Tempe Town Lake to a distance of 4DME (Distance Measuring Equipment) before diverging to intercept PHX departure routes.

The report uses a different measure than the City of Phoenix to determine jet departure compliance. The airport's official compliance measure is used in PHX Noise Reports published on-line at https://www.skyharbor.com/FlightPaths/PHX-NoiseReports.

Q1, 2021 Tempe Corridor Compliance

80.7%

When runways are operated in east flow, the large turboprop aircraft are routinely departed on diagonal headings to the northeast and southeast directly after take-off to avoid having the slower turboprops on the same departure headings as the faster jet.

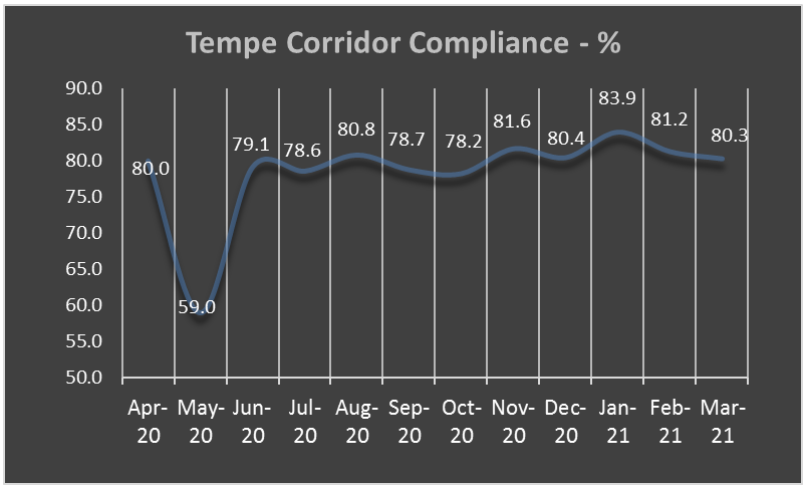
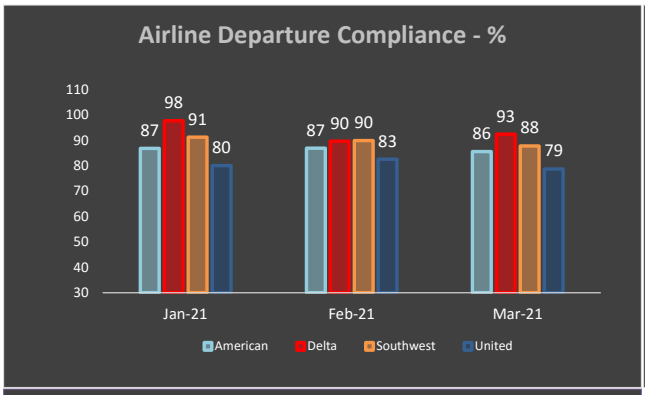
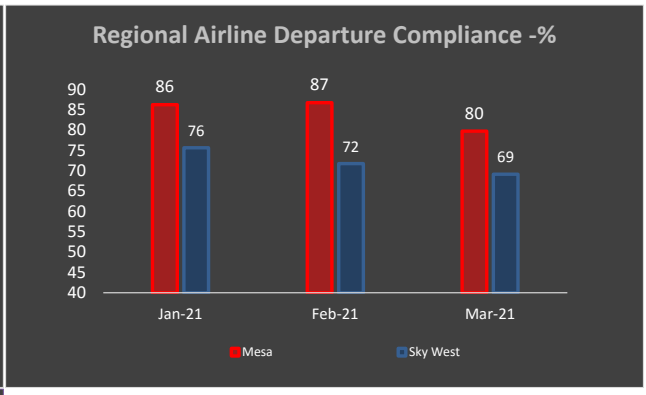
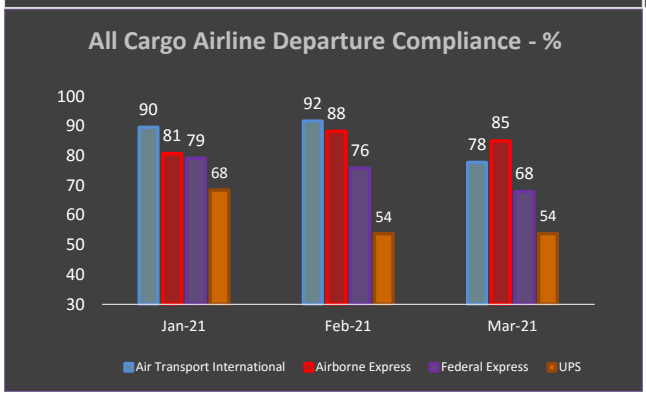


Figure 1: Monthly east departure compliance with Tempe Corridor.







Figures 2, 3 & 4: Tempe corridor departure compliance by selected airlines during the quarter.

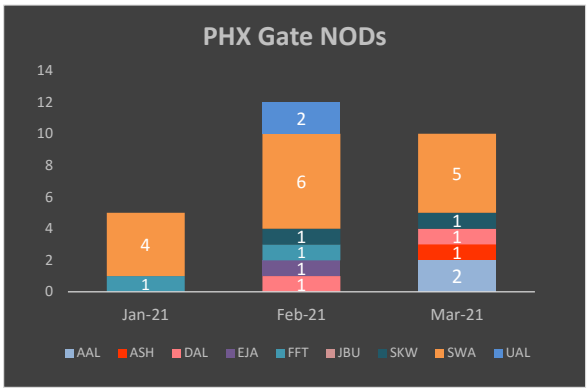
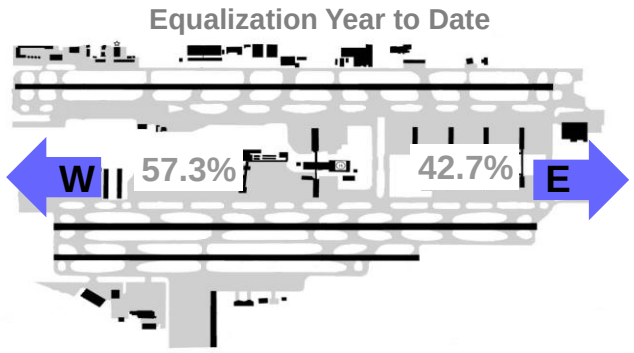


Figure 5: City of Phoenix violation notices to selected airlines.

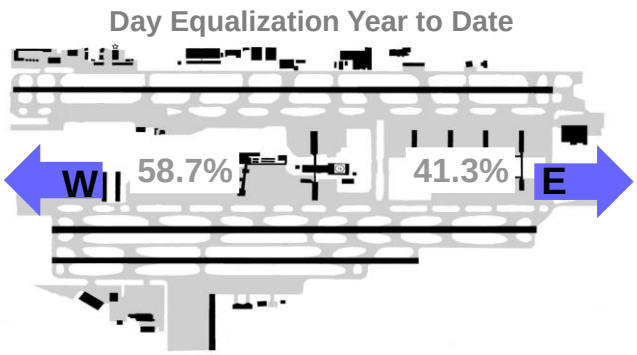
Airlines with jet departures to the east that fail to pass through the PHX Gate receives e-mail Notices of Deviations (NODs) from the City of Phoenix.

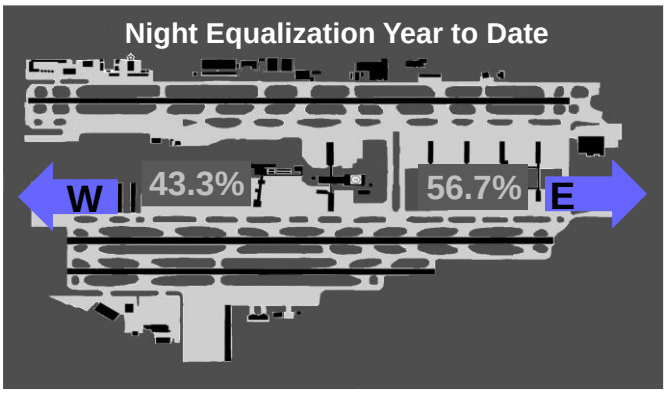
The gate is set up in the PHX Airport Noise & Operations Monitoring System (ANOMS) at 4-DME just west of the SR-202 and SR-101 interchange. It is 1.05 miles wide and runs parallel to the SR-101.

Departure Equalization



The IGA calls for an even split of the noise burden from departing jet and large turboprop aircraft east and west of PHX parallel runways during daytime and nighttime hours. The FAA is expected to compensate for periodic changes in flight patterns as weather and air traffic allows to accomplish equalization over a twelve-month period.





Day = 7:00 a.m. to 10:00 p.m.

Figures 6, 7 & 8: East and west departure flows by jets and large turboprop aircraft over the last twelve months.

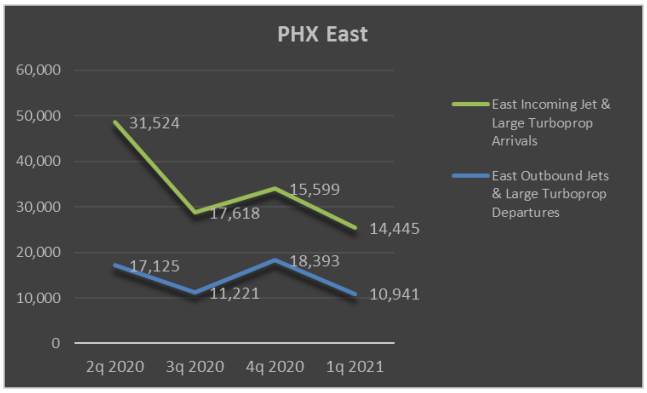


Figure 9: Jet and large turboprop operation volumes on the east side of the airport.

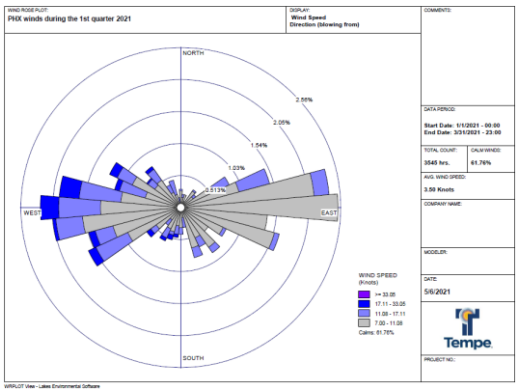


Figure 10: Wind directions and speeds.

The average wind speeds during the quarter was 3.5 knots. The majority of the higher wind speeds came from the west.

Tempe Citizens' Noise Complaints

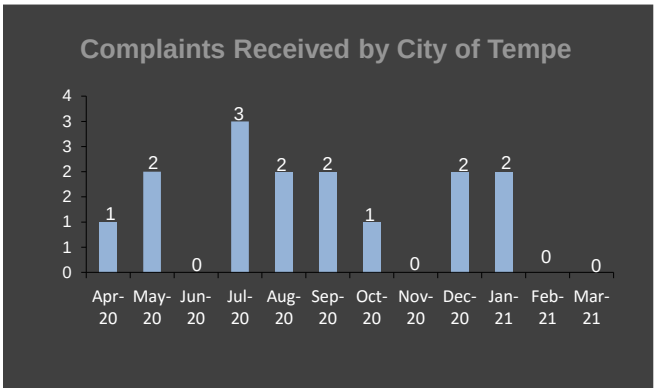


Figure 11: Complaints to City of Tempe over twelve months.

Complaints are recorded as the number of phone calls, voicemails, and electronic messages received from residents calling in or using the Tempe 311 web complaint option.

Figure 12: Location and type of complains received by Tempe.

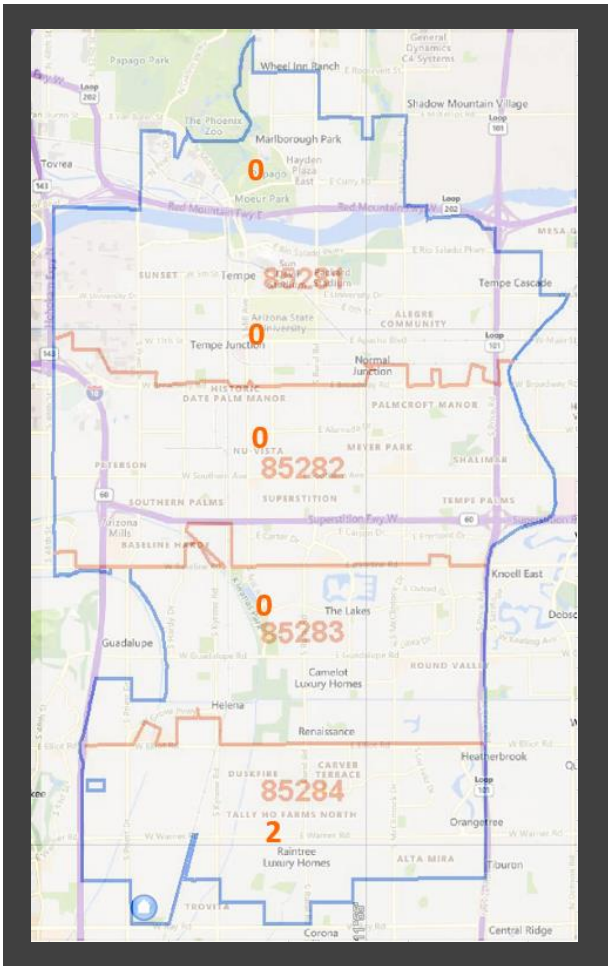
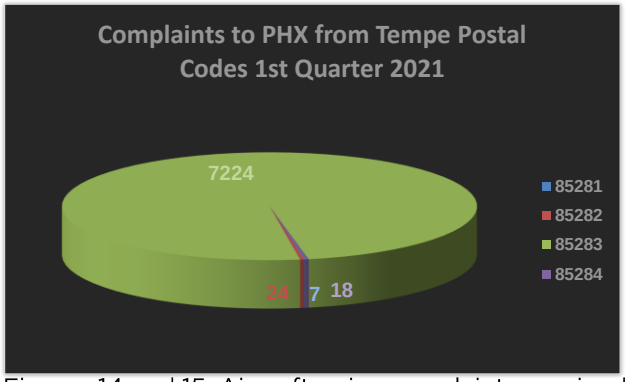
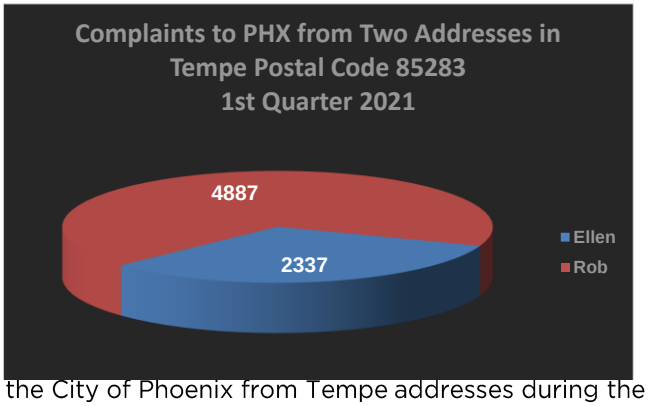


Figure 13: Complaint area codes





Figures 14 and 15: Aircraft noise complaints received by the City of Phoenix from Tempe addresses during the quarter.

It has not been possible in this report to establish a clear correlation between the large volumes of complaints submitted to Phoenix from these home addresses and the total volume of airlines being routed over them.

Complaints can be submitted through the Tempe web site:

Submit Service Request

A city smart phone app is available for down-load with the option to report disturbing flights.

Available on the App Store GET IT ON Google Play

North Tempe Noise Exposure

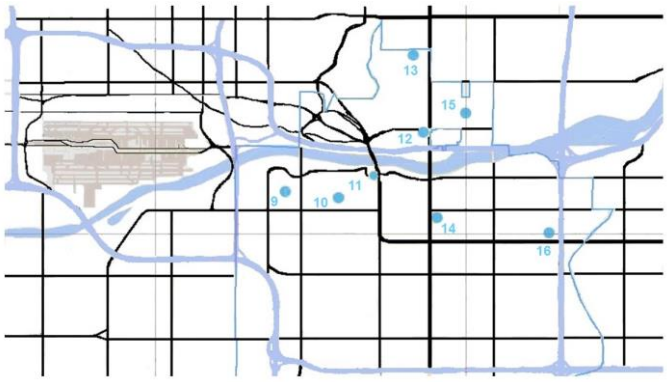


Figure 16: PHX ANOMS fixed noise monitors located in in Tempe.

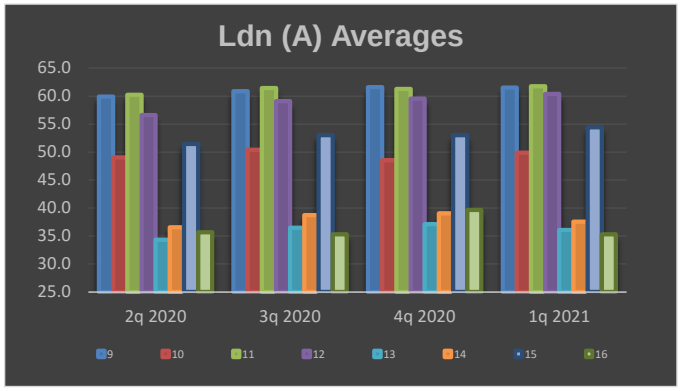


Figure 17: Quarterly Ldn (A) averages at Tempe monitoring sites.

Aircraft sound exposure are registered by twenty fixed PHX ANOMS noise monitors of which eight are located in North Tempe. Average equivalent sound level (Ldn) or Day Night Level (DNL) is the metrics used to determine exposure over time and is calculated over a 24-hour period with a penalty of 10 dB added for sound events occurring between 10.00 p.m. to 07.00 a.m.

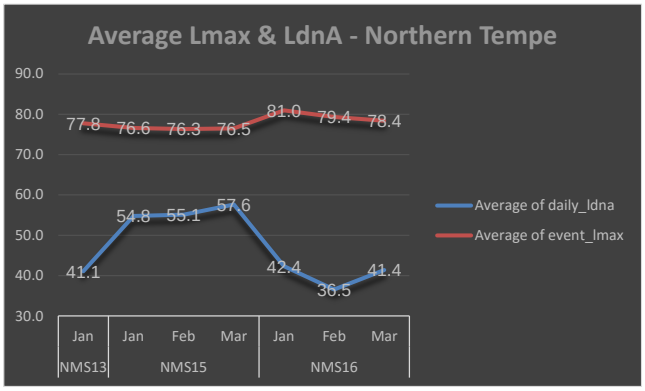


Figure 18: Average daily DNL and Lmax event levels in northern parts of Tempe.

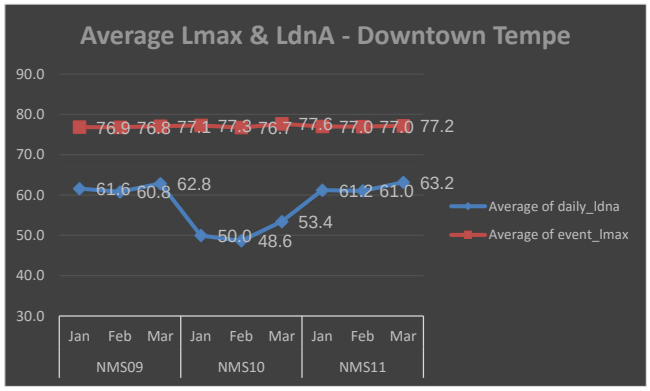


Figure 19: Average daily DNL and Lmax event levels in downtown areas of Tempe.

Lmax is the maximum A-weighted sound level, dB (A) squared registered during a sound event. "A-weighted" means the sound is measured at frequencies that reflect the sensitivity ranges of the human ear.

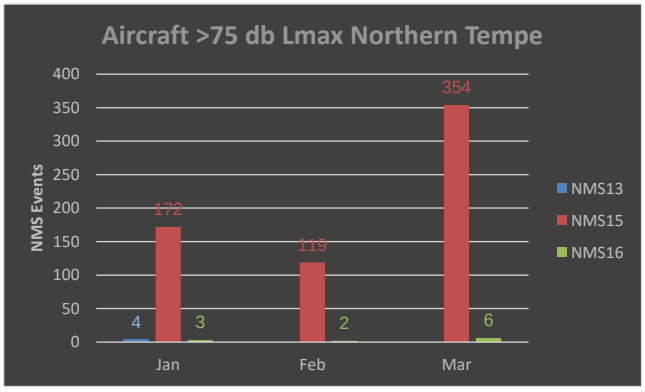


Figure 20: Quarterly count of Lmax events exceeding 75dB at sites in northern parts of Tempe.

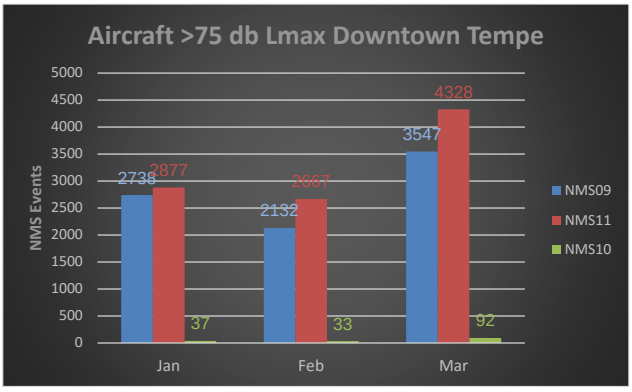


Figure 21: Quarterly count of Lmax events exceeding 75dB at sites in downtown areas of Tempe.