Minutes
Tempe Aviation Commission
February 1, 2018

Minutes of the Tempe Aviation Commission special meeting held on February 1, 2018, 6:30 p.m., at the Public Works Conference Room, Garden Level, City Hall Complex, 31 E. Fifth Street, Tempe, Arizona.

(MEMBERS) Present:
Lane Carraway (Chair)
Robert Dixon
W. David Doiron
Shannon Dutton
Gordon Gauss
Robert Miller
Valeriy Khaldarov
Troy Selland (Calling in)

(Members) Absent:
John Q. Nunes (excused)

Citizens Present:
Barbara Sherman

City Staff Present:
Oddvar Tveit, *Environmental Quality Specialist*

Agenda Item 1 – Call to Order
Mr. Lane Carraway called the meeting to order at 6:30 p.m.

Agenda Item 2 – FAA Community Involvement Process for PHX Satellite Based Routes
Mr. Oddvar Tveit presented air traffic issues that impact flight paths and volumes of air traffic over Tempe, and suggested five problem areas that the members should discuss. The presentation included points made in a discussion paper staff had distributed prior to the meeting about concerns about PHX operations that had been raised by the commissioners or addressed with the Commission.

1. *Climb rates and departure turns on east flow*:
   Airlines prefer fast initial climbs; instrument departure procedures require 500' per NM to 1,640' (MSL), which is just after takeoff before aircraft leave the airport boundary. Most airlines make the rate with good margin during colder months, but not during summer months. Departures by American Airlines from the north runway was less compliant with the initial rate of climb last July than the airline's departures from the center runway. Southwest using the center runway had on the same day no problems climbing fast above this rate. Airlines typically follow standard Noise Abatement Departure Procedures. Early retraction of flaps and slots allows for initially faster climbs. There is an option to delay flaps and slots retraction and climb at less thrust to reduce noise event exposure levels, but standard procedures and performance calculations for a particular aircraft/engine combination used elsewhere may not work well for the same airline at PHX, where excessive heat often creates adverse conditions in getting the required lift on the initial climb.
   a. Extending the initial departure climb segment east to 6 NM has been raised in TAVCO's discussions. Departing aircraft on routes that turn away from the Salt River at 4 DME (Distance Measuring Equipment) would turn at higher altitudes at 6 DME. Sampling noise monitoring data from Weber Drive and further out in Mesa, indicate that even with 1,200' higher altitudes, high single event levels from departure traffic are registered at the monitors from aircraft that fly a route

that continue east beyond 4 DME, the MAXXO Standard Instrument Departure (SID) procedure. The 1994 IGA with Phoenix determines the noise abatement procedure area for departing jets and large turboprop aircraft east of the airport to be 4 NM. Expanding the area out to 6 NM will involve revisiting the agreement with Phoenix and extending to 6 NM, which will also concern the City of Mesa. Moving the SPARKY waypoint at 4 DME farther to the east will extend the single point of departure and lengthen what the FAA consider to be a constraint on air traffic flow on routes that turn at 4 DME.

b. Departing aircraft still violate the speed restriction at the MASVE waypoint on the IZZZO and JUDTH area navigation (RNAV) departures routes, which both turn south and west over south Tempe. Airlines still exceed the speed restriction, and not seem to be able to make the turn inside this waypoint at speeds down to 220 knots. The speed restriction was raised from 210 to 220 knots in 2016.

2. *South Tempe RNAVs*
South Tempe neighborhoods located in areas where the IZZZO and JUDTH routes create narrow flight paths when the runways are operated towards the east, are also subject to noise from 1,400 to 2,000 aircraft part of the day and about 3,000 aircraft on descent from the GEELA RNAV arrival route during west flow. The descending arrivals on the GEELA RNAV are vectored north from the descent to be sequenced into the parallel flow of arriving aircraft over North Tempe. Because the FAA's plan under Step One is to try to return to pre-September 18, 2014 headings, and as Step Two develop new routes, a return to routing aircraft back east and northeast south of the airport by following the previous 240 degrees heading southwest after takeoff before turning aircraft 180 degrees back east when runways are operated in west flow, will affect separation between these departures and the GEELA RNAV descent. An idea raised in a Phoenix/FAA public meeting before the lawsuit, was to realign the GEELA downwind leg farther to the south over the new South Mountain freeway extension along Pecos Road. This could improve separation and ease the afternoon flow of aircraft on narrow routes over south Tempe.
3. *Close-in Approaches*
PHX north runway has the most arrival operations over Tempe, and during busy hours, late maneuvers of aircraft being merged into two parallel paths is a problem that can at times bring aircraft outside the regular approach paths over north Tempe. The implementation of additional Required Navigation Performance (RNP) approaches, enabling airlines to use them all the way on Optimal Profile Descents from higher altitudes before a steeper descent, and extending the final approach leg length would benefit both the airlines and Tempe residents. For more RNP approaches to work in addition to the heavily used EAGUL from the northeast, procedures need to be developed and improved routing and sequencing outside PHX airspace needs to happen before PHX can reduce its reliance on radar vectoring and pilot visual separation, which have been in dominant use at PHX to merge aircraft into two parallel paths over Tempe.

Discussions:
The members discussed the following four procedure changes to address the specific problems listed below:

- Problem related to east departure routing: Many departing aircraft anticipate turns before 4-DME and Air Traffic Control (ATC) is not able to keep pilots to the speed restriction at the MASVE waypoint. ATC is not keeping pilots consistently to the JUDTH turn southwest, which is supposed to occur after the MASVE waypoint and not before the 180-degree departure turn back west is completed.

    1) Suggestion: Leave the SPARKY where it is, but consider moving the FUTREP waypoint farther east to 6-DME, and the next waypoints on the IZZZO and JUDTH RNAVs accordingly, to relax the turn south and back west northwest of the airport.

- Problem related to dual lane concentrated air traffic over areas of south Tempe, east of SR101.

2) Suggestion: When considering reverting back to southwest departure headings in place prior to September 18, 2014 for routes that have turns back east and northeast, consider moving the GEELA downwind paths to the area over the South Mountain freeway extension, to improve vertical separation to the west and south bound RNAV departure routes on west flow, and allow steeper descent on the GEELA approach.

3) Suggestion: Establish a new RNP approach with RF-leg to the north runway if the parallel runway separation at PHX is insufficient to accommodate RNPs from the west to both the north (Runway 26) and the south runway (Runway 25L).

- Problem: Compression issues, late mergers to final approach, short finals over Tempe downtown areas.

4) Suggestion: Extend final approach leg lengths and satellite navigation points closer to the final approach paths to harmonize interception of finals at 6-DME, and if possible add to PHX RNP approaches. Review optimal alignment of routes and off-load alternates early in center (ZAB) airspace to the orientation of PHX parallel runways.

If the FAA considers optimizations of satellite based routing, as suggested, in addition to changes that will be included when the FAA publish new or revised satellite based departure routing on the west side of the airport, it is up to Phoenix to consider the inclusion of new headings close to the runways within the context of existing Part 150 Noise Compatibility plans for the airport.

Motion: Mr. David Doiron moved to recommend to the Mayor and Council that they accept the discussion paper and submit a cover letter with the suggested four action items to be included when the FAA considers changes to PHX procedures during Step Two, before the end of the FAA's community involvement comment period. Ms. Shannon Dutton seconded the motion.
Action: The motion passed by a unanimous vote.

Agenda Item 3 – Adjournment
Motion: Mr. Robert Dixon moved to adjourn the meeting. Mr. Robert Miller seconded the motion.
Action: The meeting was adjourned at 7:46 p.m. by a unanimous vote.

Prepared by: Oddvar Tveit

Reviewed by: Justin Bern