

HMMH

2250 Douglas Boulevard, Suite 240
Roseville, CA 95661
916.368.0707
www.hmmh.com

TECHNICAL MEMORANDUM

To: Patrick Lammerding
Deputy Executive Director, Planning and Development
Hollywood Burbank Airport

From: Gene Reindel, Task Force Technical Consultant and Facilitator

Date: March 2, 2020

Subject: Responses to Task Force Member Questions from Meeting #6

Reference: HMMH Project Number 310870

This Technical Memorandum provides responses to the following three questions from the South San Fernando Valley Aircraft Noise Task Force members as provided at the February 19, 2020 Task Force meeting during the HMMH presentation of data analyses results:

1. Can the altitude analysis from 2007 to 2019 of Hollywood Burbank Airport aircraft departures from Runway 15 include a fleet mix breakdown, e.g., commercial jets, general aviation (GA) jets, etc.?
2. What is the average altitude of the 2019 concentrated arrival aircraft flight tracks, particularly the two paths south of the airports: (1) aircraft heading west to arrive Hollywood Burbank Airport Runway 8 and (2) aircraft heading east and then north to arrive Hollywood Burbank Airport Runway 33?
3. What percentage of jets departing Hollywood Burbank Airport from Runway 15 turn towards the east rather than following the 210-degree heading?

1. Hollywood Burbank Airport Runway 15 Departures Altitudes by Aircraft Category

HMMH further analyzed jet altitudes after departing Hollywood Burbank Airport Runway 15 using the five gates presented at the February 2020 meeting and provided in Figure 1 below by separating and analyzing the following aircraft categories: Southwest Airlines Boeing 737 aircraft, all other commercial air carrier aircraft, commercial air taxi (passenger) aircraft, all other jets. As provided in Tables 1 through 5 (analysis Gates 1 through 5, respectively), the results of the gate analyses show that, on average, air carrier aircraft are lower in 2019 as compared to 2007 whereas the air taxi and other jets are higher.

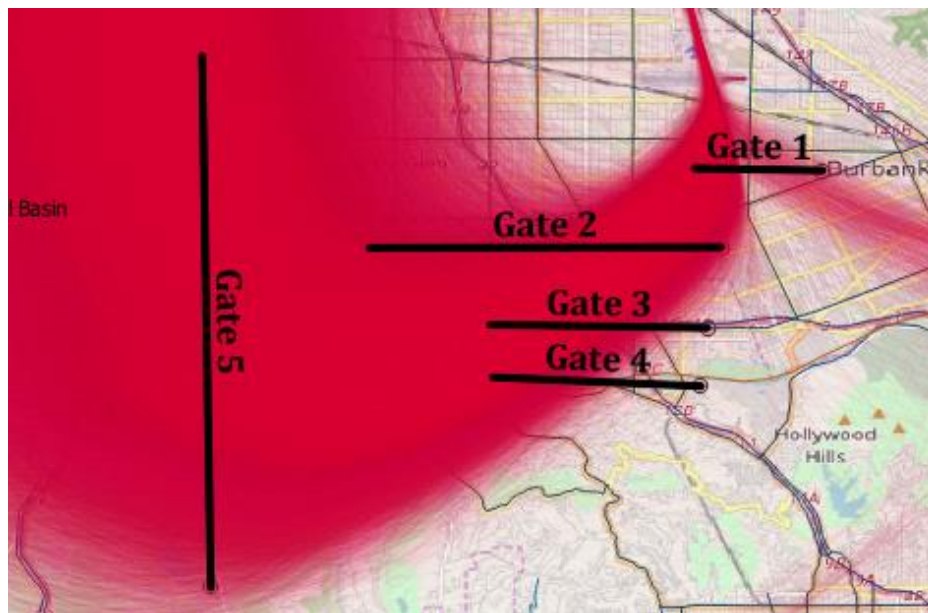


Figure 1. Altitude Analysis: Hollywood Burbank Airport Runway 15 Jet Departures

Table 1. Altitude Analysis Results using Gate 1

Aircraft Type	2007		2010		2015		2019	
	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL
Southwest Airlines B737	68	582	7,082	571	10,942	590	16,886	568
Air Carrier	215	545	6,291	539	5,601	556	10,822	569
Air Taxi Passenger	34	477	2,655	475	2,564	505	6,387	528
Other Jets	86	525	3,338	535	5,004	579	5,952	597

Notes: MSL is Mean Sea Level, so average altitude is in reference to MSL rather than above the ground level.



Table 2. Altitude Analysis Results using Gate 2

Aircraft Type	2007		2010		2015		2019	
	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL
Southwest Airlines B737	97	911	12,527	936	14,082	827	17,525	760
Air Carrier	261	800	7,782	821	6,232	833	11,283	792
Air Taxi Passenger	38	732	3,017	753	2,665	744	6,402	773
Other Jets	158	897	5,482	906	6,498	914	7,058	919

Notes: MSL is Mean Sea Level, so average altitude is in reference to MSL rather than above the ground level.

Table 3. Altitude Analysis Results using Gate 3

Aircraft Type	2007		2010		2015		2019	
	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL
Southwest Airlines B737	58	1,157	6,310	1,176	10,038	1,032	16,573	986
Air Carrier	173	983	4,982	963	4,885	992	10,450	951
Air Taxi Passenger	30	970	2,181	930	2,349	922	6,270	994
Other Jets	102	1,060	3,320	1,093	4,917	1,119	6,104	1,159

Notes: MSL is Mean Sea Level, so average altitude is in reference to MSL rather than above the ground level.



Table 4. Altitude Analysis Results using Gate 4

Aircraft Type	2007		2010		2015		2019	
	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL
Southwest Airlines B737	7	1,300	378	1,282	1,607	1,161	6,956	1,122
Air Carrier	37	1,047	1,258	1,058	2,382	1,113	6,004	1,063
Air Taxi Passenger	8	1,119	901	1,074	1,458	1,061	4,593	1,134
Other Jets	30	1,197	924	1,189	2,047	1,221	2,940	1,269

Notes: MSL is Mean Sea Level, so average altitude is in reference to MSL rather than above the ground level.

Table 5. Altitude Analysis Results using Gate 5

Aircraft Type	2007		2010		2015		2019	
	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Total Number of Flight Tracks	Average Altitude (ft) in MSL
Southwest Airlines B737	68	2,209	7,715	2,157	9,570	1,933	15,174	1,917
Air Carrier	179	1,796	4,804	1,692	4,160	1,780	9,350	1,695
Air Taxi Passenger	26	1,877	1,852	1,846	2,039	1,730	5,291	1,893
Other Jets	109	1,920	3,524	1,927	4,700	2,029	5,790	2,129
Notes: MSL is Mean Sea Level, so average altitude is in reference to MSL rather than above the ground level.								



2. Average Altitude of Hollywood Burbank Airport Arrivals South of the Airports

To address the Task Force question in regards to the average altitude of the two concentrated arrival paths to the south, HMMH used our existing “Gate5” that we previously used to obtain jet departure altitudes from jet departures from Runway 15 to determine the average altitude of these arrival flight paths showing in Figure 2 below. The results are provided in Table 6 below the figure.

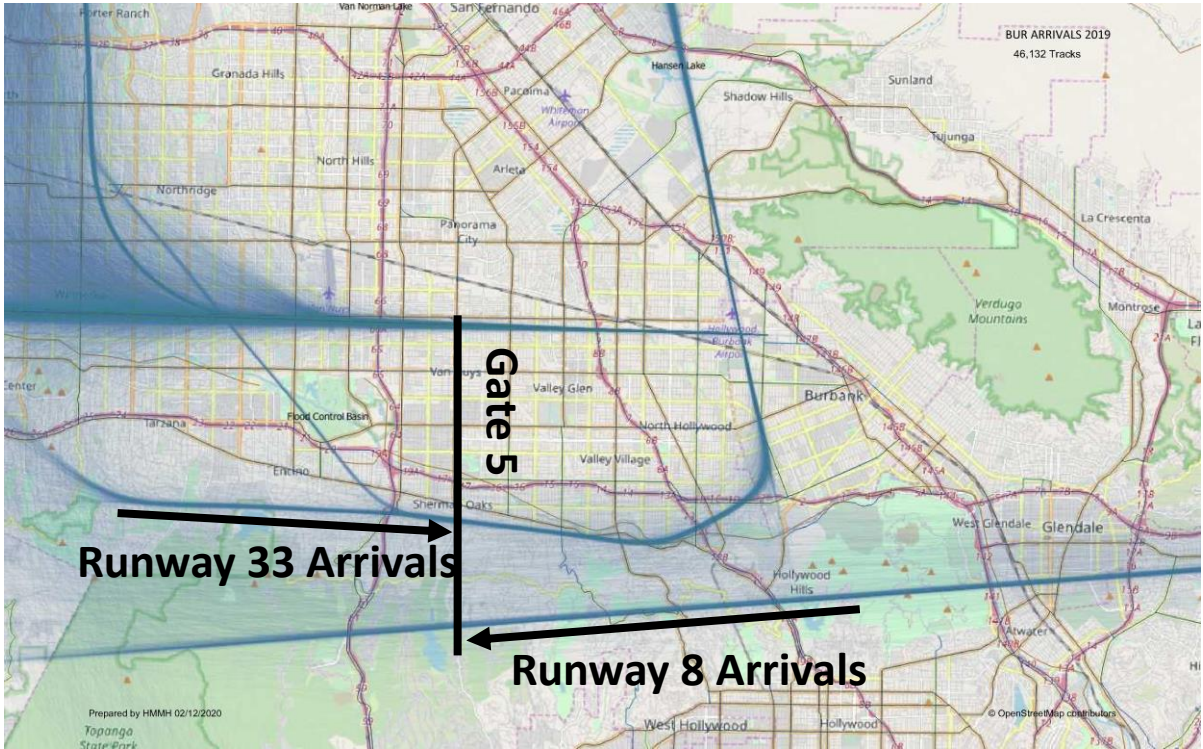


Figure 2. Hollywood Burbank Airport Jet Arrivals in 2019

Table 6. Altitude Analysis Results using Gate 5

Arrival Path	Total Number of Flight Tracks	Average Altitude (ft) in MSL	Ground Elevation (ft) Near Path
Runway 33 Arrivals	1,414	3,255	850 – 1,400
Runway 8 Arrivals	901	5,985	900 – 1,300

Notes: MSL is Mean Sea Level, so average altitude is in reference to MSL rather than above the ground level. The approximate range of ground elevation near the flight paths at Gate 5 is provided for reference to estimate the altitude the aircraft are above ground level.

3. Percentage of Hollywood Burbank Airport Runway 15 Jet Departures that Turn East

HMMH added two analysis gates, Gate 6 and Gate 7 to determine the number and percentage of Runway 15 jet departures that use the 210-degree heading and those that turn east. Figure 2 shows the areas of the additional gates and Table 7 provides the results of our analysis, which shows 99% of jet departures use the 210-degree heading and only 1% turn to the east in 2019.

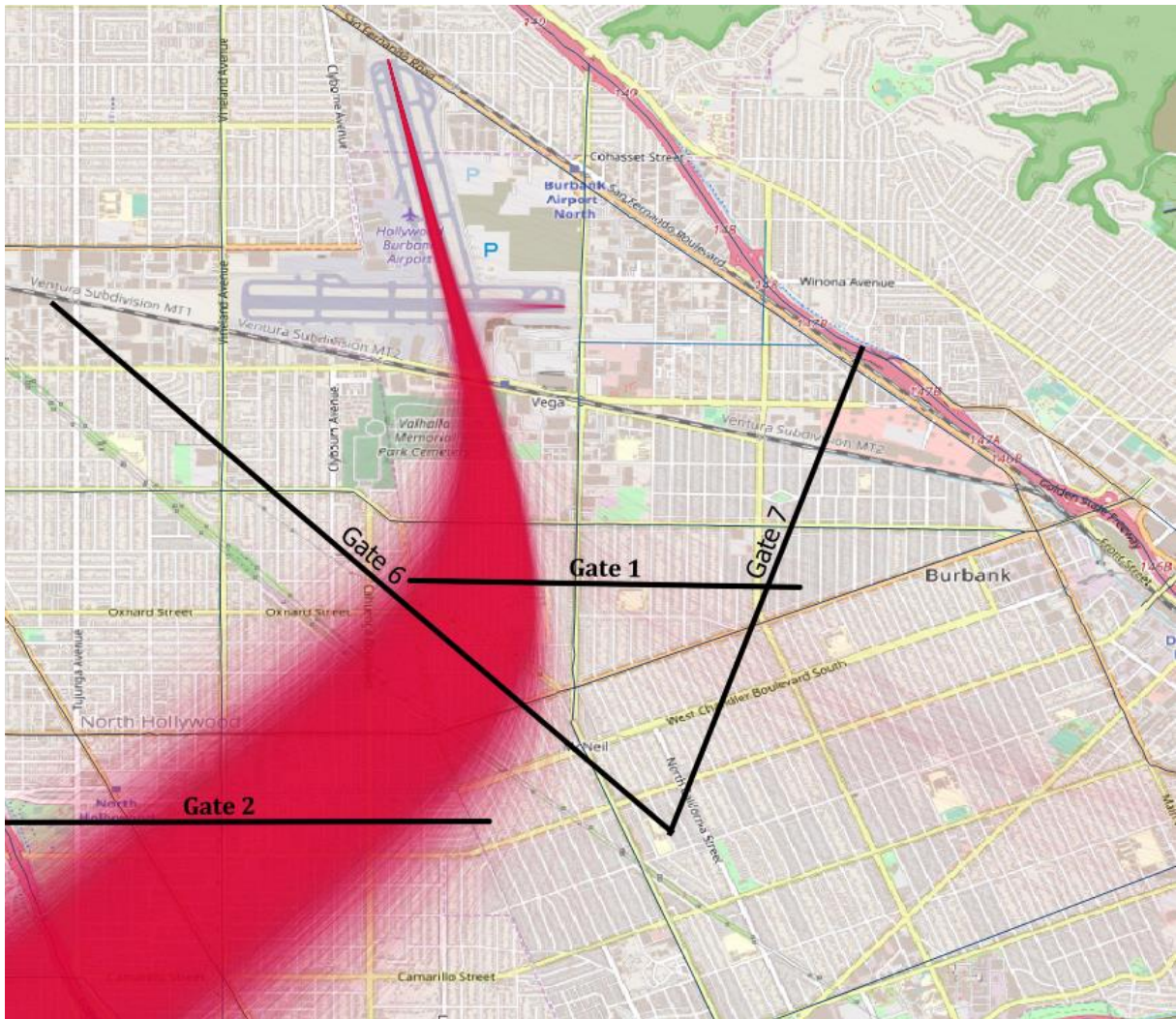


Figure 3. Hollywood Burbank Airport Jet Departures in 2019

Table 7. Altitude Analysis Results using Gates 6 and 7

Departure Path	Number of Flight Tracks	Percentage of Total Flight Tracks
210-Degree Heading	41,699	99%
Easterly Heading	509	1%