

**HMMH**

8880 Cal Center Drive, Suite 430  
 Sacramento, California 95826  
 916.368.0707  
 www.hmmh.com

November 19, 2015

Mr. Ron Reeves  
 Noise & Environmental Affairs Officer  
 Long Beach Airport  
 4100 E. Donald Douglas Dr.  
 Long Beach, California 90808

Subject: Review of Potential Increase in Daily Air Carrier Operations Allowed within Existing Air Carrier Noise Budget – Long Beach Airport  
 Reference: HMMH Project Number 307950

Dear Mr. Reeves:



Based on the results of the noise budget audit HMMH completed and summarized in a letter dated November 2, 2015, this follow-up letter determines the number of additional air carrier flights<sup>1</sup> permitted above the minimum of 41 allowed by the Airport Noise Compatibility Ordinance (Long Beach Municipal Code (LBMC) Chapter 16.43)<sup>2</sup> without exceeding the Air Carrier Noise Budget of 70.7 and 84.6 at RMT 9 and RMT 10, respectively as shown in **Table 1: Runway 12-30 Cumulative Noise Budgets**.

<b>Table 1: Runway 12-30 Cumulative Noise Budgets</b>		
<b>Aircraft User Category</b>	<b>RMT 9</b>	<b>RMT 10</b>
Air Carrier	70.7	84.6
Commuter	0.4	3.6
Industrial	8.5	6.6
Charter	0.14	0.09
General Aviation	23.0	26.0
<b>Total</b>	<b>102.74</b>	<b>120.89</b>
Source: Airport Noise Compatibility Ordinance (Long Beach Municipal Code (LBMC) Chapter 16.43, Technical Appendix.		

As documented in our November 2, 2015 letter, HMMH assessed the existing air carrier Noise Contribution Budget for the annual period of October 1, 2014 through September 30, 2015 as summarized in **Table 2: Calculated Air Carrier Noise Budget Contribution (2015)**. Our analysis showed that for the most recent full year of operations ending September 30, 2015, the actual air carrier Noise Contribution levels are far below those allowed in the Noise Contribution Budget of the Municipal Code.

<sup>1</sup> The Ordinance defines a flight as one arrival and one departure by an aircraft.

<sup>2</sup> Long Beach Municipal Code, 16.43.010 Definitions, Section A. Air Carrier.

**Table 2: Calculated Air Carrier Noise Budget Contribution (2015)**

Category	RMT 9	RMT 10
Total Noise Contribution Budget <sup>1</sup>	102.74	120.89
Air Carrier Noise Contribution Budget <sup>1</sup>	70.7	84.6
Air Carrier Noise Contribution Budget <sup>1</sup> (%)	68.8%	70.0%
Total CNEL Allowed at Nearest Noise Sensitive Property	65.1 dB	65.8 dB
Air Carrier CNEL Allowed at Nearest Noise Sensitive Property	63.5 dB	64.3 dB
Measured Air Carrier CNEL	61.3 dB	62.0 dB
Actual Air Carrier Noise Contribution for year ending September 30, 2015	42.2	50.7
Unused Air Carrier Noise Contribution Budget for year ending September 30, 2015	28.3	33.6
Unused Air Carrier Noise Contribution Budget for year ending September 30, 2015 (%)	40.0%	39.7%

*Note: (1) Technical Appendix to Chapter 16.43 Airport Noise Compatibility Municipal Code. Total is equal to the budgets from air carriers, commuters, industrial, charter and general aviation. Percent is air carrier budget divided by total budget.*



The data from the LGB noise monitoring system consisted of 10,980 aircraft operations as measured at RMT 9 and 11,090 at RMT 10, which equates to an annual average of 30 daily aircraft operations as compared to the currently available "slots" provided to the air carriers for up 41 daily operations. In order to protect the grandfathered noise budget at LGB, the Airport is interested in determining the additional number of slots, above the minimum of 41 allowed by Ordinance, they can provide to air carriers and remain within the air carrier noise budget as shown in Table 1.

Our analysis assumes the following:

1. Air carriers will operate a similar fleet mix with the additional slots as they currently operate
2. Air carriers will operate the same mix of day, evening and night operations as they do currently

As shown in Table 2, air carrier operations accounted for CNEL of 61.3 dB at RMT 9 and 62.0 dB at RMT 10. Had the number of daily operations increased from 30 to 41 (along with the preceding assumptions), the resulting measured CNEL at RMT 9 and RMT 10 would have been 62.6 dB and 63.4 dB, respectively. This is 0.9 dB below the allowable CNEL. To increase the CNEL by 0.9 dB, the allowable slots could increase from the minimum of 41 to 50 at RMT 9 and 51 at RMT 10. Therefore, we find the Airport may increase the minimum slots from 41 to 50 (an increase of 9 slots) based on the air carrier noise budget contribution as measured in 2015.

Our analysis confirms the findings in the Landrum & Brown November 12, 2015 Memo, **Long Beach Airport Additional Slots Budget**, which suggested the Airport could add 9 slots:

"In terms of potential options for additional flights, if four B737-700 aircraft slots, four B737-800 slots and one B757 slot were added, and ninety-five percent utilization and existing time of day were maintained, the Airport would continue to remain below the established noise limits."

Sincerely yours,

Harris Miller Miller & Hanson Inc. d/b/a/ HMMH

Eugene M. Reindel  
 Vice President and Principal Consultant

*Note: Excel spreadsheet with Noise Contribution calculations provided separately*