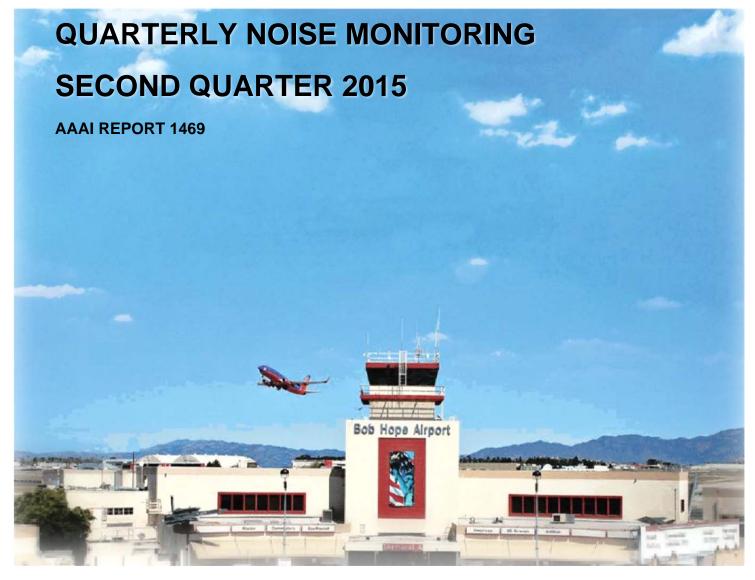
# BOB HOPE AIRPORT





**SEPTEMBER 2015** 

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QUARTERLY NOISE MONITORING AT BOB HOPE AIRPORT SECOND QUARTER 2015

SEPTEMBER 2015

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# QUARTERLY NOISE MONITORING AT BOB HOPE AIRPORT SECOND QUARTER 2015

# I. INTRODUCTION

In compliance with the California Noise Standards (Reference 1) and the current variance from certain provisions of the Standards (Reference 2), the operator of the Bob Hope Airport is required to perform noise monitoring in the vicinity of the airport for the purpose of establishing a noise impact boundary. The Noise Standards currently specify a community noise equivalent level (CNEL) of 65 dB for the noise impact boundary<sup>1</sup>. The airport is required to provide, each quarter, an updated annual noise impact contour based on measurement data over the four preceding quarters.

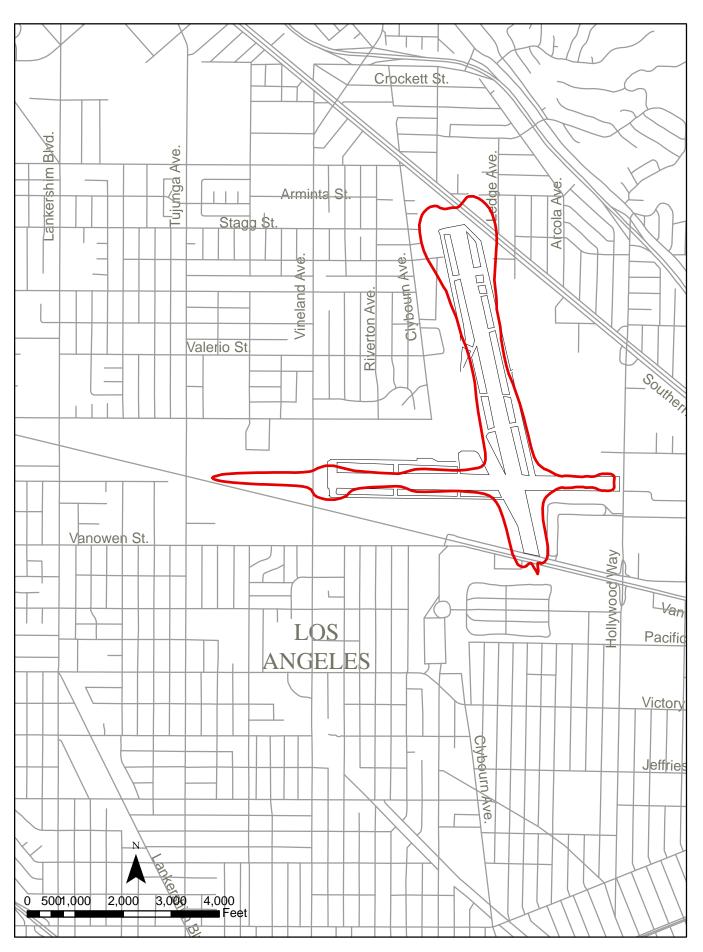
A permanent noise monitoring system became operational in April 1980 and, with brief interruption for system expansion, maintenance, and program changes, has been operational since that time. Of the original nine noise monitor sites, eight have remained unchanged since 1980. The monitor at site 8 was removed in 1997 and replaced by a monitor at site 18. Two sites were added east of the airport in late 1980. Four sites were added south of the airport in January 1986 in response to the requirement to determine the 65 dB contour. Three more locations were added in February 1997. Two of these, identified as 16 and 17, are south of the airport, and one, 18, is to the west. These locations were added to permit monitoring closer to the 65 dB contour. The noise monitoring computer at the airport was replaced in August 1995.

The Bob Hope Airport Noise Monitoring System was modernized and augmented in late December 2012 by replacing the noise and flight track matching software, the noise monitoring hardware, and by adding sites 19, 20, 21, and 22 to allow closer monitoring to the current 65 dB CNEL contour. The old site 17 was removed as redundant with site 15, so the updated noise monitoring system contains 20 permanent microphone locations.

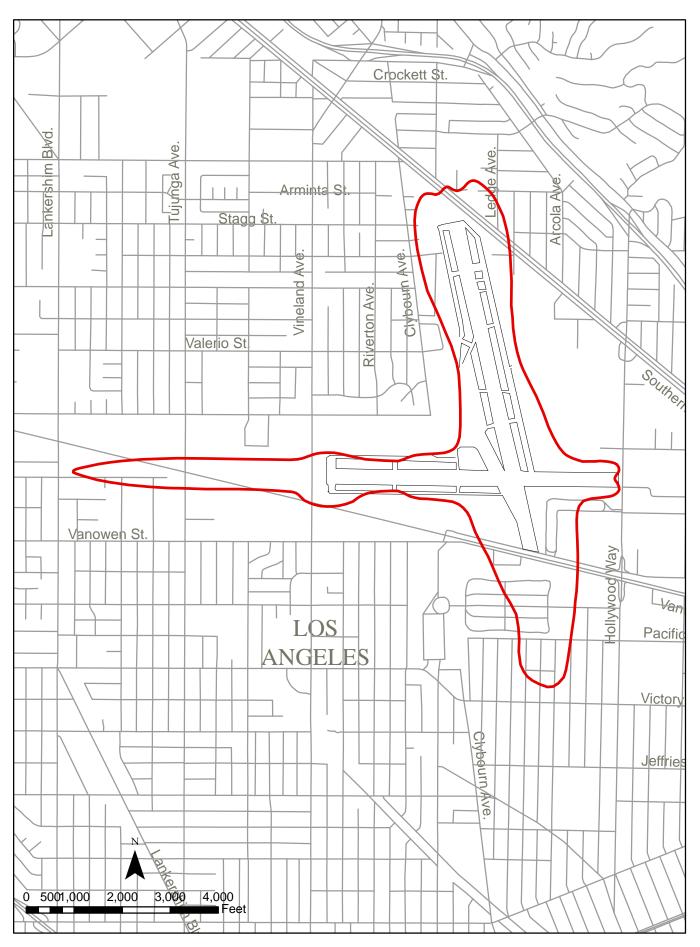
This report describes the data acquired by the monitoring system during the second quarter of 2015. Noise impact boundaries for 65 dB and 70 dB are shown based on these measurements and measurements obtained during the third, and fourth quarter 2014 and first quarter 2015

<sup>1</sup> Prior to January 1, 1986, a CNEL of 70 dB defined the noise impact boundary.

BOB HOPE AIRPORT 70 dB CNEL CONTOUR 2nd Quarter 2015







reported in References 3, 4 and 5. Figure 1 shows the 70 dB contour and Figure 2 shows the 65 dB contour, based on the measured noise data.

# **II. NOISE MEASUREMENTS**

# A. Sites

Aircraft noise levels were monitored at 15 locations prior to February, 1997. Two sites were added in February 1997, and equipment at one site west of the airport was moved to a new location. In July 2003, the monitor station at site 9 was moved 105 feet further west to accommodate new construction at the Fire Station. In December 2012, four new monitor sites were added and one existing site removed as redundant, leaving a total of twenty noise monitoring locations. The noise monitor sites are shown in Figure 3.

# B. Noise Measurement Equipment

Each of the microphone locations uses an identical set of equipment connected to a central control unit. The noise level at each site is stored locally and transmitted by broad band connection to the central site once per 24-hour period. The automated noise and flight track monitoring software processes the data to produce (among other measures) the CNEL at each site. Appendix A provides a brief description of the system.

# C. Noise Data

During this quarter, there were occasional power interruptions and monitor equipment failures, causing some loss of data. Tables 1, 2, and 3 show the aircraft CNEL measured at each monitoring site for each day of the quarter. The dashed lines indicate days for which a monitor was operating for less than 94% of the time. The data for these days was excluded from the averages.

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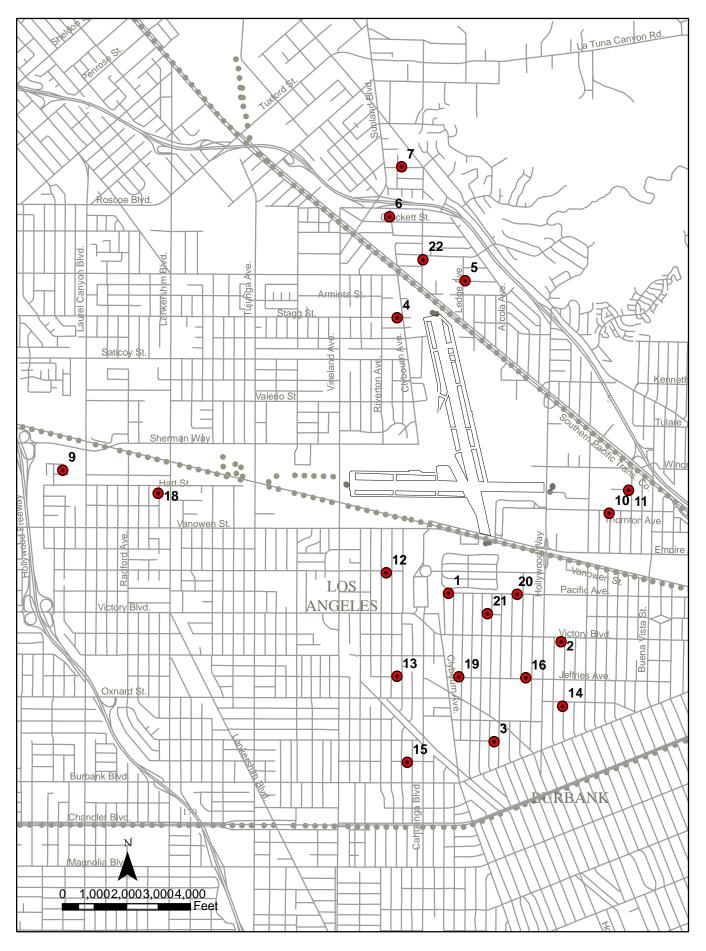


FIGURE 3 - BOB HOPE AIRPORT NOISE MONITOR LOCATIONS

## D. Operational Data

Departure and arrival schedules are provided by the airlines. In addition, operations of air carrier, general aviation and rotary-wing aircraft are determined from the airport's computerized flight tracking system.

## **III. MEASURED NOISE DATA**

Daily CNEL values for the noise monitoring system are listed in Tables 1, 2, and 3. Table 4 lists the average values for each quarter together with the annual average.

# **IV. SCHEDULED AIRLINE AND AIR TAXI OPERATIONS**

The scheduled air carrier and commuter operations for the quarter are shown in Table 5.

# V. CNEL CONTOUR DEVELOPMENT

The contours shown in Figures 1 and 2 are based upon computer-generated "master" contours which are adjusted to reflect the monitoring data. Beginning with the second quarter 2009, noise contours are developed using the master contours produced by Version 7.0 of the Integrated Noise Model (INM), a sophisticated aircraft noise modeling program developed for the Federal Aviation Administration. Inputs to the program consist of aircraft types and performance data, flight paths, numbers of operations, and day/evening/night distribution of flights. The program calculates CNEL values at equally spaced grid points and produces CNEL contour lines at 1 dB intervals. The annual average CNEL values at each site were marked at the appropriate locations on the contour map and the locations of the 65 and 70 dB CNEL contours were determined in the vicinity of each measuring point. These points were then joined following the general shape of the computed contours.

The master contours used in developing the contours for this quarter are based on operations for the 12-month period from January 1, 2014 through December 31, 2014. These replaced the previous master set of CNEL Contours which were based on operations for the 12-month period from July 2008 through June 2009.

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#### TABLE 1. CNEL VALUES FOR APRIL 2015

#### RMS NUMBER

Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
04/01/15																				
04/02/15																				
04/03/15						-			-		-			-				-		
04/04/15																				
04/05/15																				
04/06/15																				
04/07/15																				
04/08/15																				
04/09/15																				
04/10/15																				
04/11/15																				
04/12/15																				
04/13/15																				
04/14/15																				
04/15/15																				
04/16/15																				
04/17/15																				
04/18/15																				
04/19/15																				
04/20/15		• • • •						• • • •												
04/21/15																				
04/22/15																				
04/23/15																				
04/24/15																				
04/25/15																				
04/26/15									-			-						-	-	
04/27/15																				
04/28/15																				
04/29/15																				
04/30/15	61.7	58.8	59.4	54.1	54.6	49.3	54.1	61.9	53.5	51.9	54.2	58.0	55.5	58.7	59.7	61.4	61.6	64.3	65.7	58.2

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#### TABLE 2. CNEL VALUES FOR MAY 2015

#### RMS NUMBER

Date 1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
05/01/15	59.0	60.0		56.4	56.6	52.1	61.5	52.5	52.6	54.0	56.0	56.8	57.9		60.9	61.0	64.4	65.6	63.1
05/02/15	56.5	57.2		53.8	53.8		56.4	50.8	49.0	51.8	53.4	55.2	55.1		56.4	58.9	62.0	63.2	63.0
05/03/15	58.4	59.2		54.3	49.4		60.9	50.7	51.7	53.4	57.5	55.5	59.3		60.0	62.0	63.8	65.4	61.9
05/04/15	59.6	60.3		55.0	50.0		60.7	54.7	60.3	53.9	59.1	56.6	60.2		59.9	62.9	64.6	65.7	60.9
05/05/15	59.9	60.1		57.6	51.7	52.3	62.4	53.5	51.7	55.0	59.7	56.7	60.8		62.3	63.7	65.2	66.9	59.0
05/06/15	60.0	60.1		56.9	54.0	55.5	62.8	53.3	52.3	55.5	60.1	56.7	60.4		64.7	62.8	64.9	66.3	61.7
05/07/15	59.9	60.2		57.1	52.5	56.2	62.9	53.4	51.7	54.4	59.6	56.9	60.3		63.1	63.0	65.2	66.6	60.5
05/08/15	61.0	61.9		56.7	54.5	53.9	62.3	53.9	52.4	56.0	59.0	58.2	60.5		62.1	63.6	66.3	67.6	60.0
05/09/15	56.7	57.2		51.4	51.4	53.6	58.1	53.3	53.1	51.6	56.0	53.3	57.7		57.0	60.4	62.0	64.1	60.2
05/10/15	59.0	60.1		53.0	46.1	53.6	61.3	53.4	50.7	53.6	57.3	56.4	58.8		61.2	62.0	64.2	65.7	55.7
05/11/15	58.2	59.2		57.0	56.6	57.9	61.0	50.6	50.7	54.0	58.1	55.6	59.1		60.7	62.5	64.2	65.8	63.0
05/12/15 63.7	59.3	59.5	56.1	56.7	54.1	54.2	62.7	53.7	55.5	54.4	59.7	56.4	60.1	62.5	61.9	63.1	64.8	66.7	59.9
05/13/15 62.0	59.1	59.7	55.3	55.9	55.6	60.0	62.6	53.1	55.0	54.3	59.1	56.3	59.4	60.4	61.5	62.5	64.5	66.0	65.3
05/14/15 63.0	60.3	60.8	58.6	59.9	57.4	54.7	63.6	54.4	50.7	54.9	59.9	57.5	60.4	62.1	62.6	63.3	65.9	67.2	61.6
05/15/15 61.9	60.5	61.4	55.6	58.0	57.9	57.9	64.0	53.8	54.6	54.5	59.5	58.0	61.0	63.0	63.2	63.3	66.0	67.4	62.9
05/16/15 61.1	57.8	59.0	55.0	55.5	50.4	48.7	58.5	51.3	47.9	53.4	59.0	55.1	59.1	59.9	57.6	61.6	63.7	65.0	56.0
05/17/15 61.2	58.9	59.9	54.0	56.6	48.5	45.9	62.1	51.6	49.3	53.5	57.2	56.3	59.2	60.7	61.3	61.9	64.6	65.9	54.9
05/18/15 62.4	59.7	60.6	53.7	55.2	51.2	53.7	61.2	58.0	53.7	55.5	59.3	57.6	60.4	61.7	60.8	63.0	65.3	66.6	59.1
05/19/15 62.1																			
05/20/15 61.8																			
05/21/15 62.1																			
05/22/15 61.6																			
05/23/15 58.8																			
05/24/15 59.5																		-	
05/25/15 61.4																			
05/26/15 63.1																			
05/27/15 62.5																			
05/28/15 62.4																			
05/29/15 61.7																62.5			
05/30/15 59.0																60.2			
05/31/15 60.9	57.5	58.3	55.0	52.9	45.0	45.5		51.5	47.6	52.8	58.0	54.5	58.8	59.2	60.8	61.4	63.3	65	54.6

 AVERAGE
 61.8
 59.0
 59.8
 55.4
 55.9
 53.1
 54.3
 62.0
 53.2
 52.7
 54.0
 58.5
 56.3
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 61.0
 61.6
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 64.5
 66.0
 60.6

 NO. DAYS
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#### TABLE 3. CNEL VALUES FOR JUNE 2015

#### RMS NUMBER

Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	18	19	20	21	22
06/01/15	62.0	59.0	59.9	57.3	53.3	48.6	55.6		53.7	54.8	53.3	58.3	56.3	59.4	60.9	59.9	62.6	64.6	67.4	57.4
06/02/15																	62.8			
06/03/15	61.8	59.0	59.6	56.8	54.7	44.5	46.5		52.7	51.6	53.6	58.7	56.2	59.6	60.7	64.5	62.7	64.8	64.7	57.5
06/04/15	62.1	60.8	62.0	56.8	56.1	51.1	50.9		53.2	52.4	53.8	58.7	58.2	60.2	62.8	62.6	63.1	66.2	65.6	59.2
06/05/15	61.5	59.5	59.9	57.7	59.8	52.8	52.5		53.5	52.0	53.1	58.5	57.2	59.3	61.6	63.1	62.6	65.0	66.6	60.3
06/06/15	59.1	56.1	57.4	53.1	54.1	47.6	50.4		48.4	48.9	51.7	55.9	53.1	57.6	58.2	57.9	60.4	61.9	66.6	62.6
06/07/15	61.0	58.8	59.5	57.3	52.0	49.5	54.0		54.0	49.2	52.7	56.6	56.1	59.0	60.8	60.7	62.2	64.6	66.0	62.0
06/08/15	61.8	58.7	59.3	58.7	61.1	45.8	54.6		56.8	51.2	52.7	57.4	56.1	58.8	60.6	60.8	62.1	64.8	66.4	64.5
06/09/15	58.4	58.3	59.3	57.2	58.7	59.7	57.2		53.6	53.8	53.5	55.2	56.9	55.5	64.1	61.8	59.0	64.4	66.9	62.3
06/10/15	62.7	59.9	60.9	55.7	55.8	50.2	51.2		55.9	53.5	54.9	59.5	57.3	60.7	62.2	62.7	63.7	65.7	63.4	57.4
06/11/15	62.1	59.0	59.8	54.0	55.8	49.6	52.2		50.9	46.8	53.7	58.8	55.9	60.3	61.0	63.0	63.2	65.0	66.0	60.6
06/12/15	62.2	60.2	61.4	56.0	61.0	53.2	53.0		53.2	51.3	53.7	58.6	57.5	60.9	62.4	62.9	64.4	66.1	64.0	61.4
06/13/15	59.0	57.2	57.7	50.7	53.0	48.1	51.5		51.2	53.1	50.6	55.4	54.0	56.6	59.1	58.4	59.8	62.5	58.0	63.3
06/14/15	62.3	60.5	61.6	54.7	55.1	48.5	55.6		54.3	52.7	53.6	58.2	58.7	60.7	63.0	60.4	63.4	66.6	60.4	56.0
06/15/15	61.6	59.5	60.9	55.9	52.3	48.3	53.1		50.7	50.2	52.5	57.8	57.2	59.7	62.0	61.9	63.1	65.6	54.3	54.8
06/16/15	61.4	59.4	60.4	56.7	53.7	51.3	54.3	62.9	54.5	53.3	53.3	57.1	57.4	58.5	61.7	62.1	62.3	65.1	56.7	59.0
06/17/15																				
06/18/15																				
06/19/15	61.2	59.4	60.3	55.8	53.9	50.8	51.7	62.9	54.8	55.7	53.5	57.6	57.5	59.7	61.4	62.0	62.6	65.3	59.8	59.7
06/20/15																				
06/21/15																				
06/22/15																				
06/23/15																				
06/24/15																				
06/25/15																				
06/26/15																				
06/27/15																				
06/28/15																				
06/29/15																				
06/30/15	61.8	59.8	58.8	55.8	55.1		55.5	61.2	54.0	52.1	54.0	57.7	57.7	59.4	62.1	60.3	62.7	65.9	58.6	57.8
AVERAGE		59.1													61.4	61.4	62.4	64.9	63.3	60.0
NO. DAYS	30	30	29	30	30	29	30	15	30	30	30	30	30	30	30	30	30	30	30	30

QTR. AVG. 61.4 59.0 59.8 56.1 56.3 53.6 54.9 61.5 53.2 52.7 53.8 57.9 56.4 59.1 61.3 61.2 62.1 64.6 65.2 61.1 NO. DAYS 80 91 90 80 91 90 88 73 91 91 91 91 91 91 91 80 91 91 91 91 91 91

Site	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	4 Quarter
No.	2014	2014	2015	2015	Average
1	61.0	60.7	60.8	60.3	60.7
2	58.6	58.7	58.8	58.3	58.6
3	59.7	59.6	59.8	59.1	59.5
4	56.2	57.1	57.1	55.0	56.4
5	55.6	57.4	57.4	55.7	56.6
6	52.4	54.0	54.6	53.2	53.6
7	54.4	55.0	54.2	54.4	54.5
9	61.5	62.2	61.3	60.1	61.4
10	53.1	53.4	54.1	52.5	53.3
11	53.0	53.9	54.8	51.7	53.5
12	52.7	53.9	54.1	53.1	53.5
13	57.4	57.1	57.2	58.0	57.4
14	56.2	56.1	56.2	55.8	56.0
15	59.0	58.6	58.7	58.4	58.7
16	60.9	60.9	60.9	60.3	60.8
18	60.8	60.7	60.7	60.5	60.7
19	61.9	61.6	61.6	61.4	61.6
20	64.5	64.3	64.3	63.9	64.3
21	65.9	65.8	65.8	64.4	65.5
22	59.7	59.5	59.5	60.6	59.8

# TABLE 4. AVERAGE CNEL VALUES

# Table 5.WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI<br/>FLIGHTS FOR THE SECOND QUARTER 2015

AIRCRAFT	AS D8-		OULE IN AS B7:	EFFECT	FROM AS CR	4/1/15	to AS CRJ	4/1/15	1 DAY AS B7:	
-	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY EVENING	0 0	0 0	0 0	0 0	14 6	14 6	0 0	0 0	20 0	13 7
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	20	20	0	0	20	20
			-	EFFECT	FROM US B7	4/1/15	to	4/1/15		
	DEP	19US A32 ARR	DEP	ARR	DEP	ARR	US CR. DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	0	0	0	0
EVENING NIGHT	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
TOTAL	0	0	0	0	0	0	0	0	0	0
		SCHED	DULE IN	EFFECT	FROM	4/1/15	to	4/1/15		
	US CR		US CR		AA ME		WN B73		WN B7	
DAY	DEP 0	ARR 0	DEP 19	ARR 19	DEP 0	ARR 0	DEP 0	ARR 0	DEP 21	ARR 14
EVENING	Õ	0	0	7	Õ	Õ	0	0	0	7
NIGHT	0	0	7	0	0	0	0	0	0	0
TOTAL	0	0	26	26	0	0	0	0	21	21
			-	EFFECT	-	4/1/15	to	4/1/15	75	
	WN B7 DEP	ARR	WN B7 DEP	ARR	DEP	20UA B73 ARR	DEP	UA B73 ARR	DEP	ARR
DAY	237	217	0	0	0	0	0	0	0	0
EVENING	44	64	0	0	0	0	0	0	0	0
NIGHT TOTAL	0 281	0 281	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
						-			-	-
	LIA B7	SCHEL 57UA RJ	DULE IN	EFFECT UA CR	-	4/1/15 FE A30	to 0	4/1/15 FE A31	0	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	28	21	13	6	0	0	0	1
EVENING NIGHT	0 0	0 0	1 0	8 0	5 0	12 0	0 0	0 0	5 0	0 4
TOTAL	0 0	0	29	29	18	18	0	0	5	5
		SCHE		EFFECT	FROM	4/1/15	to	4/1/15		
	UPS A	300	UPS B	757	DL B7	52	DL CRJ		DL CR	
DAY	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY EVENING	3 5	4 0	0 0	0 0	0 0	0 0	18 0	11 7	0 0	0 0
NIGHT	0	4	0	0	0	0	0	0	0	Õ
TOTAL	8	8	0	0	0	0	18	18	0	0
				EFFECT		4/1/15	to	4/1/15		
	DL CR		B6 A32		FW2 A				TOTAL	
DAY	DEP 0	ARR 0	DEP 0	ARR 0	DEP 0	ARR 0			DEP 373	ARR 320
EVENING	0	0	7	7	0	0			73	125
NIGHT	0	0	0	0	0	0			7	8
TOTAL	0	0	7	7	0	0			453	453

Table 5.	WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI
	FLIGHTS FOR THE SECOND QUARTER 2015

AIRCRAFT DAY EVENING NIGHT TOTAL	AS D8-0 DEP 0 0 0 0		OULE IN E AS B73 DEP 0 0 0 0 0		FROM AS CRJ DEP 14 6 0 20	4/2/15 17 ARR 14 6 0 20	to AS CRJ DEP 0 0 0 0	4/7/15 ARR 0 0 0 0	6 DAY AS B73 DEP 20 0 0 20	
DAY EVENING NIGHT TOTAL	US A31 DEP 0 0 0 0		OULE IN E OUS B73 DEP 0 0 0 0 0		FROM US B73 DEP 0 0 0 0	4/2/15 73 ARR 0 0 0 0	to US CRJ DEP 0 0 0 0	4/7/15 ARR 0 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	US CRJ DEP 0 0 0 0		ULE IN E US CR. DEP 21 0 7 28	-	FROM AA MD8 DEP 0 0 0 0	4/2/15 30 ARR 0 0 0 0	to WN B73 DEP 0 0 0 0	4/7/15 73 ARR 0 0 0 0	WN B7 DEP 21 0 0 21	375 ARR 14 7 0 21
DAY EVENING NIGHT TOTAL	WN B73 DEP 237 44 0 281		OULE IN E WN B73 DEP 0 0 0 0			4/2/15 0UA B73 ARR 0 0 0 0	to 73 DEP 0 0 0 0	4/7/15 UA B73 ARR 0 0 0 0	75 DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	UA B75 DEP 0 0 0 0	SCHED 7UA RJ ARR 0 0 0 0	DLE IN E DEP 28 1 0 29	FFECT UA CR ARR 21 8 0 29		4/2/15 FE A30 ARR 6 12 0 18	to 0 DEP 0 0 0 0	4/7/15 FE A310 ARR 0 0 0 0	0 DEP 0 5 0 5	ARR 1 0 4 5
DAY EVENING NIGHT TOTAL	UPS A3 DEP 3 5 0 8		OULE IN E UPS B7 DEP 0 0 0 0		FROM DL B75 DEP 0 0 0 0	4/2/15 2 ARR 0 0 0 0	to DL CRJ DEP 18 0 0 18	4/7/15 ARR 11 7 0 18	DL CR DEP 0 0 0 0	J7 ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	DL CRJ DEP 0 0 0 0		DULE IN E B6 A320 DEP 0 7 0 7		FROM FW2 A3 DEP 0 0 0 0	4/2/15 319 ARR 0 0 0 0	to	4/7/15	TOTAL DEP 375 73 7 455	S ARR 322 125 8 455

Table 5.	WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI
	FLIGHTS FOR THE SECOND QUARTER 2015

AIRCRAFT DAY EVENING NIGHT TOTAL	AS D8-Q4	ARR DE 0 0 0 0 0 0	S B7377	, ARR ) )	AS CRJ7 DEP 14 6 0	, ARR 14 6 0	AS CRJ DEP 0 0 0	ARR 0 0 0	20 0	
DAY EVENING NIGHT TOTAL	US A319U	ARR DE ) 0 ) 0	S B7372	2 ARR ) )	US B737 DEP 0 0 0	3 ARR 0 0 0	US CRJ DEP 0 0 0	0 0 0	0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	US CRJ7	ARR DE ) 21 ) 0 ) 7	S CRJ9 EP A I 2 7 C	ARR 21 7	AA MD80 DEP 0 0 0	) ARR 0 0 0	0 0	ARR 0 0 0	21 0 0	75 ARR 14 7 0 21
DAY EVENING NIGHT TOTAL	WN B7377 DEP A 233 2 50 7 0 0	ARR DE 211 0 72 0	N B737	8 \RR ) )	UA A320 DEP 0 0 0	UA B737 ARR 0 0 0	3 DEP 0 0 0	0 0 0	DEP 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	UA B757U	ARR DE ) 28 ) 1 ) 0	L EP 4 3 2 8 0	JA CRJ7 \RR 21 }	, DEP 13 5 0	FE A300 ARR 6 12 0	DEP 0 0	0 0 0	DEP 0 5 0	ARR 1 0 4 5
DAY EVENING NIGHT TOTAL	UPS A300	ARR DE 6 0 7 0 6 0	PS B757	7 ARR ) )	DL B752 DEP 0 0 0	ARR 0 0 0	18 0	ARR		7 ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	DL CRJ9	ARR DE ) 0 ) 7 ) 0	6 A320	ARR ) 7	FW2 A31 DEP 0 0 0		to		371 79 7	ARR 316 133 8 457

# Table 5.WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI<br/>FLIGHTS FOR THE SECOND QUARTER 2015

AIRCRAFT	AS D8- DEP		OULE IN I AS B73 DEP	EFFECT 377 ARR	FROM AS CR、 DEP	4/12/15 J7 ARR	to AS CRJ DEP	6/3/15 ARR	53 DA AS B73 DEP	
DAY EVENING NIGHT TOTAL	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	14 6 0 20	14 6 0 20	0 0 0 0	0 0 0 0	20 0 0 20	13 7 0 20
		9US A32	20US B73		US B73		US CRJ			
DAY EVENING NIGHT TOTAL	DEP 0 0 0 0	ARR 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	US CR. DEP 0 0 0 0		DULE IN I US CR DEP 21 0 7 28	EFFECT J9 ARR 21 7 0 28	FROM AA MD DEP 0 0 0 0 0	4/12/15 80 ARR 0 0 0 0 0	to WN B73 DEP 0 0 0 0	6/3/15 373 ARR 0 0 0 0 0	WN B7 DEP 21 0 0 21	375 ARR 14 7 0 21
DAY EVENING NIGHT TOTAL	WN B7: DEP 233 50 0 283		OULE IN I WN B7 DEP 0 0 0 0	EFFECT 378 ARR 0 0 0 0 0		4/12/15 20UA B73 ARR 0 0 0 0		6/3/15 UA B73 ARR 0 0 0 0 0	75 DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	UA B75 DEP 0 0 0 0	SCHEE 57UA RJ ARR 0 0 0 0 0	DULE IN I DEP 31 6 0 37	EFFECT UA CR ARR 18 19 0 37	-	4/12/15 FE A30 ARR 7 0 0 7		6/3/15 FE A31 ARR 0 0 0 0 0	0 DEP 0 5 0 5	ARR 1 0 4 5
DAY EVENING NIGHT TOTAL	UPS A3 DEP 3 5 0 8		DULE IN I UPS B DEP 0 0 0 0	EFFECT 757 ARR 0 0 0 0	FROM DL B75 DEP 0 0 0 0	4/12/15 52 ARR 0 0 0 0	to DL CRJ DEP 18 0 0 18	6/3/15 ARR 11 7 0 18	DL CR. DEP 0 0 0 0	J7 ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	DL CR. DEP 0 0 0 0		DULE IN I B6 A32 DEP 0 7 0 7	EFFECT 0 ARR 0 7 0 7	FROM FW2 A3 DEP 0 0 0 0	4/12/15 319 ARR 0 0 0 0	to	6/3/15	TOTAL DEP 368 79 7 454	S ARR 314 132 8 454

DAY

NIGHT

TOTAL

EVENING

				EFFECT		6/4/15	to	6/6/15	3.00	DAYS
AIRCRAFT	AS D8- DEP	Q400 ARR	AS B73 DEP	377 ARR	AS CR DEP	.J7 ARR	AS CRJ DEP	ARR	AS B73 DEP	378 ARR
DAY	0	0	0	0	14	14	0	0	20	13
EVENING	0	0	0	0	6	6	0	0	0	7
NIGHT	0 0	0	0 0	0 0	0 20	0 20	0 0	0 0	0	0
TOTAL	0	0	0	0	20	20	0	0	20	20
				EFFECT		6/4/15	to	6/6/15		
	US A31 DEP	19US A32 ARR	20US B7: DEP	372 ARR	US B7: DEP	373 ARR	US CR. DEP	J ARR		
DAY	DEP 0	ARR 0	DEP 0	ARR 0	DEP 0	AKK 0	DEP 0	arr 0	DEP 0	ARR 0
EVENING	0 0	0 0	0	0	0 0	0	0 0	0	0	0 0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0
		SCHEE	DULE IN	EFFECT	FROM	6/4/15	to	6/6/15		
	US CR.	-	US CR		AA MD		WN B73		WN B7	
DAY	DEP 0	ARR 0	DEP 21	ARR 27	DEP 0	ARR 0	DEP 0	ARR 0	DEP 21	ARR 14
EVENING	0	0	6	7	0	0	0	0	0	7
NIGHT	0	0	7	0	0	0	0	0	0	0
TOTAL	0	0	34	34	0	0	0	0	21	21
		SCHEE	DULE IN	EFFECT	FROM	6/4/15	to	6/6/15		
	WN B7	377	WN B7	378	UA A3	20UA B73	-	UA B73	-	
DAV	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY EVENING	233 50	211 72	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	283	283	0	0	0	0	0	0	0	0
		SCHEE		EFFECT	FROM	6/4/15	to	6/6/15		
	UA B75	57UA RJ		UACR	-	FE A30		FE A31	0	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY EVENING	0 0	0 0	17 6	10 13	4 0	4 0	0 0	0 0	0 5	1 0
NIGHT	0	0	0	0	0	0	0	0	0	4
TOTAL	0	0	23	23	4	4	0	0	5	5
		SCHER		EFFECT	EDOM	6/4/15	to	6/6/15		
	UPS A3		UPS B		DL B7		to DL CRJ		DL CR.	J7
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	18	11	0	0
EVENING NIGHT	5 0	0 4	0 0	0 0	0 0	0 0	0 0	7 0	0 0	0 0
TOTAL	8	4 8	0	0	0	0	0 18	0 18	0	0
		00115-				0////-		0/0/15		
	DL CR.		DULE IN B6 A32	EFFECT	FROM FW2 A	6/4/15 319	to	6/6/15	TOTAL	s
	DEP	ARR	DEP	ARR	DEP	ARR			DEP	ARR
	•	•	•	•	•	•				

# Table 5.WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI<br/>FLIGHTS FOR THE SECOND QUARTER 2015

# Table 5.WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI<br/>FLIGHTS FOR THE SECOND QUARTER 2015

AIRCRAFT DAY EVENING NIGHT TOTAL	AS D8- DEP 0 0 0 0		DULE IN AS B73 DEP 0 0 0 0	EFFECT 377 ARR 0 0 0 0	FROM AS CR DEP 14 7 0 21	6/7/15 J7 ARR 14 7 0 21	to AS CRJ DEP 0 0 0 0	6/30/15 ARR 0 0 0 0	24.00 AS B73 DEP 21 0 0 21	DAYS 78 ARR 14 7 0 21
DAY EVENING NIGHT TOTAL	US A3 DEP 0 0 0 0	SCHEI 19US A32 ARR 0 0 0 0 0		EFFECT 372 ARR 0 0 0 0 0	FROM US B73 DEP 0 0 0 0	6/7/15 373 ARR 0 0 0 0 0	to US CRJ DEP 0 0 0 0	6/30/15 ARR 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	US CR DEP 0 0 0 0		DULE IN US CR DEP 21 6 7 34	EFFECT J9 ARR 27 7 0 34	FROM AA MD DEP 0 0 0 0	6/7/15 80 ARR 0 0 0 0	to WN B73 DEP 0 0 0 0	6/30/15 373 ARR 0 0 0 0	WN B73 DEP 21 0 0 21	375 ARR 14 7 0 21
DAY EVENING NIGHT TOTAL	WN B7 DEP 224 66 0 290		DULE IN WN B7 DEP 0 0 0 0	EFFECT 378 ARR 0 0 0 0 0		6/7/15 20UA B73 ARR 0 0 0 0 0	to 573 DEP 0 0 0 0	6/30/15 UA B73 ARR 0 0 0 0 0	75 DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	UA B7 DEP 0 0 0 0	SCHEE 57UA RJ ARR 0 0 0 0 0	DULE IN DEP 17 6 0 23	EFFECT UA CR ARR 10 13 0 23		6/7/15 FE A30 ARR 4 0 0 4	to 0 DEP 0 0 0 0	6/30/15 FE A31 ARR 0 0 0 0 0	0 DEP 0 5 0 5	ARR 1 0 4 5
	UPS A		DULE IN UPS B	EFFECT 757	FROM	6/7/15 DL B75	to 2	6/30/15 DL CRJ		DL CRJ7
DAY EVENING NIGHT TOTAL	DEP 3 5 0 8	ARR 4 0 4 8	DEP 0 0 0 0	ARR 0 0 0 0	DEP 0 0 0 0	ARR 0 0 0 0	DEP 18 0 0 18	ARR 11 7 0 18	DEP 0 0 0 0	ARR 0 0 0 0
DAY EVENING NIGHT TOTAL	DL CR DEP 0 0 0 0		DULE IN B6 A32 DEP 0 7 0 7	EFFECT 20 ARR 0 7 0 7 7	FROM FW2 A3 DEP 0 0 0 0	6/7/15 319 ARR 0 0 0 0 0	to	6/30/15	TOTAL DEP 343 102 7 452	S ARR 309 135 8 452

## TABLE 5. (CONTINUED)

#### SECOND QUARTER 2015

PERIOD TOTALS FOR AIR CARRIERS AND AIR TAXIS

#### **AIR CARRIERS**

	-	
	DEP	<u>ARR</u>
DAY	4071	3789
EVE	1050	1228
NIGHT	0	104
TOTAL	5121	5121
AIR TAXIS		
	DEP	ARR
DAY	1122	907
EVE	183	489
NIGHT	91	0
NIGHT	31	0

INIGELI	91	0
TOTAL	1396	1396

#### AIR CARRIERS AND AIR TAXIS

	DEP	ARR
DAY	5193	4696
EVE	1233	1717
NIGHT	91	104
TOTAL	6517	6517

## VI. INCOMPATIBLE LAND USE

The contours shown in Figures 1 and 2 were digitized and overlaid on a digital land use map of the area around the Airport. The total areas enclosed by the 65 and 70 dB CNEL contours were 544.7 and 234.5 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 5.59 acres within the 65 dB contour of which 0.37 acres were also within the 70 dB contour.

It should be noted that the above incompatible land areas do not include the soundproofed schools in the vicinity of the Airport (the Luther Burbank Middle School, St. Patrick and Glenwood Schools). The above incompatible land use areas also do not include those residences to which the Airport has acquired avigation easements. Within the 65 dB contour, the Airport has acquired avigation easements, through its ongoing residential sound insulation program, to 102 parcels of land. Those 102 parcels total 14.54 acres. One of the 102 parcels is also located within the 70 dB contour. Within the 65 dB contour, the Airport has also acquired avigation easements, under the Court of Appeal decision in <u>Baker v. Burbank-Glendale-</u><u>Pasadena Airport Authority</u>, 220 Cal. App. 3d 1602 (1990), to 56 parcels of land. For 48 of the 56 parcels, the Authority has acquired avigation easements both through <u>Baker</u> and through its ongoing sound insulation program. Those 48 parcels are included in the total number of sound insulation program avigation easements set forth above. The 7 remaining <u>Baker</u> easement parcels total 0.89 acres.

It should be noted that the Airport Authority has made repeated attempts over the past several years to acoustically treat and obtain avigation easements at 38 single family residential parcels, totaling approximately 5.46 acres of the incompatible land use area within the 65 dB contour. Owners of these parcels have either refused to respond to notices regarding the sound insulation program, have withdrawn from the program, or own properties with major building code deficiencies that prevent them from participating.

The estimated numbers of incompatible residences are 40 within the 65 dB contour, of which 2 are also within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 108 and 5, respectively.

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## REFERENCES

- California Department of Transportation, Division of Aeronautics, "Noise Standards", California Code of Regulations, Title 21, Chapter 2.5, Subchapter 6.
- 2. L-30488, Department of Transportation, State of California, 27 June 1984.
- "Quarterly Noise Monitoring at Burbank Airport, Third Quarter 2014", AAAI Report 1444.
- "Quarterly Noise Monitoring at Burbank Airport, Fourth Quarter 2014", AAAI Report 1446.
- "Quarterly Noise Monitoring at Bob Hope Airport, First Quarter 2015", AAAI Report 1468.

APPENDIX A NOISE MONITOR INSTRUMENTATION

# APPENDIX A NOISE MONITOR INSTRUMENTATION

The permanent noise monitor system, manufactured by Bruel & Kjaer, consists of 20 noise monitoring terminals (NMT) connected to a central site by DSL or wireless connections. The system block diagram showing the major elements is shown in Figure A-1. The electrical signal generated by the microphone/preamplifier assembly at each site is processed and saved locally in the B & K sound level meter. The signal is passed through an A-weighting filter and is then detected and converted to a digital level signal in decibels with a resolution of 0.1 dB.

The stored sound level data at each site is dumped once every 24-hour period via wireless or DSL connection to the central site. The data received by the central site are processed by the ANOMS computer software. According to preset parameters, the noise is separated into two categories--aircraft noise and community noise. Each event attributed to an aircraft is saved in a noise event file. Computations are made of hourly noise level, community noise equivalent level, runway use, and other parameters. A wide variety of data presentations is available by exercising a number of routines provided by B & K, as well as special-purpose routines that can be generated by the user.

The locations of the remote sites (shown in Figure 3) are listed by latitude and longitude in Table A-1.

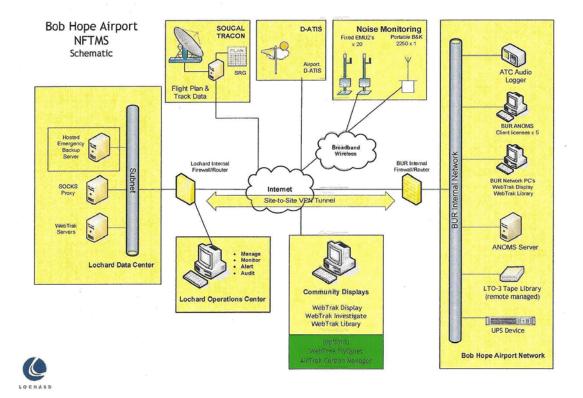


Figure A-1. Permanent Noise Monitor System Schematic

# TABLE A-1 NOISE MONITOR SITE LOCATIONS

NMT	Latitude	Longitude
1	34.188424	-118.358983
2	34.184296	-118.347330
3	34.175731	-118.354197
4	34.212022	-118.364391
5	34.215261	-118.357381
6	34.220705	-118.365214
7	34.224979	-118.363989
9	34.198871	-118.398889
10	34.195336	-118.342392
11	34.197321	-118.340376
12	34.190175	-118.365404
13	34.181303	-118.345270
14	34.178786	-118.347134
15	34.173922	-118.363157
16	34.181185	-118.350949
18	34.196899	-118.389014
19	34.181277	-118.357866
20	34.188378	-118.351878
21	34.186700	-118.354939
22	34.217035	-118.361725

APPENDIX B CALIBRATION

# APPENDIX B CALIBRATION

The system was calibrated during setup using a Bruel and Kjaer acoustic calibrator. Acoustic calibrations are performed annually. Electrical calibrations are performed automatically four times per 24-hour day. Figure B-1 shows the calibration summary for January 2013 and Figure B-2 shows the detailed electrical calibration report for Noise Monitor Site 1.

PASADENA PHROORT AUTHORITY

# **Devices Report**

RMT Calibration Results Bob Hope Airport Start Date: 04-Jan-2013 End Date: 31-Jan-2013

Monitor Location: 1 - 1, (Fixed)

Seven Day Period Commencing: Friday January 04, 2013

Calibrated with Sound Calibrator : Never

Number of Calibrations: 27

Average adjustment for this RMT over this period: 0.10 dB

Date Time	Expected Result	Value Measured	Calibration Error
04-Jan-2013 0:00	87.1	87.2	0.1
04-Jan-2013 6:00	87.1	87.2	0.1
04-Jan-2013 12:00	87.1	87.2	0.1
04-Jan-2013 18:00	87.1	87.2	0.1
05-Jan-2013 0:00	87.1	87.2	0.1
05-Jan-2013 6:00	87.1	87.2	0.1
05-Jan-2013 12:00	87.1	87.2	0.1
05-Jan-2013 18:00	87.1	87.2	0.1
06-Jan-2013 0:00	87.1	87.2	0.1
06-Jan-2013 6:00	87.1	87.2	0.1
06-Jan-2013 12:00	87.1	87.2	0.1
06-Jan-2013 18:00	87.1	87.2	0.1
07-Jan-2013 0:00	87.1	87.2	0.1
07-Jan-2013 6:00	87.1	87.2	0.1
07-Jan-2013 12:00	87.1	87.2	0.1
07-Jan-2013 18:00	87.1	87.2	0.1
08-Jan-2013 0:00	87.1	87.2	0.1
08-Jan-2013 6:00	87.1	87.2	0.1
08-Jan-2013 12:00	87.1	87.3	0.2
08-Jan-2013 18:00	87.1	87.2	0.1
09-Jan-2013 0:00	87.1	87.2	0.1
09-Jan-2013 6:00	87.1	87.2	0.1
09-Jan-2013 12:00	87.1	87.2	0.1
09-Jan-2013 18:00	87.1	87.2	0.1
10-Jan-2013 0:00	87.1	87.2	0.1
10-Jan-2013 6:00	87.1	87.2	0.1
10-Jan-2013 12:00	87.1	87.2	0.1

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# **Devices Report**

RMT Calibration Results Bob Hope Airport Start Date: 04-Jan-2013 End Date: 31-Jan-2013

м	onitor Location	04-Jan-2013	11-Jan-2013	18-Jan-2013	25-Jan-2013
1	1	0.1	0.1	0.1	0.1
2	2	0.4	0.4	0.3	0.3
3	3	0.5	0.0	0.0	0.0
4	4	0.3	0.3	0.3	0.3
5	#5	0.2	0.2	0.2	0.2
6	6	0.0	0.0	0.0	0.0
7	7	0.3	0.3	0.3	0.3
9	9	0.2	0.2	0.2	0.2
10	10	0.2	0.2	0.2	0.2
11	11	0.6	0.0	0.0	0.0
12	12	0.3	0.3	0.3	0.3
13	13	0.0	0.0	0.0	0.0
14	14	0.0	0.0	0.0	0.0
15	15	0.0	0.0	0.0	0.0
16	16	0.4	0.4	0.4	0.4
18	18	0.0	0.0	0.1	0.1
19	19	0.0	0.0	0.0	0.0
20	20	0.1	0.0	0.1	0.1
21	21	0.0	0.0	0.0	0.0
22	22	0.0	0.0	0.0	0.0

15-May-2013

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