



ACOUSTICAL ANALYSIS ASSOCIATES, INCORPORATED

**AAAI Report 1398
AAAI Project 88018**

QUARTERLY NOISE MONITORING AT BOB HOPE AIRPORT FOURTH QUARTER 2012

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Prepared for:



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AAAI Project 88018

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AT BOB HOPE AIRPORT
FOURTH QUARTER 2012

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TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
I. INTRODUCTION.....	1
II. NOISE MEASUREMENTS.	4
A. Sites.....	4
B. Noise Measurement Equipment.....	4
C. Noise Data.....	4
D. Operational Data.	6
III. MEASURED NOISE DATA.	6
IV. SCHEDULED AIRLINE AND AIR TAXI OPERATIONS.....	6
V. CNEL CONTOUR DEVELOPMENT.	6
VI. INCOMPATIBLE LAND USE.....	16
REFERENCES.	17

APPENDIX A - NOISE MONITOR INSTRUMENTATION

APPENDIX B - CALIBRATION

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. CNEL VALUES FOR OCTOBER 2012.	7
2. CNEL VALUES FOR NOVEMBER 2012.	8
3. CNEL VALUES FOR DECEMBER 2012.	9
4. AVERAGE CNEL VALUES.	10
5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI FLIGHTS..	11

LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. CNEL 70 CONTOUR FOR BOB HOPE AIRPORT - FOURTH QUARTER 2012.....	2
2. CNEL 65 CONTOUR FOR BOB HOPE AIRPORT - FOURTH QUARTER 2012.....	3
3. NOISE MONITOR LOCATIONS.	5

**QUARTERLY NOISE MONITORING AT BOB HOPE AIRPORT
FOURTH QUARTER 2012**

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 boundary¹. 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. The site to the west replaces Site 8. 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.

This report describes the data acquired by the monitoring system during the fourth quarter of 2012. Noise impact boundaries for 65 dB and 70 dB are shown based on these measurements and measurements obtained during the first, second and third quarter 2012 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.

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

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. 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 digitized and transmitted by phone line to the central site. The computer at the central site 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 was occasional telephone signal interruption and monitor equipment failures, causing some loss of data. In addition, installation of a new state-of-the art noise monitoring system began in mid-December. The previous monitoring system equipment was removed at the same time, so data is not available at many locations for approximate the last two weeks of December. 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.

D. Operational Data

Departure and arrival schedules are provided by the airlines. In addition, airline flight operations are tabulated and provided by airport personnel. Operations of certain general aviation 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 July 2008 through June 2009. This replaced the previous master set of CNEL Contours which were based on operations for the 12-month period from January 2007 through December 2007.

TABLE 1. CNEL VALUES FOR OCTOBER 2012

	RMS NUMBER																	
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	
10/1/2012	59.7	59.6	60.4	52.9	---	55.9	59.6	59.0	49.6	51.1	49.3	56.1	56.8	59.1	64.4	59.4	61.2	
10/2/2012	58.7	59.2	60.9	60.0	---	58.6	63.0	60.1	53.3	59.2	52.0	58.0	56.9	59.7	62.8	59.0	67.7	
10/3/2012	61.9	59.6	59.8	56.9	---	55.8	61.7	61.8	56.2	53.8	49.2	60.2	57.2	60.1	64.2	60.2	62.7	
10/4/2012	62.4	59.6	60.4	60.5	---	56.9	61.0	62.7	56.2	57.3	50.5	61.7	56.5	61.5	63.9	61.6	63.7	
10/5/2012	54.1	53.7	55.1	51.2	---	49.9	54.5	58.7	43.6	45.9	44.4	48.8	48.8	54.5	57.9	53.9	60.2	
10/6/2012	58.1	57.9	61.1	55.7	---	55.6	60.9	58.4	53.3	53.9	43.9	56.5	54.8	59.1	62.5	59.3	59.6	
10/7/2012	60.2	58.5	59.9	53.7	---	60.1	59.7	60.1	59.8	50.4	46.6	59.8	54.9	60.8	61.4	60.8	61.5	
10/8/2012	62.7	61.7	61.3	55.0	---	54.7	59.2	61.2	51.5	53.8	52.0	61.8	57.2	62.4	63.3	62.4	62.2	
10/9/2012	62.7	60.8	61.7	59.7	---	60.0	62.6	62.5	54.3	57.2	53.5	62.4	57.7	62.5	63.5	62.1	65.7	
10/10/2012	62.4	59.6	60.3	55.0	---	---	---	62.1	55.7	55.3	53.2	61.4	57.8	61.7	62.3	61.5	63.5	
10/11/2012	62.3	62.1	61.5	68.6	---	---	---	63.4	47.9	57.5	52.9	61.7	58.5	62.3	66.3	62.3	63.2	
10/12/2012	62.2	62.0	62.5	57.1	---	54.5	57.7	62.9	53.2	53.0	51.8	61.3	59.1	63.1	64.8	62.9	64.0	
10/13/2012	58.0	57.7	58.3	54.6	---	51.3	56.7	57.8	57.9	58.0	43.7	56.5	53.4	60.1	61.2	58.9	59.3	
10/14/2012	59.9	58.7	60.1	59.3	---	54.8	57.2	60.1	59.1	52.5	52.6	58.3	54.5	61.8	62.0	60.4	62.2	
10/15/2012	60.2	59.4	60.6	56.5	---	52.9	52.8	59.9	57.1	53.2	53.9	57.6	57.0	59.8	62.8	59.8	60.8	
10/16/2012	60.3	59.5	60.6	60.0	48.3	55.5	52.3	60.5	51.1	55.3	51.7	58.9	56.9	60.5	62.8	60.7	63.1	
10/17/2012	62.3	60.2	60.6	59.1	51.1	53.2	57.6	61.1	50.1	52.9	49.1	57.9	56.7	60.1	63.0	60.6	61.9	
10/18/2012	63.4	60.7	61.7	56.4	52.6	53.5	54.8	63.1	51.8	53.0	54.0	62.2	57.4	62.1	63.3	62.3	64.2	
10/19/2012	61.4	59.2	60.8	54.8	46.6	49.6	54.2	63.2	52.4	52.1	48.3	59.5	56.1	60.8	62.3	60.8	63.7	
10/20/2012	58.6	57.0	56.9	54.3	50.8	47.8	51.8	60.1	49.9	52.5	46.0	56.6	46.1	57.6	59.6	58.3	61.2	
10/21/2012	61.4	59.0	60.3	56.4	52.3	51.9	56.8	60.7	54.2	41.0	55.7	60.3	54.5	60.7	62.3	60.4	62.0	
10/22/2012	62.2	60.8	60.8	54.3	49.2	56.9	59.0	61.5	52.5	52.5	52.3	61.6	48.6	61.8	63.3	61.6	62.6	
10/23/2012	62.0	59.5	60.1	53.9	51.7	56.1	56.4	62.0	53.2	56.7	50.5	61.1	55.1	61.5	62.0	61.2	63.7	
10/24/2012	56.1	55.7	59.6	63.0	60.7	63.4	62.5	59.9	54.3	59.6	50.1	56.5	57.7	56.6	66.2	56.7	64.0	
10/25/2012	58.8	53.0	56.2	66.1	65.7	68.3	66.5	56.2	50.7	53.0	56.6	54.4	56.1	49.4	66.5	48.7	57.2	
10/26/2012	59.3	59.2	60.0	59.3	50.8	60.0	60.4	60.3	48.3	58.2	49.1	57.9	55.7	60.1	62.5	60.1	61.5	
10/27/2012	55.8	54.7	57.8	58.5	49.6	56.6	57.3	56.1	50.6	55.3	44.3	54.5	50.9	56.4	58.0	57.6	60.6	
10/28/2012	58.9	57.5	58.5	53.5	47.9	58.5	57.8	59.3	52.9	49.3	42.2	57.2	53.9	59.6	60.1	58.8	61.3	
10/29/2012	59.7	59.9	59.6	55.0	50.2	54.2	58.5	58.8	50.1	59.9	45.2	58.6	56.4	60.2	62.8	60.0	60.2	
10/30/2012	61.6	59.0	61.5	59.3	52.3	57.9	59.8	61.0	55.0	57.3	54.2	61.3	56.1	60.9	62.4	60.5	63.2	
10/31/2012	61.8	59.7	60.5	58.0	53.1	57.8	59.6	60.8	57.0	55.4	53.0	59.6	60.4	60.2	62.5	59.8	62.3	
AVERAGE	60.8	59.3	60.2	59.5	56.1	58.4	59.6	60.9	54.3	55.4	51.5	59.5	56.3	60.5	63.1	60.3	62.7	
NO. DAYS	31	31	31	31	16	29	29	31	31	31	31	31	31	31	31	31	31	

TABLE 2. CNEL VALUES FOR NOVEMBER 2012

RMS NUMBER																		
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	
11/1/2012	62.0	60.0	60.4	54.4	51.7	53.3	---	62.1	58.3	54.2	48.1	61.0	57.3	61.6	62.9	61.5	63.4	
11/2/2012	62.2	59.5	60.6	55.5	50.9	53.2	57.3	62.3	48.2	50.3	53.0	62.0	56.7	61.7	62.2	61.6	63.4	
11/3/2012	57.5	57.8	57.0	52.5	48.8	51.0	58.6	58.2	50.9	52.6	46.9	56.9	53.3	57.2	59.2	57.5	60.0	
11/4/2012	59.8	59.9	60.3	55.7	50.2	53.4	60.2	58.3	51.2	49.4	52.7	54.8	57.0	59.6	63.9	59.5	59.7	
11/5/2012	60.4	58.7	59.2	60.8	49.8	53.3	58.3	59.1	54.9	58.0	53.1	58.9	55.1	60.1	63.7	59.8	60.5	
11/6/2012	61.5	59.9	59.7	61.3	54.8	59.1	63.1	60.8	57.5	61.3	55.5	61.2	57.6	60.9	62.8	60.6	65.5	
11/7/2012	62.5	59.9	60.1	56.5	50.2	56.2	61.8	61.5	58.0	59.9	53.8	61.0	57.7	60.9	62.3	60.9	62.8	
11/8/2012	63.4	61.4	61.3	58.1	60.8	58.0	63.2	63.2	55.4	57.4	55.4	62.2	58.8	62.1	63.9	62.1	64.5	
11/9/2012	63.1	65.5	62.9	57.1	59.8	61.1	61.6	62.2	60.9	56.4	64.8	63.6	58.2	64.0	64.5	63.7	63.3	
11/10/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
11/11/2012	58.8	58.7	58.6	54.3	52.3	55.4	57.1	58.8	50.6	47.7	48.9	58.0	54.4	59.4	61.0	59.1	60.6	
11/12/2012	59.5	59.0	59.4	61.8	52.9	57.0	60.3	58.4	46.8	54.0	52.5	58.9	54.3	59.7	61.6	59.6	61.5	
11/13/2012	59.1	58.4	59.1	62.3	55.3	62.2	61.1	58.3	57.2	58.4	51.6	58.2	60.6	59.0	62.0	58.3	62.8	
11/14/2012	60.6	59.1	59.8	57.5	50.9	56.3	59.4	60.0	56.3	54.6	59.2	58.8	58.7	59.6	62.0	59.5	62.0	
11/15/2012	---	---	---	---	45.0	---	---	---	---	---	---	---	---	---	---	---	---	
11/16/2012	---	---	---	---	56.4	---	---	---	---	---	---	---	---	---	---	---	---	
11/17/2012	---	---	---	---	49.1	---	---	---	---	---	---	---	---	---	---	---	---	
11/18/2012	---	---	---	---	64.4	---	---	---	---	---	---	---	---	---	---	---	---	
11/19/2012	---	---	---	---	53.7	---	---	---	---	---	---	---	---	---	---	---	---	
11/20/2012	63.3	62.0	63.6	59.3	60.6	58.0	59.1	62.6	51.6	54.0	54.9	62.6	59.8	63.4	65.1	63.0	64.1	
11/21/2012	58.6	57.5	58.7	55.8	53.5	54.9	57.6	59.3	47.1	49.7	48.1	57.3	56.3	59.6	60.7	59.4	60.2	
11/22/2012	55.6	55.1	56.7	51.5	52.9	57.2	58.7	57.1	49.5	48.8	41.7	56.0	61.1	57.5	58.2	57.7	58.0	
11/23/2012	58.5	58.7	59.3	53.4	56.8	49.4	52.9	60.7	53.2	53.5	50.8	55.7	54.3	58.9	61.4	58.7	61.9	
11/24/2012	57.6	57.7	58.6	53.2	55.5	50.6	55.0	58.5	53.5	52.6	44.9	57.2	54.0	58.4	60.4	57.9	60.1	
11/25/2012	61.0	58.6	59.7	57.1	51.8	53.7	53.6	62.1	48.8	46.7	49.9	58.7	55.0	60.7	61.3	60.5	63.4	
11/26/2012	62.4	60.5	61.8	55.3	54.3	54.5	57.9	61.2	49.0	49.4	49.4	61.8	58.0	62.8	63.8	62.6	62.6	
11/27/2012	63.5	60.5	61.2	59.2	56.9	56.9	62.0	61.8	55.3	57.6	54.8	62.0	---	62.3	62.8	61.8	63.6	
11/28/2012	63.2	59.9	60.6	54.0	56.4	51.6	53.4	62.2	54.5	54.5	56.6	62.2	---	61.1	63.3	61.1	63.3	
11/29/2012	60.7	57.5	57.6	55.9	56.6	50.4	50.9	62.5	51.3	57.0	49.0	59.3	---	58.4	60.3	58.7	64.7	
11/30/2012	62.3	59.9	60.5	56.9	55.5	53.3	54.7	63.5	53.3	57.0	51.1	60.3	---	61.4	62.8	61.5	65.5	
AVERAGE	61.2	59.9	60.2	57.7	56.2	56.3	59.3	61.0	54.7	55.6	55.0	60.1	57.5	60.8	62.5	60.6	62.8	
NO. DAYS	24	24	24	24	29	24	23	24	24	24	24	24	24	20	24	24	24	

TABLE 3. CNEL VALUES FOR DECEMBER 2012

RMS NUMBER																		
Date	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	
12/1/2012	59.7	58.1	59.6	51.4	53.2	48.2	52.5	58.4	48.4	41.2	48.4	57.7	---	60.4	61.7	57.4	60.2	
12/2/2012	63.7	60.9	61.5	62.5	57.7	52.4	63.1	60.9	48.7	48.3	52.3	61.1	58.7	63.6	64.6	53.1	63.0	
12/3/2012	62.6	60.2	60.8	55.0	53.4	---	51.7	60.5	50.4	45.0	52.9	60.9	---	---	63.1	58.2	62.1	
12/4/2012	61.8	60.5	61.4	57.5	55.7	---	60.9	61.7	55.0	58.4	53.9	61.7	---	---	63.5	61.3	63.9	
12/5/2012	62.6	58.9	60.5	59.5	56.5	---	58.1	61.8	53.2	56.6	53.3	61.3	58.7	61.8	62.8	61.8	63.4	
12/6/2012	62.5	61.3	61.9	57.7	55.8	---	56.9	62.2	54.8	53.4	52.1	60.1	---	61.1	64.0	61.7	63.3	
12/7/2012	61.7	60.3	61.1	57.0	58.7	---	54.8	62.2	55.8	54.5	51.7	60.0	57.2	59.7	63.3	61.1	63.3	
12/8/2012	59.7	57.5	58.6	55.9	56.1	---	56.1	58.5	54.2	46.8	47.2	57.4	---	55.9	61.0	58.8	60.2	
12/9/2012	60.6	58.5	59.2	54.8	54.9	---	53.0	60.7	40.1	44.6	51.5	59.4	55.4	58.3	61.2	59.8	62.0	
12/10/2012	61.5	59.4	59.8	60.5	59.9	---	58.2	59.6	58.3	53.9	49.5	60.4	---	58.6	59.7	60.0	61.2	
12/11/2012	62.5	54.8	57.1	58.5	57.1	---	58.8	62.5	---	52.7	54.2	61.5	---	57.4	---	60.4	64.3	
12/12/2012	63.5	---	---	58.7	56.4	54.1	54.7	62.6	52.8	52.4	49.9	57.8	---	---	---	60.9	63.0	
12/13/2012	62.5	---	---	56.5	56.3	57.8	59.7	62.2	54.8	58.1	---	---	---	---	---	61.5	---	
12/14/2012	62.3	---	---	56.0	58.8	55.3	57.8	63.0	52.7	52.0	---	---	---	---	---	61.3	---	
12/15/2012	57.0	---	---	---	55.8	---	61.2	57.0	---	---	---	---	---	---	---	58.1	---	
12/16/2012	62.5	---	---	---	52.1	---	53.7	61.0	---	---	---	---	---	---	---	61.6	---	
12/17/2012	---	---	---	---	53.4	---	---	---	---	---	---	---	---	---	---	61.1	---	
12/18/2012	---	---	---	---	61.4	---	---	---	---	---	---	---	---	---	---	57.5	---	
12/19/2012	---	---	---	---	57.2	---	---	---	---	---	---	---	---	---	---	59.2	---	
12/20/2012	---	---	---	---	49.5	---	---	---	---	---	---	---	---	---	---	60.3	---	
12/21/2012	---	---	---	---	58.4	---	---	---	---	---	---	---	---	---	---	61.7	---	
12/22/2012	---	---	---	---	50.5	---	---	---	---	---	---	---	---	---	---	61.0	---	
12/23/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	61.5	---	
12/24/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	56.8	---	
12/25/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	57.4	---	
12/26/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	61.4	---	
12/27/2012	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	53.6	---	
12/28/2012	---	---	---	---	51.8	---	---	---	---	---	---	---	---	---	---	61.1	---	
12/29/2012	---	---	---	---	55.9	---	---	---	---	---	---	---	---	---	---	59.7	---	
12/30/2012	---	---	---	---	60.6	---	---	---	---	---	---	---	---	---	---	53.8	---	
12/31/2012	---	---	---	---	55.7	---	---	---	---	---	---	---	---	---	---	58.5	---	
AVERAGE	61.9	59.4	60.3	58.0	56.7	54.6	58.1	61.2	53.8	53.7	51.9	60.2	57.7	60.2	62.7	59.9	62.7	
NO. DAYS	16	11	11	14	26	5	16	16	13	14	12	12	4	9	10	31	12	
QTR. AVG.	61.2	59.6	60.2	58.7	56.4	57.4	59.2	61.0	54.3	55.2	53.1	59.9	56.9	60.6	62.8	60.2	62.7	
NO. DAYS	71	66	66	69	71	58	68	71	68	69	67	67	55	64	65	86	67	

TABLE 4. AVERAGE CNEL VALUES

Site No.	1st Quarter 2012	2nd Quarter 2012	3rd Quarter 2012	4th Quarter 2012	4 Quarter Average
1	61.2	61.6	60.8	61.2	61.2
2	59.4	58.8	59.0	59.6	59.2
3	60.0	60.0	60.0	60.2	60.1
4	57.4	56.4	56.8	58.7	57.4
5	58.5	59.6	59.8	56.4	58.7
6	55.5	54.4	53.9	57.4	55.5
7	57.6	58.7	59.5	59.2	58.8
9	60.8	61.6	61.2	61.0	61.2
10	52.6	54.1	53.4	54.3	53.7
11	53.2	54.2	53.1	55.2	54.0
12	52.2	57.0	52.4	53.1	54.2
13	59.9	60.1	59.2	59.9	59.8
14	57.3	56.1	56.2	56.9	56.6
15	60.1	60.3	60.0	60.6	60.3
16	62.1	62.3	62.1	62.8	62.3
17	60.0	60.4	60.4	60.2	60.3
18	62.1	62.8	62.6	62.7	62.6

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI
FLIGHTS FOR THE FOURTH QUARTER 2012**

AIRCRAFT	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12 5 DAYS									
	AS D8-Q400		AS B7377		AS CRJ7		AS CRJ		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	13	13	14	14	0	0	7	0
EVENING	0	0	0	0	7	7	0	0	0	7
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	13	13	21	21	0	0	7	7

	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12									
	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	3	10	0	0
EVENING	0	0	0	0	0	0	6	0	0	0
NIGHT	0	0	0	0	0	0	1	0	0	0
TOTAL	0	0	0	0	0	0	10	10	0	0

	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12									
	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	16	16	0	0	0	0	0	0
EVENING	0	0	0	6	0	0	0	0	0	0
NIGHT	0	0	6	0	0	0	0	0	0	0
TOTAL	0	0	22	22	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12									
	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	269	251	0	0	0	0	0	0	0	0
EVENING	56	74	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	325	325	0	0	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12									
	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	33	26	17	11	0	0	0	1
EVENING	0	0	6	13	0	6	0	0	5	0
NIGHT	0	0	0	0	0	0	0	0	0	4
TOTAL	0	0	39	39	17	17	0	0	5	5

	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12									
	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	14	20	0	0
EVENING	5	0	0	0	0	0	6	0	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	20	20	0	0

	SCHEDULE IN EFFECT FROM 10/1/12 to 10/5/12						TOTALS	
	DL CRJ9		B6 A320		FW2 A319		DEP	ARR
	DEP	ARR	DEP	ARR	DEP	ARR		
DAY	0	0	14	7	0	0	403	373
EVENING	0	0	6	13	0	0	97	126
NIGHT	0	0	0	0	0	0	7	8
TOTAL	0	0	20	20	0	0	507	507

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI
FLIGHTS FOR THE FOURTH QUARTER 2012**

AIRCRAFT	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12 29 DAYS									
	AS D8-Q400		AS B7377		AS CRJ7		AS CRJ		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	13	13	14	14	0	0	7	0
EVENING	0	0	0	0	7	7	0	0	0	7
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	13	13	21	21	0	0	7	7

	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12									
	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	2	8	0	0
EVENING	0	0	0	0	0	0	6	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	8	8	0	0

	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12									
	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	17	17	0	0	0	0	0	0
EVENING	0	0	0	7	0	0	0	0	0	0
NIGHT	0	0	7	0	0	0	0	0	0	0
TOTAL	0	0	24	24	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12									
	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	269	251	0	0	0	0	0	0	0	0
EVENING	56	74	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	325	325	0	0	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12									
	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	33	26	17	11	0	0	0	1
EVENING	0	0	6	13	0	6	0	0	5	0
NIGHT	0	0	0	0	0	0	0	0	0	4
TOTAL	0	0	39	39	17	17	0	0	5	5

	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12									
	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	14	20	0	0
EVENING	5	0	0	0	0	0	6	0	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	20	20	0	0

	SCHEDULE IN EFFECT FROM 10/6/12 to 11/3/12									
	DL CRJ9		B6 A320		FW2 A319		TOTALS			
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	7	0	0	403	372		
EVENING	0	0	6	13	0	0	97	127		
NIGHT	0	0	0	0	0	0	7	8		
TOTAL	0	0	20	20	0	0	507	507		

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI
FLIGHTS FOR THE FOURTH QUARTER 2012**

AIRCRAFT	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12 11 DAYS									
	AS D8-Q400		AS B7377		AS CRJ7		AS CRJ		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	14	14	14	0	0	6	0
EVENING	0	0	0	0	7	7	0	0	0	6
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	14	14	21	21	0	0	6	6

	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12									
	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	2	8	0	0
EVENING	0	0	0	0	0	0	6	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	8	8	0	0

	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12									
	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	17	17	0	0	0	0	0	0
EVENING	0	0	0	7	0	0	0	0	0	0
NIGHT	0	0	7	0	0	0	0	0	0	0
TOTAL	0	0	24	24	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12									
	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	262	244	0	0	0	0	0	0	0	0
EVENING	64	82	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	326	326	0	0	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12									
	UA B757		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	33	26	17	11	0	0	0	1
EVENING	0	0	6	13	0	6	0	0	5	0
NIGHT	0	0	0	0	0	0	0	0	0	4
TOTAL	0	0	39	39	17	17	0	0	5	5

	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12									
	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	14	20	0	0
EVENING	5	0	0	0	0	0	6	0	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	20	20	0	0

	SCHEDULE IN EFFECT FROM 11/4/12 to 11/14/12						TOTALS	
	DL CRJ9		B6 A320		FW2 A319		DEP	ARR
	DEP	ARR	DEP	ARR	DEP	ARR		
DAY	0	0	14	7	0	0	396	366
EVENING	0	0	6	13	0	0	105	134
NIGHT	0	0	0	0	0	0	7	8
TOTAL	0	0	20	20	0	0	508	508

**Table 5. WEEKLY SCHEDULED AIR CARRIER AND AIR TAXI
FLIGHTS FOR THE FOURTH QUARTER 2012**

AIRCRAFT	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12 47 DAYS									
	AS D8-Q400		AS B7377		AS CRJ7		AS CRJ		AS B7378	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	14	14	14	14	0	0	6	0
EVENING	0	0	0	0	7	7	0	0	0	6
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	14	14	21	21	0	0	6	6

	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12									
	US A319		US A320		US B7372		US B7373		US CRJ	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	0	0	0	0	2	8	0	0
EVENING	0	0	0	0	0	0	6	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	8	8	0	0

	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12									
	US CRJ7		US CRJ9		AA MD80		WN B7373		WN B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	17	17	0	0	0	0	0	0
EVENING	0	0	0	7	0	0	0	0	0	0
NIGHT	0	0	7	0	0	0	0	0	0	0
TOTAL	0	0	24	24	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12									
	WN B7377		UA A319		UA A320		UA B7373		UA B7375	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	262	244	0	0	0	0	0	0	0	0
EVENING	64	82	0	0	0	0	0	0	0	0
NIGHT	0	0	0	0	0	0	0	0	0	0
TOTAL	326	326	0	0	0	0	0	0	0	0

	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12									
	UA B737		UA RJ		UA CRJ7		FE A300		FE A310	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	0	0	33	26	17	11	0	0	0	1
EVENING	0	0	6	13	0	6	0	0	5	0
NIGHT	0	0	0	0	0	0	0	0	0	4
TOTAL	0	0	39	39	17	17	0	0	5	5

	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12									
	UPS A300		UPS B757		DL B752		DL CRJ		DL CRJ7	
	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP	ARR
DAY	3	4	0	0	0	0	14	20	0	0
EVENING	5	0	0	0	0	0	6	0	0	0
NIGHT	0	4	0	0	0	0	0	0	0	0
TOTAL	8	8	0	0	0	0	20	20	0	0

	SCHEDULE IN EFFECT FROM 11/15/12 to 12/31/12									
	DL CRJ9		B6 A320		FW2 A319		TOTALS			
	DEP	ARR	DEP	ARR	DEP	ARR	DEP		ARR	
DAY	0	0	14	7	0	0	396		366	
EVENING	0	0	7	14	0	0	106		135	
NIGHT	0	0	0	0	0	0	7		8	
TOTAL	0	0	21	21	0	0	509		509	

TABLE 5. (CONTINUED)

FOURTH QUARTER 2012

PERIOD TOTALS FOR
AIR CARRIERS AND AIR TAXIS

AIR CARRIERS

	<u>DEP</u>	<u>ARR</u>
DAY	3964	3631
EVE	1072	1300
NIGHT	0	105
TOTAL	5036	5036

AIR TAXIS

	<u>DEP</u>	<u>ARR</u>
DAY	1275	1262
EVE	328	433
NIGHT	92	0
TOTAL	1695	1695

AIR CARRIERS AND AIR TAXIS

	<u>DEP</u>	<u>ARR</u>
DAY	5239	4893
EVE	1400	1733
NIGHT	92	105
TOTAL	6731	6731

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 688.0 and 324.2 acres, respectively. The areas of incompatible land uses enclosed by the contours were then computed. The incompatible land use areas were 10.31 acres within the 65 dB contour of which 0.51 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 318 parcels of land. Those 318 parcels total 48.23 acres. None of the 318 parcels are 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 Baker v. Burbank-Glendale-Pasadena Airport Authority, 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 Baker 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 Baker 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 72 single family residential parcels, totaling approximately 10.31 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 74 within the 65 dB contour, of which 3 are also within the 70 dB contour. The estimated numbers of people residing within the 65 and 70 dB CNEL contours are 200 and 8, respectively.

REFERENCES

1. 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.
3. "Quarterly Noise Monitoring at Bob Hope Airport, First Quarter 2012", AAAI Report 1395.
4. "Quarterly Noise Monitoring at Burbank Airport, Second Quarter 2012", AAAI Report 1396.
5. "Quarterly Noise Monitoring at Burbank Airport, Third Quarter 2012", AAAI Report 1397.

APPENDIX A
NOISE MONITOR INSTRUMENTATION

APPENDIX A

NOISE MONITOR INSTRUMENTATION

The permanent noise monitor system, manufactured by Tracor, consists of 17 remote monitoring stations (RMS) connected to a central site by telephone lines. 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 in the RMS electronics. 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 digitized sound level is transmitted every half second by telephone line to the central site. The data received by the central site are processed by the computer. 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 Tracor, 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 relative to the runway thresholds in Table A-1.

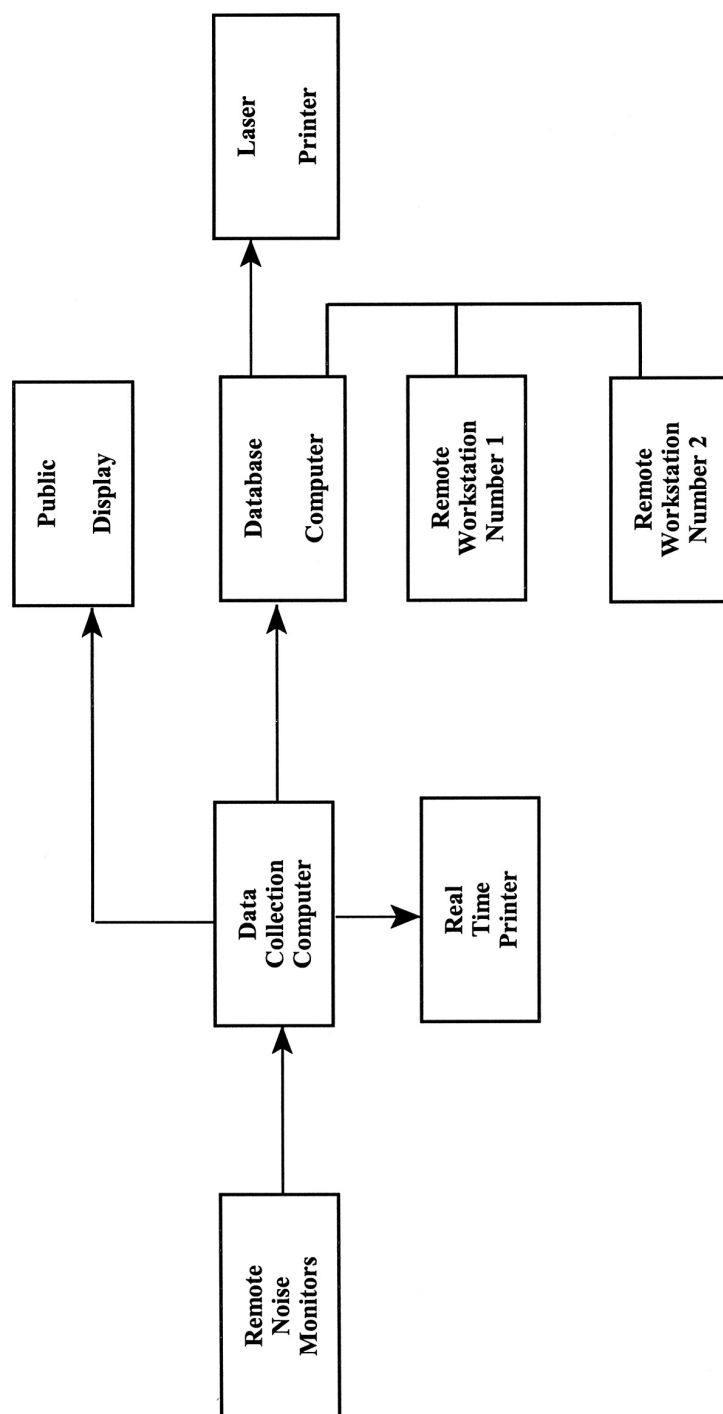


FIGURE A-1. PERMANENT NOISE MONITOR SYSTEM BLOCK DIAGRAM

TABLE A-1
NOISE MONITOR SITE LOCATIONS

<u>Site No.</u>	<u>Distance From N. End of RW 15</u>	<u>Distance From Extended Centerline</u>
1	8590	-1490
2	10830	1590
3	13440	-1090
4	-150	1200
5	-810	1100
6	-3280	-740
7	-4720	-50
12	7520	-3320
13	10660	-3600
14	12780	1160
15	13380	-3920
16	11600	360
17	12900	-3520

Note: Positive distances from the runway threshold are to the south; positive distances from the extended centerline are to the east.

<u>Site No.</u>	<u>Distance From W. End of RW 8</u>	<u>Distance From Extended Centerline</u>
9	-8805	225
10	8180	-880
11	8740	-110
18	-5880	-440

Note: Positive distances from the runway threshold are to the east; positive distances from the extended centerline are to the north.

**APPENDIX B
CALIBRATION**

APPENDIX B CALIBRATION

The system was calibrated during setup using a Bruel and Kjaer pistonphone. Acoustic calibrations are being performed approximately every six months. Electrical calibrations are performed automatically shortly after midnight each day. Figure B-1 shows the latest calibration certificate of the pistonphone employed in the acoustic calibrations and Figure B-2 shows a typical electrical calibration.

Odin Metrology, Inc.

Calibration of Sound & Vibration Instruments

Certificate Number: 17527-4

Certificate of Calibration for Brüel & Kjær Pistonphone

This calibration is performed by comparison with measurement reference standard pistonphones:

Type No.	4220	4228
Serial No.	1048473	1504084
Calibrated by	TS (Brüel & Kjær)	TS (Brüel & Kjær)
Due Date	31 AUG 10	31 AUG 10
Cal. Interval (Mo.)	12	12

- a) Estimated uncertainty of comparison: ± 0.04 dB
 b) Estimated uncertainty of calibration service for standard pistonphone: ± 0.06 dB
 c) Total uncertainty: $\sqrt{a^2 + b^2} = \pm 0.07$ dB
 d) Expanded uncertainty (coverage factor $k = 2$ for 95% confidence level): ± 0.14 dB

If the ambient pressure P_a deviates from the above stated nominal value, 1,013 mbar, a correction Δ SPL should be added to the calibrated sound pressure level:

$$\Delta \text{SPL} = 20 \cdot \log_{10}(P_a [\text{hPa}]) / 1013$$

This acoustic calibrator has been calibrated using standards with values traceable to the National Institute of Standards and Technology. This calibration is traceable to NIST Test Number 822/276563-D1269.

CONDITION OF TEST		
Ambient Pressure	988.69	hPa
Temperature	23	°C
Relative Humidity	40	%
Date of Calibration	21 JUN 2010	
Re-calibration due on	21 JUN 2011	

The calibration of this acoustic calibrator was performed using a test system which conforms to the requirements of ANSI/NCSLZ540-1, 1994 ISO Guide 25 and the guidelines of ISO 10012-1, ISO 17025, and ISO 9001:2000, Certification NQA No. 11252.

Calibration performed by



Harold Lynch, Service Manager

ODIN METROLOGY, INC.

3533 OLD CONEJO ROAD, SUITE 125

THOUSAND OAKS, CA 91320

PHONE: (805) 375-0830; FAX: (805) 375-0405

Calibrator type 4228
 Serial no. 2245246
 Submitted by AAA, Inc
 Simi Valley, CA 93065
 Purchase order no. Verbal
 Asset no. N/A

This calibrator has been found to be **within** the specifications listed below at the normalized conditions stated.

SPL produced in coupler terminated by a loading volume of 1.333 cm ³	124 \pm 0.15 dB
Frequency	251.2 Hz \pm 0.1%
Second Harmonic Distortion	< 3%
At 1,013 mbar, 20°C, and 65% relative humidity	

PERFORMANCE AS RECEIVED		
SPL	124.05	dB re 20 μ Pa
Frequency	251.15	Hz
Distortion	0.6	%
HF Noise	-55	dB re 124 dB
Battery Voltage	9.4	V

Was repair or adjustment performed? **No!**
 Were parts replaced? **No!**
 Were batteries replaced? **No!**

FINAL PERFORMANCE		
SPL	124.05	dB re 20 μ Pa
Frequency	251.15	Hz
Distortion	0.6	%
HF Noise	-55	dB re 124 dB

Note: This pistonphone was **within** manufacturer's specifications as received.

* Calibration Report *

Calibration	RMS: 1	Passed	Peak:109.9 dB @ 01/25/2006	0:06
Calibration	RMS: 2	Passed	Peak:109.8 dB @ 01/25/2006	0:06
Calibration	RMS: 3	Passed	Peak:109.7 dB @ 01/25/2006	0:06
Calibration	RMS: 4	Passed	Peak:109.7 dB @ 01/25/2006	0:06
Calibration	RMS: 5	Passed	Peak:109.8 dB @ 01/25/2006	0:06
Calibration	RMS: 6	Passed	Peak:109.9 dB @ 01/25/2006	0:06
Calibration	RMS: 7	Passed	Peak:109.9 dB @ 01/25/2006	0:06
Calibration	RMS: 9	Passed	Peak:109.8 dB @ 01/25/2006	0:06
Calibration	RMS:10	Passed	Peak:109.8 dB @ 01/25/2006	0:06
Calibration	RMS:11	Passed	Peak:109.9 dB @ 01/25/2006	0:06
Calibration	RMS:12	Passed	Peak:109.9 dB @ 01/25/2006	0:06
Calibration	RMS:13	Passed	Peak:110.0 dB @ 01/25/2006	0:06
Calibration	RMS:14	Passed	Peak:109.9 dB @ 01/25/2006	0:06
Calibration	RMS:15	Passed	Peak:110.0 dB @ 01/25/2006	0:06
Calibration	RMS:16	Passed	Peak:109.7 dB @ 01/25/2006	0:06
Calibration	RMS:17	Passed	Peak:109.7 dB @ 01/25/2006	0:06
Calibration	RMS:18	Passed	Peak:109.8 dB @ 01/25/2006	0:06

Figure B-2. Typical Daily Electrical Calibration