HARRIS MILLER MILLER & HANSON INC.
15 New England Executive Park
Burlington, MA 01803
Tel. (781) 229-0707
Fax (781) 229-7939

TECHNICAL MEMORANDUM

To: Ms. Diana Weir, Town of East Hampton, and the East Hampton Airport Noise Study Advisory Group

From: Robert Miller, Chris Bajdek

Date: 28 October 2003

Subject: East Hampton Airport Noise Mitigation Program

Preliminary Results of the Noise Measurement Program; Phase II – August 21st to September 2nd 2003

Reference: HMMH Job No. 299500

The East Hampton Airport Noise Study Advisory Group (NSAG) is comprised of the following individuals, listed alphabetically by last name:

- Rob Coe, East Hampton/South Hampton CAC
- Kyle Collins, Director, Southampton Town Planning Department
- Arthur French
- Cindy Herbst, Sound Aircraft Services
- Samuel Kramer
- Thomas Lavinio, East Hampton Aviation Association
- Robert Miller, HMMH
- Michael Myers, Myers Aviation
- Joan Osborne, East Hampton Village Preservation Society
- Gene Oshrin, East Hampton Aviation Association
- Pat Ryan, East Hampton Airport
- Jean Sinenberg
- William Tillotson, Chairperson, Sagaponack CAC
- Robert Wood, Citizens for Quieter Airport
- Matthew Zuccaro, Eastern Region Helicopter Council

This memorandum is being distributed to NSAG members at the next NSAG meeting on 29 October at 2:00 p.m. in the East Hampton Airport Terminal Building. It summarizes the second phase of a major measurement program designed to identify various characteristics of the noise caused by aircraft and helicopter operations at East Hampton Airport, and it will supplement the material to be discussed at the meeting.

Table of Contents

List of Figures

List of Tables

1. INTRODUCTION

Harris Miller Miller & Hanson Inc. (HMMH) was retained by the Town of East Hampton to conduct a study to address noise issues at East Hampton Airport (EHA). The overall objectives of the study are to define the current noise issues at EHA and to assess potential noise abatement measures that are both feasible and practical. The first part of the study began with field data collection process, which was split into two phases. The first phase of the measurement program began on 25 June 2003 and extended over two weekends, including the July 4th holiday. The results of the first phase were presented to members of the NSAG on 9 September 2003.

During this first phase of monitoring, several committee members who had offered their homes as candidate sites for measurement, expressed concern that aircraft and helicopter traffic was not operating as it normally did; that because the measurements had been discussed at the meeting, pilots were avoiding the airport, flying higher than normal, or not flying where they normally would.

To address this concern, the second phase of monitoring was planned and carried out without prior announcement to anyone other than the homeowners where the instrumentation was to be located. The second phase was initiated on August 21st and concluded on September 2nd, extending over two additional weekends and the Labor Day holiday.

This memorandum summarizes the results of our Phase II noise measurement program, with specific attention paid to whether there are any identifiable differences between the two periods. The following sections provide an overview of the measurement program, site-by-site discussions of the field data obtained at each site, a brief discussion of how this information will be used in our analysis, and an overview of the next steps in the study. The appendices provide graphs and tables of measured noise level data obtained at each of the sites.

2. OVERVIEW OF NOISE MEASUREMENT PROGRAM: PHASE II

The second phase of the field data collection process had the following objectives:

- To collect Day-Night Sound Level (DNL) data at several representative community locations, for use in comparison to modeled noise contour levels;
- To collect representative single-event noise data for various aircraft types of concern;
- To observe aircraft flight paths in person, to improve the quality of our modeling assumptions; and
- To review available airport operating records.

Noise measurements were conducted at a total of ten sites in the area surrounding the airport—seven of these sites duplicated the measurement sites from the first phase. Table 1 documents the location of each site and the overall monitoring periods for Phase II. Figure 1 shows the locations of the noise monitoring sites in relation to the airport—with the three new sites indicated with a different color-code.

Table 1. Summary of Noise Monitoring Sites for Phase II			
Site	**Address**	**Start**	**End**
		Date / Time	**Date / Time**
1	11 Highview Drive, Wainscott	21-August / 14:23	28-August / 10:37
2a	93 Merchants Path, Bridgehampton	21-August / 15:25	27-August / 17:24
3	244 Widow Gravitts, Bridgehampton	21-August / 17:09	2-September / 13:14
4	75 West Gate, Wainscott	21-August / 14:58	27-August / 13:36
5	Georgica Estates Tennis Courts, East Hampton	21-August / 13:43	2-September / 11:08
6	Ross School Athletic Fields, Wainscott	25-August / 10:12	27-August / 10:32
7	136 Main Street, East Hampton Village	27-August / 15:14	2-September / 13:39
8	Town Line Road, west end of Runway 10/28	27-August / 12:50	2-September / 19:47
9	76 Greenleaf Lane, Wainscott	27-August / 18:48	2-September / 12:53
10	44 Woodruff Lane, Bridgehampton	28-August / 12:12	2-September / 13:05

Observations and preliminary results of the measurements at each site are discussed individually by location. The appendices that follow include detailed measurement data from each site, presenting information such as background noise levels and maximum sound levels hour by hour throughout the entire measurement period, daily noise exposure levels, and single-event noise levels caused by individual aircraft and non-aircraft noise sources.

Orthophoto

2.1 Site 1: 11 Highview Drive, Wainscott

Site 1 was located in the backyard of a single-family home located at 11 Highview Drive in Wainscott. This site was north of the airport, approximately 3200 feet from the end of Runway 16/34 and 1000 feet west of the extended runway centerline. Figure 1 shows the location of the microphone in the backyard of this residence.

Figure 1. Microphone Location for Site 1

Site 1 was selected to document helicopter traffic patterns and operations. The site is located roughly 500 feet north of a power line that is used as a reference for helicopter pilots on approach to Runway 16.

Attended noise measurements were conducted on August 22nd from 15:30 to 16:21, on August 25th from 09:17 to 12:36, and on August 26th from 13:56 to 16:54. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 55 to 58 dBA over an 8-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 50 to 57 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.2 Sites 2A: 93 Merchants Path, Bridgehampton

Site 2A was located in the yard of a single-family home located at 93 Merchants Path. This site was situated west of the airport, approximately 5200 feet from the end of Runway 10/28 and 1700 feet south of the extended runway centerline. Figure 2 shows the location of the microphone in the front yard of the residence at 93 Merchants Path.

Figure 2. Microphone Location for Site 2A

Site 2A was selected to obtain noise levels and document aircraft operations from Runway 10/28. Attended noise measurements were conducted on August 22nd from 11:40 to 14:00, and on August 25th from 14:47 to 17:31. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 59 to 66 dBA over a 7-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 53 to 62 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.3 Site 3: 244 Widow Gravitts, Bridgehampton

Site 3 was located in the backyard of a single-family home located at 244 Widow Gravitts in Bridgehampton. This site was northwest of the airport, approximately 7700 feet from the end of Runway 10/28 and 3200 feet north of the extended runway centerline. Figure 3 shows the location of the microphone in the backyard of this residence.

Figure 3. Microphone Location for Site 3

Site 3 also was selected to document helicopter traffic patterns and operations. The site is located roughly 500 feet south of a power line that is used as a reference for helicopter pilots on approach to Runway 16.

Attended noise measurements were conducted on August 22nd from 16:41 to 18:44, on August 25th from 14:39 to 17:32, on August 27th from 16:00 to 18:41, on August 28th from 10:35 to 13:20, on August 29th from 11:22 to 14:01, on August 30th from 08:55 to 11:48, on August 31st from 10:14 to 12:09, and on September 1st from 11:42 to 13:58. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 56 to 62 dBA over the 13-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 49 to 60 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.4 Site 4: 75 West Gate, Wainscott

Site 4 was located in the backyard of a single-family home located at 75 West Gate in Wainscott. This site was south of the airport, approximately 1500 feet from the end of Runway 04/22 and 700 feet east of the extended runway centerline. Figure 4 shows the location of the microphone in the backyard of this residence.

Figure 4. Microphone Location for Site 4

Site 4 was selected to obtain noise levels and document aircraft operations to and from Runways 04/22 and 10/28. Attended noise measurements were conducted on August 22nd from 11:55 to 14:05, on August 26th from 09:40 to 12:40, and on August 27th from 09:53 to 13:23. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 58 to 66 dBA over the 7-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 47 to 61 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.5 Site 5: Georgica Estates Tennis Courts, East Hampton

Site 5 was located near the tennis courts at Georgica Estates in East Hampton. This site was east of the airport, approximately 4700 feet from the end of Runway 10/28 and 500 feet south of the extended runway centerline. Figure 5 shows the location of the microphone in relation to the tennis courts.

Figure 5. Microphone Location for Site 5

Site 5 was selected to obtain noise levels and document aircraft operations to and from Runway 10/28. Attended noise measurements were conducted on August 22nd from 15:24 to 18:33, on August 26th from 15:43 to 17:01, on August 28th from 10:15 to 13:24, on August 30th from 09:47 to 11:54, on August 31st from 10:48 to 11:02, on September 1st from 11:15 to 14:05, and on September 2nd from 08:45 to 11:15. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 59 to 64 dBA over the 12-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 52 to 58 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.6 Site 6: Ross School Athletic Fields, Wainscott

Site 6 was located near the athletic fields at the Ross School in Wainscott. This site was north of the airport, approximately 2000 feet from the end of Runway 04/22 and 600 feet east of the extended runway centerline. Figure 6 shows the location of the microphone in relation to the athletic fields for the Phase 1 measurements.

Figure 6. Microphone Location for Site 6

Site 6 was selected to obtain noise levels and document aircraft operations to and from Runways 04/22 and 16/34. Attended noise measurements were conducted on August 25th from 10:12 to 11:31, on August 26th from 09:24 to 12:27, and on August 27th from 10:13 to 11:37. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 56 to 59 dBA over the 3-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 48 to 52 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.7 Site 7: 136 Main Street, East Hampton Village

Site 7 was located in the backyard of a single-family home at 136 Main Street in East Hampton Village. This site was east of the airport, approximately 15000 feet from the end of Runway 10/28 and 500 feet south of the extended runway centerline. Figure 7 shows the location of the microphone in relation to the house.

Figure 7. Microphone Location for Site 7

Site 7 was selected to obtain noise levels and document aircraft operations for Runway 10/28. Attended noise measurements were conducted on August 27th from 16:22 to 18:53, on August 28th from 15:30 to 19:09, on August 29th from 16:15 to 18:12, on August 30th from 14:30 to 16:13, on August 31st from 16:30 to 17:55, and on September 1st from 17:40 to 19:00. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 53 to 58 dBA over the 7-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 40 to 51 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.8 Site 8: Town Line Road, West End of Runway 10/28

Site 8 was located along Town Line Road at the west end of Runway 10/28, approximately 1400 feet from the end of Runway 10/28 along the extended runway centerline.

The primary purpose of Site 7 was to document total aircraft operations at the airport, as it was possible to view operations for each of the runways from this vantage point.

Noise level data obtained from this site were used to develop daily operations numbers. Specifically, noise level data were used to estimate operations that occurred during periods that were not covered by either HMMH personnel or the Airport Manager's Log.

Attended noise measurements were conducted on August 27th from 12:57 to 13:23, on August 28th from 16:06 to 19:26, on August 29th from 11:08 to 14:39, and then later from 15:52 to 19:42, on August 30th from 08:30 to 12:20, and then later from 13:17 to 15:35, on August 31st from 09:45 to 12:40, and then later from 14:12 to 17:39, on September 1st from 11:25 to 14:31, and then later from 15:30 to 19:30, and finally on September 2nd from 8:44 to 11:47. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 61 to 67 dBA over the 6-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 57 to 67 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.9 Site 9: 76 Greenleaf Lane, Wainscott

Site 9 was located at a single-family residence at 76 Greenleaf Lane in Wainscott. This site was west of the airport, approximately 2450 feet from the end of Runway 10/28 and 2800 feet south of the extended runway centerline.

Attended noise measurements were conducted on August 28th from 15:26 to 19:24, on August 29th from 15:57 to 18:46, on August 30th from 13:30 to 14:44, on August 31st from 14:21 to 17:03, and on September 1st from 15:42 to 17:27. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 61 to 67 dBA over the 6-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 57 to 67 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

2.10 Site 10: 44 Woodruff Lane, Bridgehampton

Site 10 was located at a single-family residence at 44 Woodruff Lane in Bridgehampton. This site was west of the airport, approximately 10,000 feet from the end of Runway 10/28 and slightly north of the extended runway centerline.

Attended noise measurements were conducted on August 28th from 12:06 to 13:23, on August 29th from 11:15 to 13:58, on August 31st from 14:15 to 16:10, and on September 1st from 14:58 to 17:05. Appendix A provides graphs of the hourly noise levels for all sites, including the following noise metrics: L_{max}, L_{eq}, L_1, L_{10}, L_{50}, and L_{90}.

The measured Total DNL ranged from 54 to 61 dBA over the 6-day period. The DNL due to measured noise events (both aircraft and non-aircraft) ranged from 48 to 53 dBA. The tables in Appendix B provide summaries of the measured DNL for all of the sites.

The Next Steps in the Study

Following the October 29th meeting of the NSAG, HMMH will review the committee's comments and proceed to finalize our analysis and prepare a preliminary list of potential mitigation measures for the NSAG's consideration.