

SNOHOMISH COUNTY AIRPORT QUARTERLY NOISE MONITORING SUMMARY

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NOISE HOTLINE: 425-353-2110x1

January—March 2008

INTRODUCTION TO THE SNOHOMISH COUNTY AIRPORT NOISE MONITORING SYSTEM

This report summarizes noise monitoring data collected in the first quarter of 2008 (January—March) at Snohomish County Airport-Paine Field. It includes comparisons with data collected in previous years where possible. The noise monitoring system produces a tremendous amount of data in a variety of formats.

The Snohomish County Airport Noise Monitoring System includes a digital voice recorder, three semi-permanent noise monitors, and one mobile noise monitor, CCTV cameras and a private subscription landing report. Figure E on Page 4 shows the location of the semi-permanent monitors. Monitor One is located 9500 feet north of the airport in Mukilteo. Monitor Two is located 6500 feet west of the airport in Harbour Pointe. Monitor Three is located 8500 feet south of the airport near Lake Serene. Monitor Four, the mobile monitor, is mounted in the airport's noise monitoring trailer and is used for spot monitoring throughout the community.

Figures A, B, and C present noise calls received from residents during the first quarter 2005 – 2008. Figure A presents the correlation between flight operations and flight related noise calls, figure B presents the correlation between engine testing and engine testing related noise calls and figure C presents the comparison of noise calls by aircraft

NOISE MEASUREMENTS

Noise is measured in decibels (dB) which is a logarithmic expression of sound pressure level. All data collected by the Airport's Noise Monitors are "A" weighted to more closely reflect the way people hear sounds. "A" weighting, written as dBA, discriminates against sounds that the human ear is less sensitive to which are sounds below 1,000 hertz (cycles per second) and above 6,000 hertz.

An extensive discussion of noise metrics and computer noise analysis can be found in Chapter C of the 1995 Paine Field FAR Part 150 Noise Study. This is available at local public libraries, online at www.paineairport.com, or from the Airport Office.

The most common noise measurements used by Paine Field are sound exposure levels (SEL) and cumulative noise levels.

Sound Exposure Level (SEL)

Noise levels generated by aircraft operations are expressed as Sound Exposure Level (SEL) events. The "A"-weighted SEL value represents the total sound level over a background noise threshold, thereby separating aircraft noise events from other noises. SEL accounts for the intensity and duration of the sound of each single event.

Figure D presents average Sound Exposure Levels measured for arrivals and departures of 7 aircraft models at Monitors One, and Three. These figures are averaged from historical one second noise levels. Due to the logarithmic nature of the noise weighting high level noise events influence the daily average significantly. Additional information on Day/Night noise level measurements can be found at the airport operation office.

Cumulative Noise Levels

Cumulative noise levels include noise from various sources, including wind, animals, automobiles, and aircraft. The Airport's Noise Monitoring System computer analyzes the characteristics of each single event noise recorded. It distinguishes between aircraft and community noises and labels them accordingly. "A" weighted Day-Night Sound Level (DNL) is the standard sound metric used by the Environmental Protection Agency (EPA) and the FAA for determining cumulative noise exposure around airports. The DNL metric adds a 10 dBA penalty to all noises recorded between the hours of 10:00 PM and 7:00 AM to reflect the greater sensitivity individuals have to noise while sleeping. The DNL data generated by the noise monitoring equipment can be compared to annual DNL noise contours generated in the Part 150 Noise Study Update.

FIRST QUARTER AIRCRAFT OPERATIONS AND NOISE CALLS

The Airport received 226 noise calls during the first quarter of 2008. 221 calls were concerns regarding flight operations. During this period, the FAA Air Traffic Control Tower counted 28,502 operations. Figure A correlates total noise calls generated by flight operations with total flight operations in the first quarters of 2005–2008. Figure C presents a comparison of the total number of noise calls regarding flight operations by particular aircraft type.

Figure B compares the number of noise calls on engine testing with total engine test conducted during the same period. In 2000, the Airport constructed noise berms/walls along the new Paine Field Boulevard, which have resulted in lower engine testing noise levels in the adjacent neighborhoods. Table One on page 4 indexes the number of noise calls received from each Paine Field Community Council subquadrant during the first quarters of 2005–2008. The Community Council subquadrants are shown graphically on Figure E. Specific boundary delineation information is available at the Airport Office.

Figure A: Correlation between flight operations and flight related noise calls (1st Quarter 2005-2008).

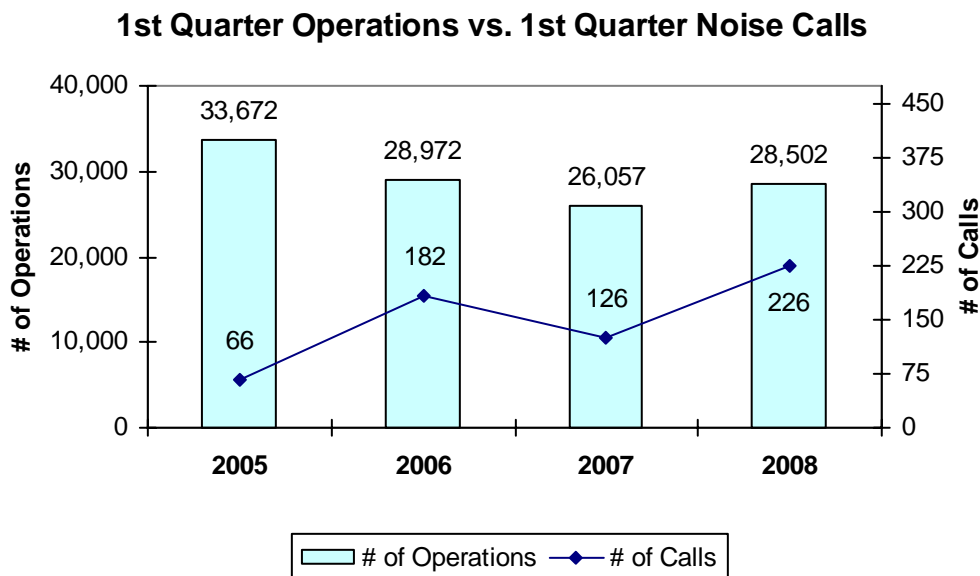


Figure B: Correlation between engine testing and engine testing related noise calls 1st Quarter 2005-2008)

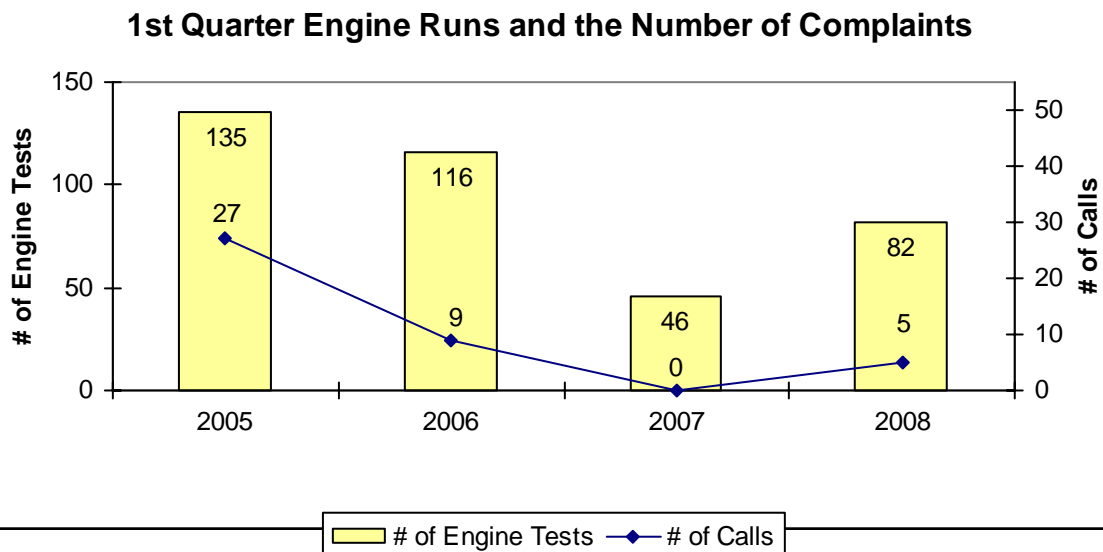


Figure C: Comparison of First Quarter 2008 Noise Calls for Flight Operations by Aircraft Type

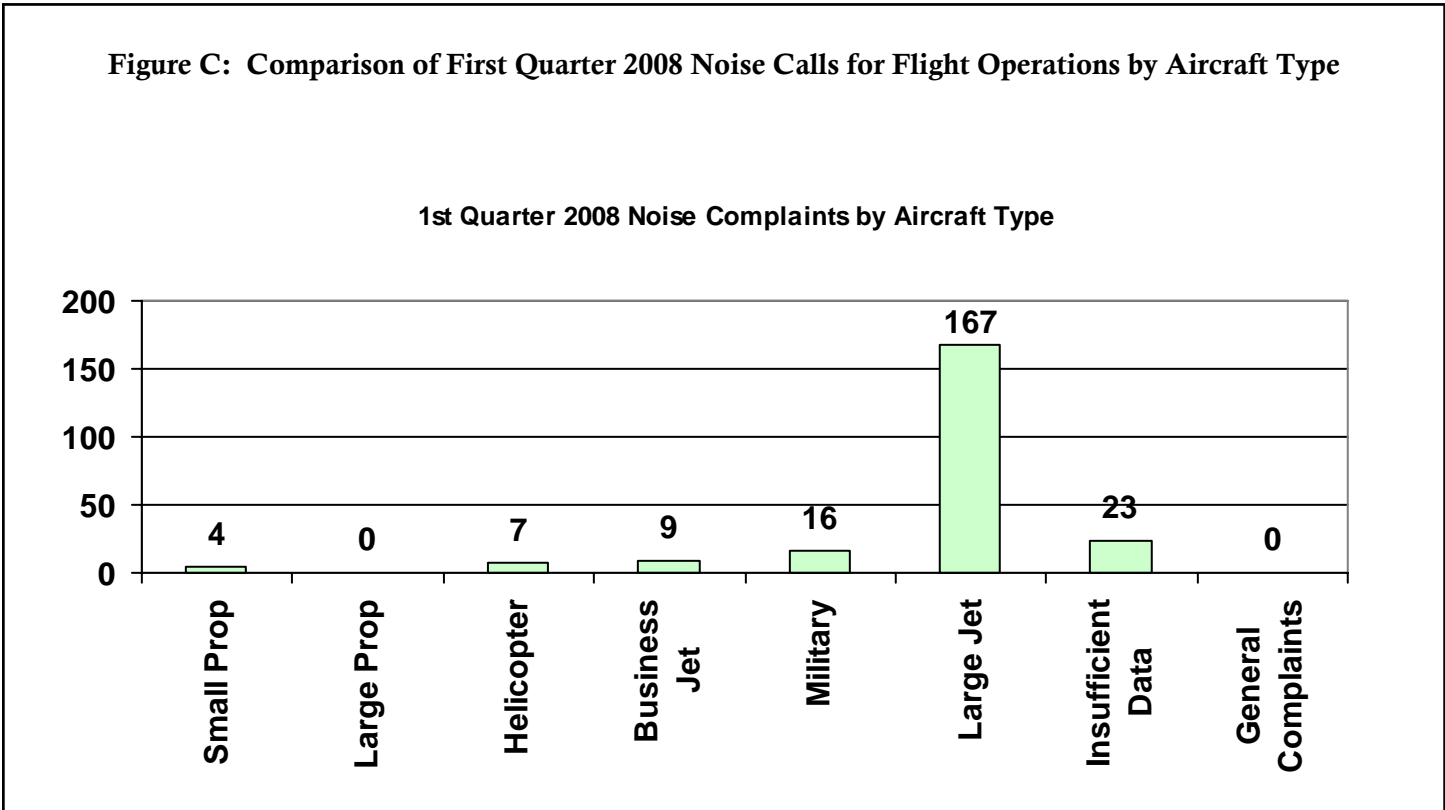
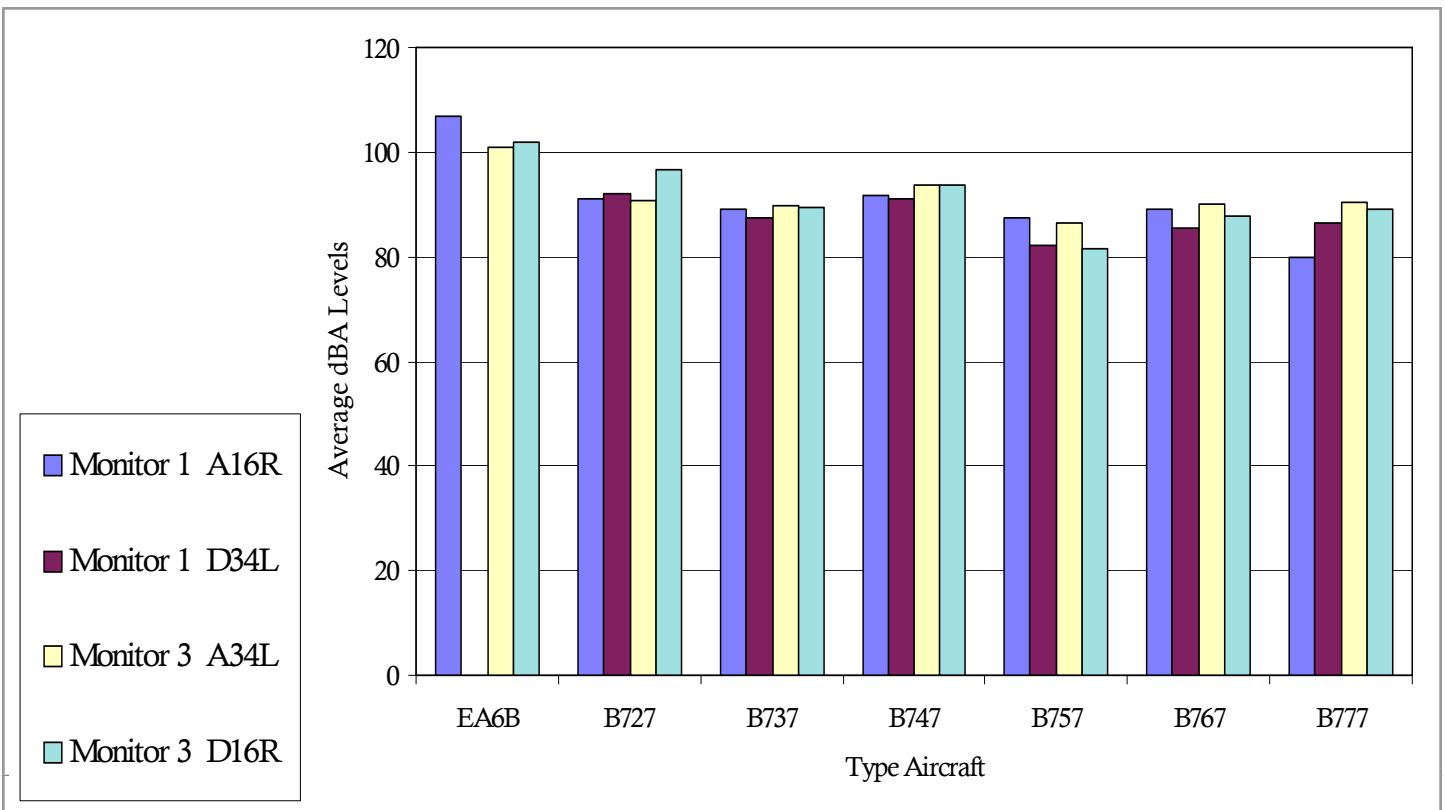


FIGURE D: AVERAGE SOUND EXPOSURE LEVELS (SEL)



NOISE CALLS – FIRST QUARTER 2005-2008

Table One: Noise Calls by Paine Field Community Council Subquadrants - First Quarter 2005-2008

Year	NW1	NW2	NW3	NW4	NE1	NE2	NE3	NE4	SW1	SW2	SW3	SW4	SE1	SE2	SE3	SE4	Other	Total
2005	14	0	5	26	2	0	3	9	0	0	0	0	0	1	5	2	5	72
2006	33	2	11	74	22	0	0	1	1	1	6	3	7	0	13	14	3	191
2007	16	2	1	57	1	0	0	0	0	0	1	2	6	1	8	26	5	126
2008	35	0	8	61*	9	0	0	0	5	7	3	0	7	1	3	81**	6	226

* Indicates that 99% of the calls were made by two callers

** Indicates that 40% of the calls were made by one caller

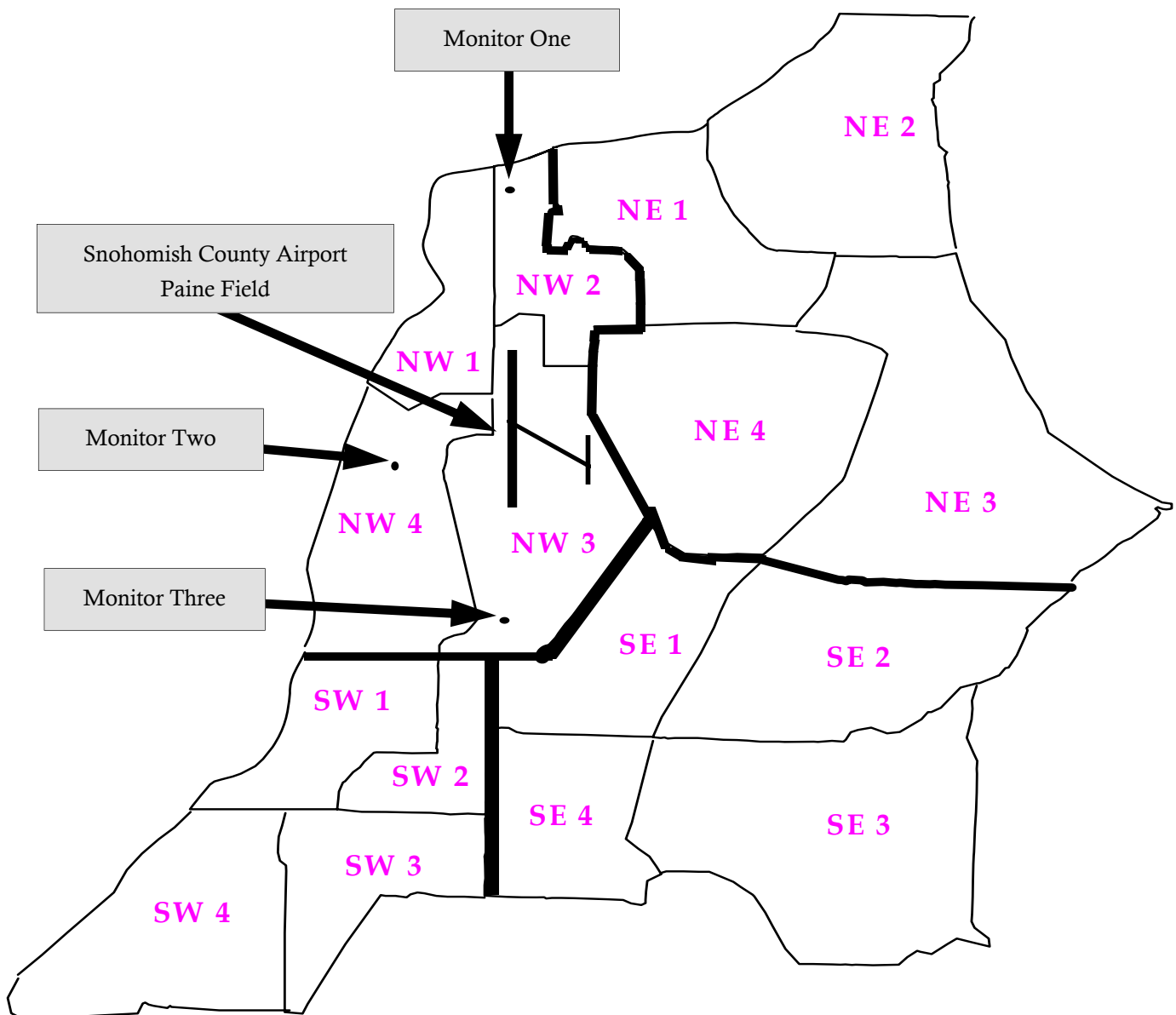


Figure E: Paine Field Community Council Subquadrants