

# SNOHOMISH COUNTY AIRPORT QUARTERLY NOISE SUMMARY

PAINE FIELD 3220 100TH ST SW, EVERETT, WA 98204

*July—September 2010*

## INTRODUCTION TO THE SNOHOMISH COUNTY AIRPORT NOISE MONITORING SYSTEM

This report summarizes noise monitoring data collected in the third quarter of 2010 (July-September) 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, a private subscription landing report & radar flight track data. 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 7600 feet south of the threshold of 34L 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 third quarter 2007 – 2010. 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 type.

## 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

A discussion of noise metrics and computer noise analysis as well as Paine Field's FAR Part 150 Noise Exposure Maps can be found online at [www.paineairport.com](http://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)

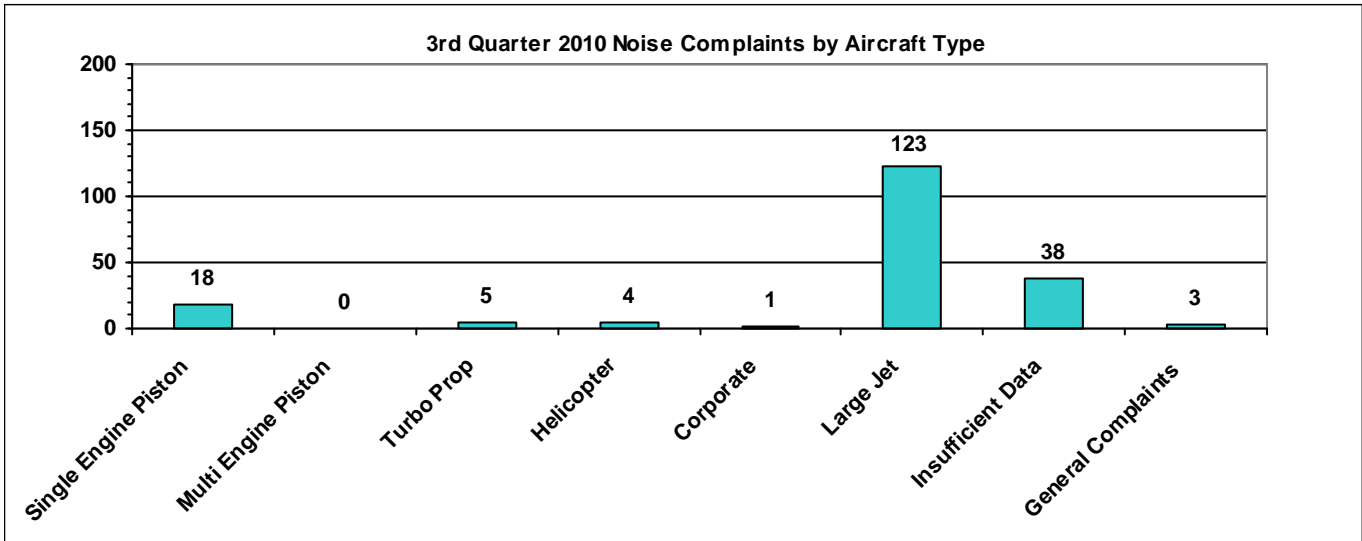
Noise levels generated by aircraft operations are expressed as Sound Exposure Level (SEL) events. The "A"-weighted SEL value represents the total sound level over a background noise threshold, thereby separating aircraft noise events from other noises. SEL accounts for the intensity and duration of the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

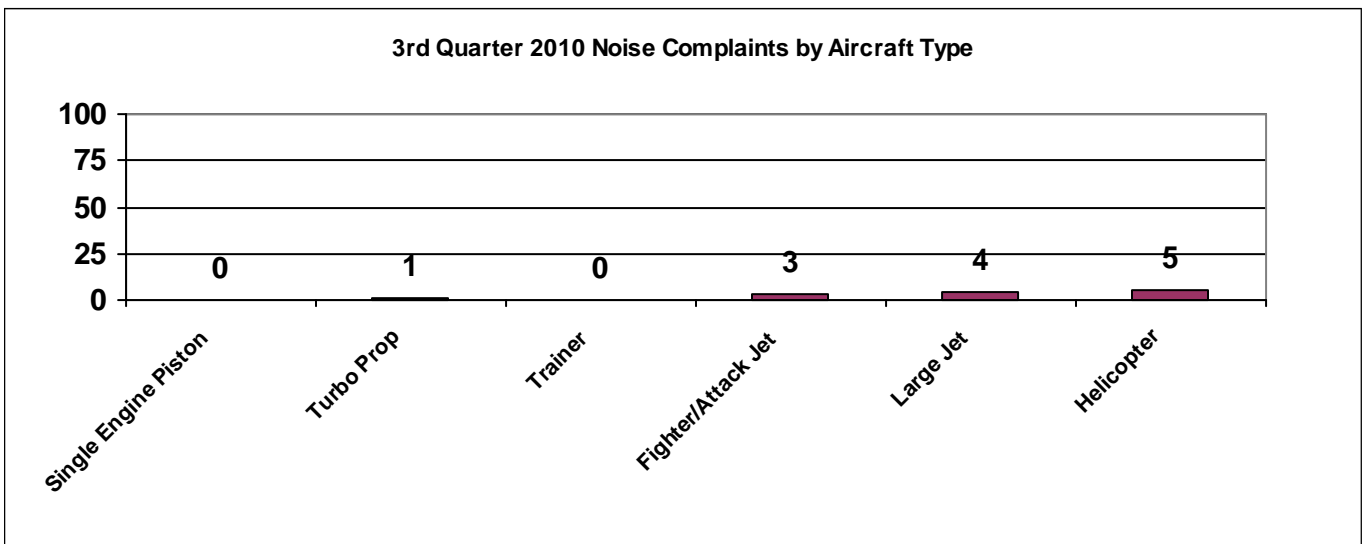
### Cumulative Noise Levels

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.

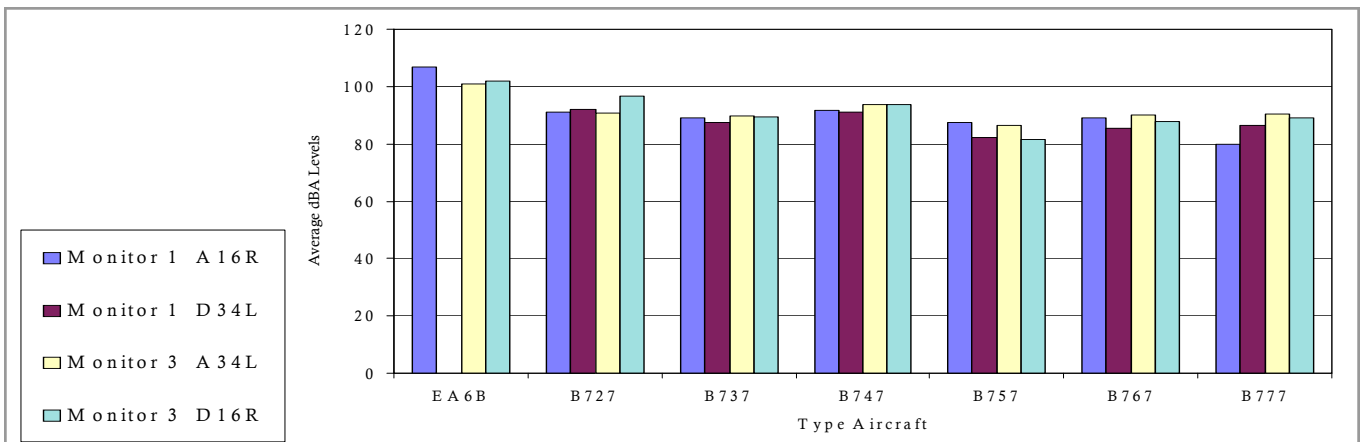
**Figure C (1): Summary of 3rd quarter 2010 Noise Calls for Civil Aircraft Operations by Aircraft Type**



**Figure C (2): Summary: Third quarter Noise Calls for Military Aircraft Operations by Aircraft Type**



**Figure D: Average Sound Exposure Levels (SEL)**



# NOISE CALLS – THIRD QUARTER 2007-2010

Table One: Noise Calls by Paine Field Community Council Subquadrants - Third quarter 2007-2010

Year	NW1	NW2	NW3	NW4	NE1	NE2	NE3	NE4	SW1	SW2	SW3	SW4	SE1	SE2	SE3	SE4	Unk/Other	Total
2007	56	5	11	62	3	0	2	3	12	4	5	4	16	0	9	48	20	260
2008	60	1	5	64	23	4	17	4	8	3	3	1	13	0	5	62	14	287
2009	33	1	7	73	9	0	2	1	4	5	2	4	12	0	2	56	23	234
2010	31	0	11	57*	7	0	0	3	4	0	1	8	8	0	0	59**	16	205

Reported numbers may differ slightly from the monthly reports due to corrections made to database after reports are published.

\*49% of the calls from this quadrant were placed by 1 individual.

\*\* 90% of the calls from this quadrant were placed by 2 individuals.

## JULY—SEPTEMBER 2010 NOISE CALLS BY NOISE QUADRANT

The graphic on the right depicts Paine Field’s 16 noise quadrants and the locations of the three noise monitors. The black numbers within each quadrant represent how many calls were made from that quadrant in the third quarter of 2010. “Unknown” represents calls where the caller did not identify the location. “Other” represents calls from outside the quadrants.

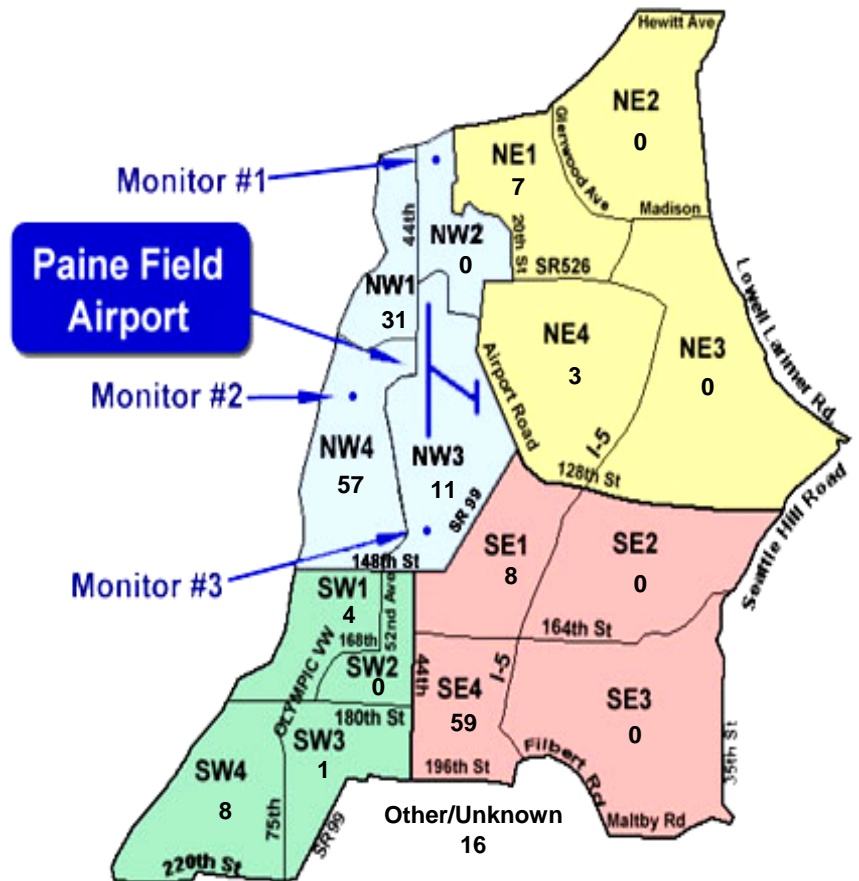


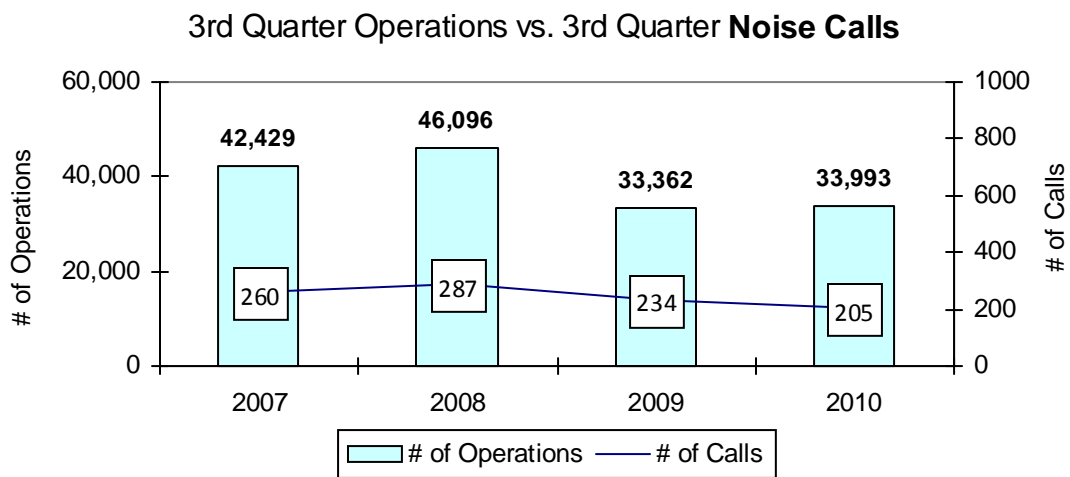
Figure E: Paine Field Community Council Subquadrants

## THIRD QUARTER AIRCRAFT OPERATIONS AND NOISE CALLS

The Airport received 205 noise calls during the third quarter of 2010. 204 calls were concerns regarding flight operations, one call was regarding an engine run. During this period, the FAA Air Traffic Control Tower counted 33,993 operations. Figure A correlates total noise calls generated by flight operations with total flight operations in the third quarters of 2007–2010. 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 tests conducted during the same period. Table One on page 4 indexes the number of noise calls received from each Paine Field Community Council subquadrant during the third quarters of 2007–2010. 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 Third quarter 2007-2010.**



**Figure B: Correlation between engine testing and engine testing related noise calls 3rd Quarter 2007-2010.**

