

# SNOHOMISH COUNTY AIRPORT PAINE FIELD

## QUARTERLY NOISE SUMMARY

PAINE FIELD | 3220 100TH ST SW STE. A | EVERETT, WA 98204



*April - June 2016*

### INTRODUCTION TO THE SNOHOMISH COUNTY AIRPORT NOISE MONITORING SYSTEM

This report summarizes noise monitoring data collected in the Second Quarter of 2016 (April - June) 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 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 inquiries received from residents during the Second Quarter 2013–2016. Figure A presents the correlation between flight operations and flight related noise inquiries, figure B presents the correlation between engine testing and engine testing related noise inquiries and figure C presents the comparison of noise inquiries 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.painefield.com](http://www.painefield.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.

#### Cumulative Noise Levels

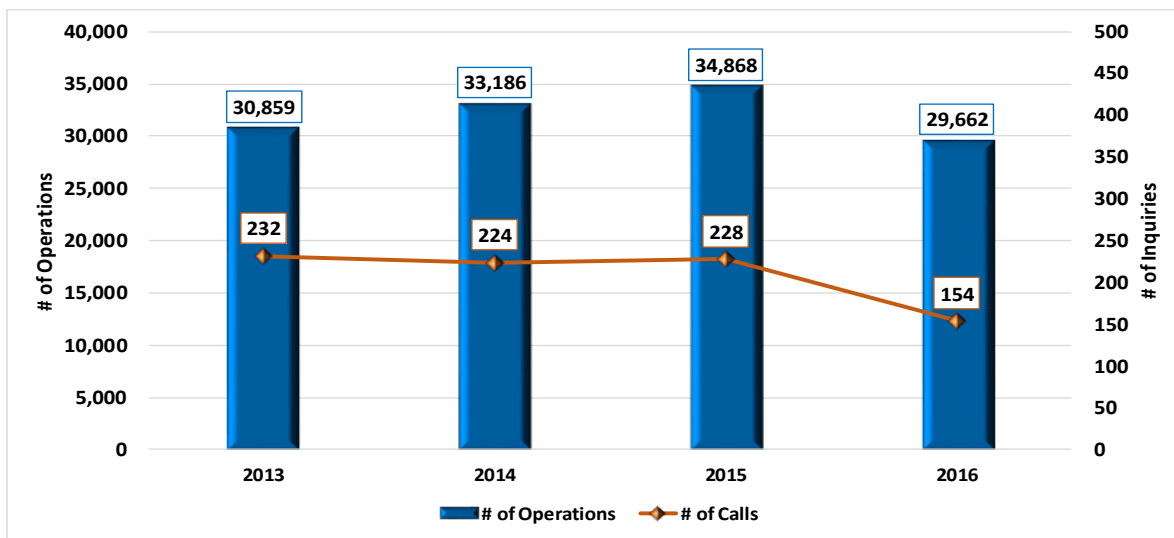
Cumulative noise levels include noise from various sources, including wind, animals, automobiles, and aircraft. The Airport's Noise Monitoring System computer analyzes the characteristics of each single event noise recorded. It distinguishes between aircraft and community noises and labels them accordingly. "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 INQUIRIES

The FAA recorded 29,662 aviation operations and the Airport received 154 noise inquiries during the Second Quarter of 2016; 5 of the inquiries were concerns regarding engine trims. Figure A correlates total noise inquiries generated by flight operations with total flight operations in the Second Quarters of 2013–2016. Figure C presents a comparison of the total number of noise inquiries regarding flight operations by particular aircraft type.

Figure B compares the number of noise inquiries on engine testing with total engine tests conducted during the same period. Table One on page 4 indexes the number of noise inquiries received from each Paine Field Community Council subquadrant during the Second Quarters of 2013–2016. 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 inquiries Second Quarter 2013-2016.**



**Figure B: Correlation between engine testing and related noise inquiries Second Quarter 2013-2016.**

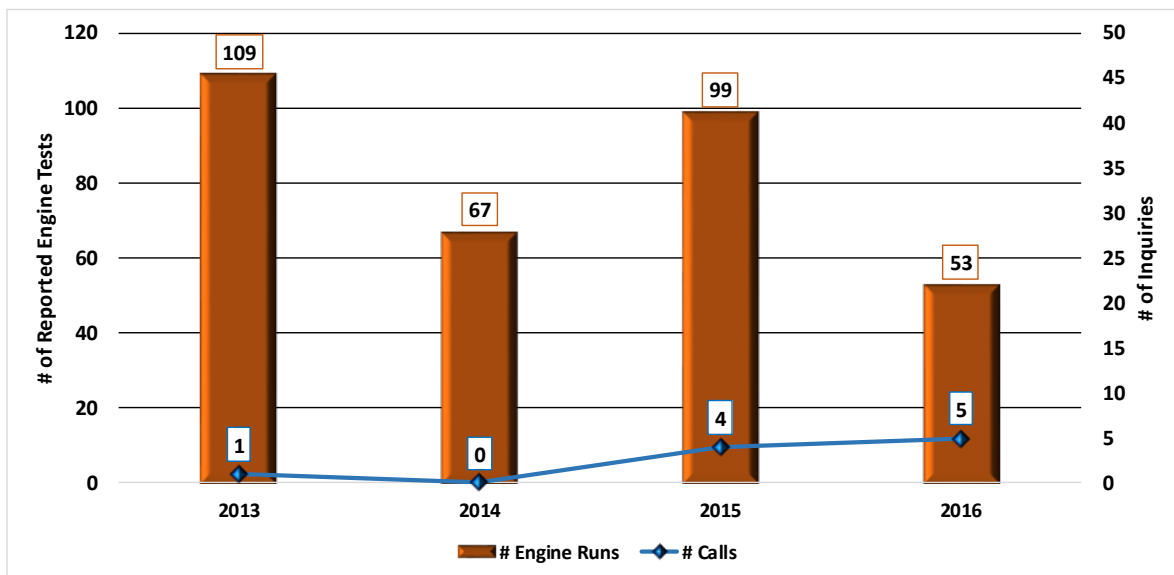


Figure C (1): Summary of Second Quarter 2016 Noise Calls for Civil Aircraft Operations by Aircraft Type

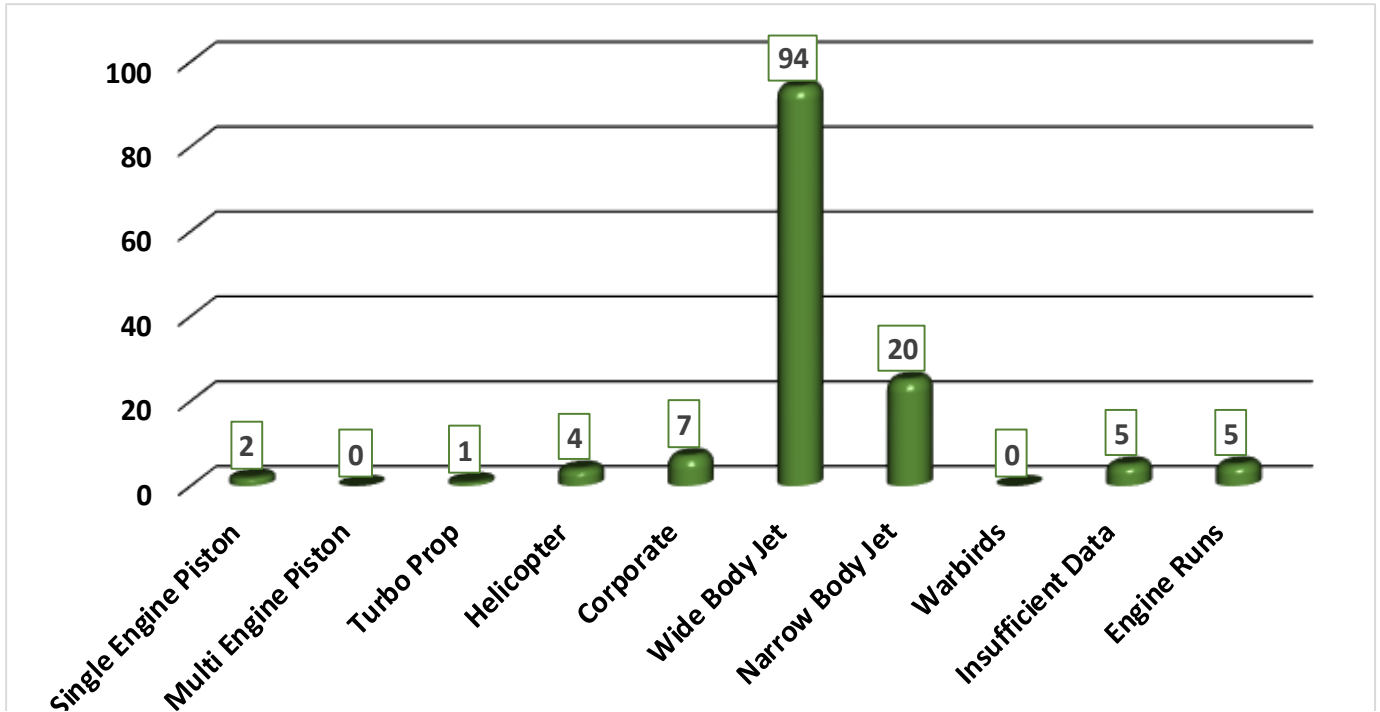
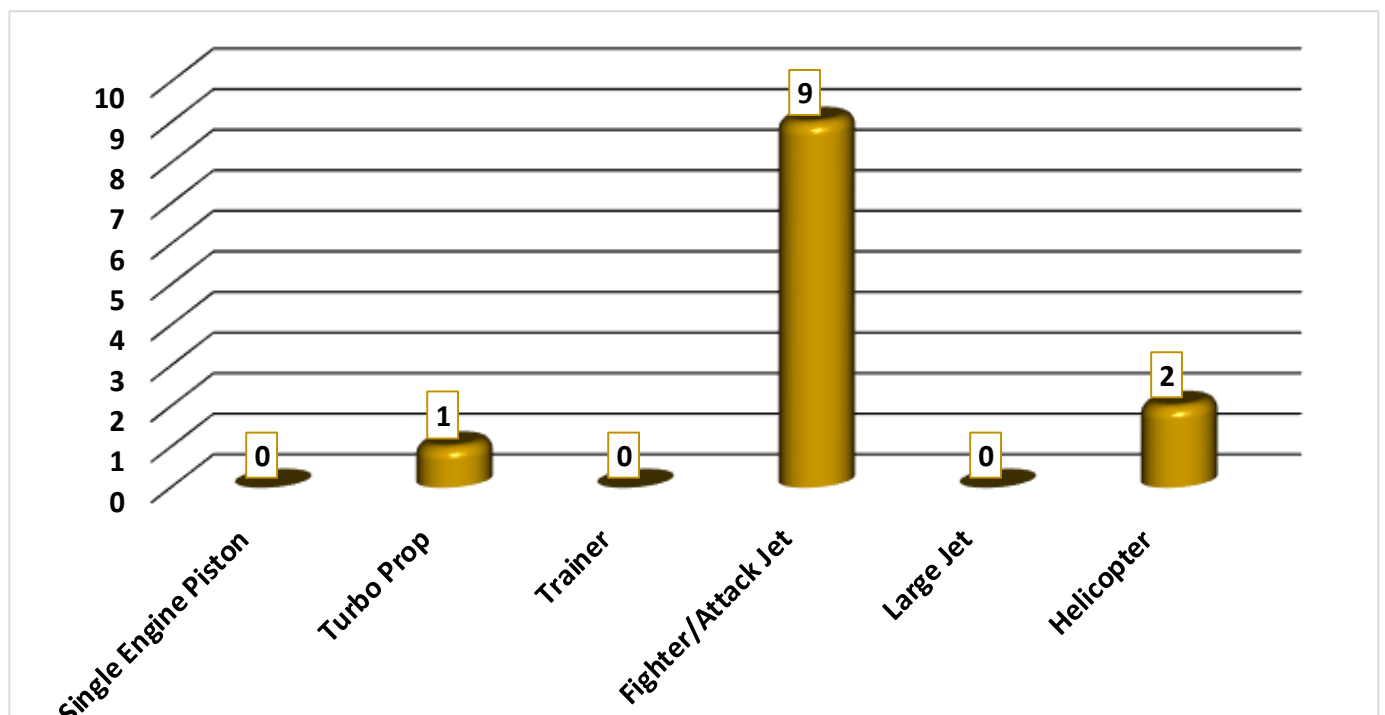


Figure C (2): Summary of Second Quarter 2016 Noise Inquiries for Military Aircraft Operations by Aircraft



# NOISE INQUIRIES – SECOND QUARTER 2013-2016

Figure D: Noise Inquiries by Paine Field Community Council Subquadrants - Second Quarter 2013-2016

Year	NW1	NW2	NW3	NW4	NE1	NE2	NE3	NE4	SW1	SW2	SW3	SW4	SE1	SE2	SE3	SE4	Unk/ Other	Total
2013	11	0	13	22	10	0	1	2	1	17	2	0	17	2	1	77	56	232
2014	22	2	13	17	15	7	0	2	2	5	2	0	56	0	0	71	10	219
2015	19	3	12	14	5	2	0	5	1	5	8	1	32	2	0	63	54	228*
2016	20	1	14	7	3	1	0	2	6	0	9	1	30	0	9	0	51	154**

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

\* 46% of inquiries were made by 3 individuals.

\*\* 33% of inquiries made by 3 individuals

## APRIL - JUNE 2016 NOISE CALLS BY NOISE QUADRANT

Figure E: Paine Field Community Council Subquadrants

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 inquiries were made from that quadrant in the First Quarter of 2016. “Unknown” represents calls where the caller did not identify the location. “Other” represents calls from outside the quadrants.

