THE HONORABLE THOMAS S. ZILLY

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

CITIZENS OF EBEY'S RESERVE FOR A HEALTHY, SAFE & PEACEFUL ENVIRONMENT,

Plaintiffs,

v.

U.S. DEPARTMENT OF THE NAVY; ADMIRAL BILL GORTNEY, in his official capacity as the Commander, Fleet Forces Command; and COMMANDER MIKE NORTIER, in his official capacity as Commander Naval Air Station Whidbey Island,

Federal Defendants.

NO. 2:13-cv-01232-TSZ

DECLARATION OF KAREN BOWMAN, MN, RN, COHN-S

I, Karen Bowman, MN, RN. COHN – S, declare as follows:

1. I am over the age of 18 and competent to testify in this matter. The information in this declaration is based on my personal knowledge and professional opinion.

2. I'm an advanced practice nurse in community health systems with a special focus in occupational and environmental health. I have been practicing for over twenty five years and I

GENDLER & MANN, LLP
615 2nd Ave. Suite 560
Seattle, WA 98104
Phone: (206) 621-8868
Fax: (206) 621-0512

am board certified as an occupational health nurse specialist. I own a business firm in Seattle that supports companies in their health and safety compliance, additionally the company collaborates with local and national organizations and agencies to pass legislation that supports human and environmental health. I am a national speaker on occupational and environmental health issues. A true and correct copy of my CV is attached as Exhibit A.

3. I was asked by COER to research the health effects of aircraft noise on adult health. The literature review included 40 articles, the JGL Acoustics Whidbey Island Military Jet Noise Measurements (2013) and thirteen declarations from community members around Coupeville, Washington. A true and correct copy of the literature review I prepared is attached as Exhibit B. The literature consistently reveals that people suffer grave health effects from the constant noise associated with commercial aircraft, and in particular military aircraft and more specifically, low flying military aircraft ranging from disruption of activities of daily living (ADL) and sleep disturbance to noise induced hearing loss (NIHL), stress and severe cardiac problems ranging from elevation in blood pressure and heart rate, atherosclerosis to myocardial infarction and death.

4. The EA-18G jet aircraft noise far exceeds noise regulations set by the state according to the Washington State (Chapter 70.107 RCW NOISE CONTROL/WAC 173-60). The maximum noise in a residential setting shall be no greater than *55dBA* and from 10pm-7am the maximum noise level is *45dBA* (Washington State Noise Control Act). The JGL noise report finds that during flight operations at OLF Coupeville the noise levels at the five measured locations were between 81 dBA (inside) and 119 dBA (outside); clearly above the Washington State Noise Control Act. The JGL noise report further finds predicted and calculated annual average L_{dn} at each of the (5) measured locations ranging from 76.0 to 83.0; again clearly above the Washington State Noise Control Act. It is distressing to review the JGL Whidbey Island Military Jet Noise Study because many of these locations are right where men, women and children conduct their

GENDLER & MANN, LLP
615 2nd Ave. Suite 560
Seattle, WA 98104
Phone: (206) 621-8868
Fax: (206) 621-0512

activities of daily living. For example, position (5) in the study was inside a resident's home where she has to endure a dBA of 81 decibels. Another location, the Rhododendron Park Baseball Field (where children play baseball) measured at 114.3 dBA over a 36 minute period. We know children who are exposed to loud noise in childhood have increased risk for NIHL as adults (Hong, 2013). Position (3) Rose Hip Farms' level was 115.7 dBA over 45 minutes.

5. We know that the EA-18G Field Carrier Landing Practice (FCLP) continues for hours. The Occupational Safety and Health Act (OSHA) and subsequently the Washington State Department of Labor and Industry requires the implementation of a Hearing Conservation Program, as an administrative control, when employees are subjected to noise at or equal to 85dBA with an 8 hour Time Weighted Average (TWA) along with requiring employees to be trained in hearing conservation and how to don and doff hearing protection. At 90dBA with a TWA of 8 hours, engineering controls are required (Washington State Department of Labor and Industries Hearing Loss Prevention Program). At 110dBA maximum exposure is 1 minute 29 seconds. Continued exposure over time at 85dBA will cause hearing damage. At 140 dB one exposure may cause permanent damage and pain (Center for Hearing and Communication). Clearly, all (5) measured locations in the JGL cause human health harm. Furthermore, the JGL author confirms, "The maximum sound levels are well above the levels requiring hearing protection and are high enough to potentially result in permanent hearing loss" (Mann, 2013).

6. There is robust data correlating coronary vascular disease including increases in blood pressure and myocardial infarction (heart attacks) to aircraft noise. This is directly related to sleep disruption at night which creates a cascading effect of stress hormones. Additionally, hearing is 10 times more sensitive than eye sight and is the primary sense that conveys danger. Unlike the human eye that has a lid to stop visual sensation, the ear cannot shut itself off from hearing which creates a significant problem at night when individuals are trying to sleep.

GENDLER & MANN, LLP
615 2nd Ave. Suite 560
Seattle, WA 98104
Phone: (206) 621-8868
Fax: (206) 621-0512

7. There is a statistically significant relationship between aircraft noise and higher relative rate for hospitalizations (heart failure, ischemic heart disease, and peripheral vascular disease of people ≥ 65 year olds living near airports (Correia, et al 2013, pg. 5).

8. Aircraft noise significantly increases sleeping problems (Boes 2013).There is a growing amount of data linking short sleep duration or sleep disruption of various kinds to the development of cardiovascular disease and other conditions negatively affecting the cardio vascular system, and chronic exposure may predispose an individual to hypertension (Schmidt, et al 2013, pg. 3512-3513).

9. There is a higher prevalence of increasing hypertension with increasing exposure to night time aircraft noise exposure. "Physical characteristics of military low-altitude flight noise are different in terms of other aircraft flight noise; the extremely high maximal sound level and the very rapid increase in sound level during direct over-flights." (Jarup, Babisch, et al, 2008). Low altitude over-flight noise is associated with cardiovascular disease and sleep disturbances even during quiet nights (Hartmut, Rebentisch, Poustka, & Curio, 1990).

10. Qualitative general health measure surveys of neighborhoods around commercial aircraft airports consistently display the same poor health indicators and outcomes as the Citizen's for Ebey's Reserve's qualitative health effects surveys. Additionally, the greater the severity of noise, ranked by loudness and frequency, the worse the health measure were (Meister, 2000).

11. Multiple studies suggest a link between residents who live around Airports and metabolic syndrome which includes body mass index, waist circumference, type 2 diabetes, cardiac disease such as hypertension and increased triglycerides (Eriksson, 2014). This makes sense given that sleep disturbance and increased cortisol levels are consistent findings in these individuals (Swift, 2010). This not only causes pain and suffering of citizens but also creates a financial burden. A 2009 study quantifying health care utilization and the economic costs of metabolic syndrome in Washington State found that study participants with metabolic syndrome had a higher

GENDLER & MANN, LLP
615 2nd Ave. Suite 560
Seattle, WA 98104
Phone: (206) 621-8868
Fax: (206) 621-0512

rate of heath care utilization and costs compared to non-metabolic disorder subjects. The average annual total costs between subjects with metabolic syndrome versus no metabolic syndrome was $5,732 and $3,581 respectively - a difference of $2,151. (Boudreau, 2009).

12. It is my professional opinion that the citizens around OLF Coupeville have potential to suffer from the health effects consistent with the above findings as a result of the constant noise from the EA-18G Growler jet aircraft field carrier landing practice (FLCP) operations at OLF Coupeville. The nighttime FLCP operations are exquisitely exacerbating the stress reaction which causes a cascade of health effects listed above.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Dated this 20 day of April, 2015, in Seattle, Washington.

By: Karen R. Bowman, MN, RN, COHN-S
Karen R. Bowman, MN, RN, COHN-S

GENDLER & MANN, LLP
615 2nd Ave. Suite 560
Seattle, WA 98104
Phone: (206) 621-8868
Fax: (206) 621-0512