

FREQUENTLY ASKED QUESTIONS

Electronic Warfare Training in the Pacific Northwest

Question: What is the Navy proposing for electronic warfare?

Answer: The equipment examined in the Pacific Northwest Electronic Warfare Range Environmental Assessment (EA) consists of a fixed emitter site and three mobile emitter vans that will send out signals that pilots need to detect and identify. Electronic attack aviators from Naval Air Station (NAS) Whidbey Island will use the signals from the fixed emitter and mobile emitters to complete basic to intermediate Airborne Electronic Attack training. Currently, NAS Whidbey Island aircraft use Electronic Warfare (EW) ranges outside the local vicinity for much of this training. By establishing a permanent EW range in the existing Northwest Training Range Complex (NWTRC), the electronic attack squadrons could accomplish specific Airborne Electronic Attack training requirements locally. The fixed EW emitter at Pacific Beach, as well as the mobile emitters, would be in close proximity to NAS Whidbey Island. Conducting this training in an established Military Operations Area (MOA) in close proximity to NAS Whidbey Island will help reduce fuel, travel and maintenance costs, as well as improve quality of life for those crews. The fixed, or stationary, emitter site will be located at Naval Station Everett Annex Pacific Beach, while the mobile vans will set up in remote areas overseen by the U.S. Forest Service and Washington State Dept. of Natural Resources. Twenty three total sites were identified for this project, eight in the Okanogan/Roosevelt MOAs, 15 on the Olympic Peninsula. The Navy is requesting permission from the U.S. Forest Service and Washington State Dept. of Natural Resources to use their roads for the mobile emitter vehicles.

Electronic warfare training, using the same types of fixed and mobile emitters, has occurred across the country for decades with no adverse effects to people or the environment.

Question: Why is electronic warfare training important?

Answer: Militaries around the world rely heavily upon the electromagnetic spectrum to operate their systems, such as communication, navigation, and defense-related systems and components. Impeded access to the electromagnetic spectrum can pose a serious vulnerability to military operations, especially in combat. Enhancing the electronic warfare training already being conducted will provide a more realistic training environment that allows air crews to identify and detect the kind of electronic threats they can expect to encounter when during deployed operations or as they fly into hostile territory. It also enables them to gain required aircrew qualifications before deployments.

Question: Why do you need to do this type of aviation training here?

Answer: The Pacific Northwest is an ideal area to conduct various types of Naval Aviation training. The airspace is relatively uncongested compared to other areas, and the mountainous terrain also provides a high quality, realistic training environment for the aircrew that may have to operate in a variety of terrains, including mountainous regions. The conducive weather patterns in the Northwest and temperate climate allow year-round flying. This proximity to coastal regions and varied terrain, as well as existing military training routes and special use airspace areas, makes for shorter transit times, more efficient training, reduced wear and tear on aircraft and beneficial cost savings. There are other high-quality training areas in the United States for other types of military aircraft training, yet none that have enough available airspace time and are in proximity to the units stationed at NAS Whidbey Island.

Question: *What is electromagnetic radiation?*

Answer: The phrase “electromagnetic radiation” has been used to describe the emitters’ output. Electromagnetic radiation is not the same thing as nuclear radiation. There is no nuclear radiation associated with these electronic emissions. In this case, “radiation” is simply electronic energy. The mobile emitters are similar to a television news satellite truck. The emitters will send signals skyward using frequencies that are similar to those used for some satellite communications, Wi - Fi devices, cordless phones, Bluetooth devices, weather radar systems and marine radar used on residential boats. The frequencies used are commonly-used frequencies, which makes the training challenging for the air crews to find the ‘enemy signal’ among all other existing electronic communications present in the area.

Question: *What are the potential adverse long-term health effects on people and wildlife of the electromagnetic radiation emitted by the Navy's new Growler aircraft and ground transmitters?*

Answer: These transmitters will not harm people, animals, or the environment. The operators would shut down the emitters if people even linger within the established safety zone. Regarding the mobile emitters, individuals or wildlife would have to place themselves directly in front of the radio beam that will be 14 feet atop a vehicle pointed skyward for an extended period of time to feel any effect. The armed services have been safely and successfully operating similar fixed and mobile emitters at a variety of locations across the nation.

Training on the Electronic Warfare Range will not involve the use of any weapons or “jamming” of existing signals on the ground using aircraft systems.

Question: *Are these emitters dangerous?*

Answer: There is no danger from these emitters. The Navy uses the Institute of Electrical and Electronics Engineers “Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” to make its determinations. The IEEE standard serves as a consensus standard developed by representatives of industry, government agencies, the scientific community and the public. Additionally, the Navy has a long history of

using these systems safely and employed them successfully to provide our aviators the training they need without incident or adverse effects.

Question: *What is the power output and frequency of the mobile emitters?*

Answer: The intensity or power level from the mobile emitter equipment can be varied from 100 to 300 watts. It is expected that normal power output during training activities will be at the lower end of this range and about 100 watts, as high output is not needed or desired for this type of signal. For comparison, many of us use 60-100 watt light bulbs at home. In another comparison, many commercial radio stations in the Puget Sound area have antenna power output of 100,000 watts or more.

The frequency band that the mobile emitters are capable of transmitting within is 4 to 8 gigahertz (GHz). This is within the radio wave part of the electromagnetic spectrum and are frequencies used by many other equipment, such as cordless phones, Wi-Fi and Bluetooth devices.

These mobile emitter vehicles are similar to television news satellite trucks in that they broadcast a signal skyward, but, rather than broadcasting to a satellite, these will be aimed at the participating Navy aircraft. The crews of the Navy aircraft need to learn to locate, detect and identify the signals. The mobile emitters will send signals that are similar to some satellite communications, Wi-Fi devices, cordless phones, Bluetooth devices and weather radar systems. This specific training is very important because it enables U.S. Navy aircrew to learn to safely and successfully counter those enemy defenses before they go into harm's way.

Question: *Why can't the Navy continue to do this training elsewhere, such as Idaho and Nevada?*

Answer: Electronic systems around the world continue to increase in both number and sophistication. Electronic warfare training systems used today in the Pacific Northwest do not provide the basic 'block and tackle' skills our crews need as they complete training. The fixed and mobile emitters being built to support this training provide the necessary tools to more efficiently use training time and the airspace already set aside for military flights while improving the quality of training to better prepare our crews for deployed operations.

Question: *What is the power output and frequency of the fixed emitter?*

Answer: The fixed emitter proposed for installation at Pacific Beach would be very similar to those used in the mobile emitters, with expected normal power output of about 90 watts, and a frequency band of 2 to 18 GHz. For comparison, many of us use 60-100 watt light bulbs at home. In another comparison, many commercial radio stations have antenna power output of 100,000 watts or more.

Question: I heard there may be a 10% increase in flights and more Growlers are going to be based at Whidbey Island. Is the Navy increasing its military activities over the Olympic Peninsula?

Answer: The Navy has been conducting electronic warfare training in the Olympic Military Operations Area for decades. Enhancing the existing training by adding the mobile emitters and a fixed emitter at the Navy's facility in Pacific Beach will not significantly change the amount of training done in the Olympic Military Operations Area only the quality and efficiency of that training.

The average number of flights in the Olympic Military Operations Area is 1,250 annually. That number is based on data collected over the past two years. Annual flight requirements and actual flight activities tend to fluctuate from year to year based on many variables, such as world events, deployment schedules for squadrons, budget allocations and the cost of fuel. To allow flexibility of training in these areas, the Navy has estimated that a 10 percent increase in the current averages for flight numbers may occur related to electronic warfare training activities, which amounts to less than one additional flight per day. This training has been ongoing for over 37 years and has gone largely unnoticed by the public and without significant impact to the environment.

Question: Why is the Navy doing separate environmental analyses for all the different activities involving the EA-18G Growler aircraft instead of one? What is the Navy trying to hide?

Answer: The Navy is not trying to hide anything. The Navy cares deeply about protecting the environment in which we live and work. Therefore, the Navy takes its responsibility to complete comprehensive environmental analyses for new proposals and training requirements very seriously. As we strive to maintain transparency with the community, there are various environmental analyses that have been completed or are being completed that involve the EA-18G Growler based out of NAS Whidbey Island in some way. Each analysis is for a specific, separate action with regards to proposed implementation times and areas potentially impacted by the Navy based on different requirements, which is why they are being analyzed separately.

What the environmental analyses have in common is the type of aircraft that may be part of certain training activities either around the NAS Whidbey Island complex or in existing Special Use Airspace the Navy has used for training in the Northwest for decades. The Navy's EA-18G Growler Airfield Operations Environmental Impact Statement will evaluate the potential environmental effects associated with an addition of up to 36 aircraft on NAS Whidbey Island. .

Question: What is the Navy doing to ensure the public is not harmed by gunfire or 'jamming' that will be involved in these war games?

Answer: There are no plans to conduct “war games.” Flight training will continue in these areas much as it has for the last four decades with a focus on providing more realistic training. Training means gaining and perfecting vital skills that saves the lives of our nation’s sons and daughters in uniform. Training on the Electronic Warfare Range will not involve the use of any weapons, and the aircraft doing the training will not be ‘jamming’ any existing signals.

Question: *What safety measures do you have in place to make sure no one will be harmed?*

Answer: Though there will not be any harm to humans or animals from this equipment and training, the Navy has added protective measures to even further reduce any potential for humans or animals to be near the equipment when in operation. The emitters, which are at least 14 feet above the ground, put out narrowly-focused, directional electronic signals that will be pointed skyward toward the Pacific Ocean. Set up in this direction, the mobile emitters pose no threat to people or animals below the emitters on the ground. Risk to animals or humans would only occur if they put themselves in the direct path of the signal, above the emitter, and close to the source of the signal for an extended period of time. Additionally, the Navy has implemented a 100-foot safety zone around the vehicles and mandated that crews shut down the emitters if people or animals are within that safety zone when the vehicles are in operation. This will make it so that there is virtually no chance that anyone will come near the vehicles while in operation without the operators knowing it.

The Navy will follow the rules and procedures set forth by the Institute of Electrical and Electronics Engineers (IEEE) C95.1a-2010, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” as amended 16 March 2010. Additionally, the Navy, as well as the other armed services, have decades of experience successfully operating similar fixed and mobile emitters at a variety of locations across the nation. There is a long history of these systems being safely employed to provide our aviators the training they need without incident or adverse effects.

Question: *How can you say this will not harm any humans or wildlife?*

Answer: For the Navy's mobile emitter vehicles, the safety zone around the mobile emitter vehicles when in operation is an added safety measure that the Navy is requiring of itself for the operation of this equipment. The mobile emitter vehicles will be positioned in remote areas on Forest Service logging roads carefully surveyed and selected for being sites not popular for hikers or hunters. The emitters will be 14 feet up in the air and pointed skyward toward the aircraft doing the training.

Our vehicle operators will not have any protective gear on while they are operating the equipment because they are below the emitters and not in the direct path of the signal emission and, therefore, safe. Any other wildlife that may wander through the area on the ground would similarly be safe. Birds that fly through the narrowly focused, directional signal beam would not be affected because they would not be spending a lot of time close to the emission source in the

path of the signal. The sites at which the vehicles would be positioned have existing pull-outs or turnaround spots for large trucks, and have already been cleared (harvested) or have natural open areas without a lot of trees. The mobile signal emitter vehicles would utilize those open areas and operators will have a good line of sight for humans or wildlife that may wander nearby.

Question: *Why can't you just use simulators?*

Answer: This type of instrumented electronic warfare training is already being done by Naval Air Station Whidbey Island aviators, though pieces of the training are conducted in a simulated manner. While the Navy uses simulators in many kinds of training, all simulators have limitations. Currently, electronic attack aircraft crews home-based at NAS Whidbey Island must commute 400 miles to Mountain Home Air Force Base in Idaho to conduct the specific required, realistic training that the Pacific Northwest EW Range will now provide.

Question: *What altitude will the EA-18G Growlers be flying when conducting electronic warfare training?*

Answer: Electronic warfare training does not involve flying at very low-levels above ground or flying at very high speeds. Typical electronic warfare training scenarios involving the ground emitters will be conducted between 10,000-35,000 feet above sea level with most aircraft maneuvering occurring in airspace over water off the coast.

The floor of the Olympic Military Operating Area (MOA) is 6000 feet above sea level, including its off-shore portion (inside of W-237). Flights below 6000 feet above sea level will only occur over the water and three nautical miles or more off shore.

The mission requires the aircraft to be able to directly observe the emitters, typically flying at altitudes of 15,000 feet or greater, with minimal impact on the environment. Low altitude flight does not support EW training. Supersonic flight above the United States is tightly controlled.

Question: *Why wasn't noise addressed in the Environmental Assessment?*

Answer: Noise associated with aircraft flights was not addressed in the Pacific Northwest Electronic Warfare Environmental Assessment because training in the airspace of the Olympic, Roosevelt, and Okanogan Military Operations Areas (MOAs) was previously analyzed in the Northwest Training Range Complex Environmental Impact Statement (EIS), which was completed with public input in 2010.

The number of flights is not anticipated to increase significantly over what the Navy has been flying in the region for the last few decades, and the flight altitudes at which this activity is currently conducted will not change. Electronic warfare training is typically conducted between 10,000 and 35,000 feet above sea level, so there is little chance that people will hear much noise

from aircraft flying at these higher altitudes. Accordingly, there is no expected change in existing aircraft noise.

If you are referring to noise from the emitter vehicles, that noise was analyzed in the Environmental Assessment. Chapter 3 of the Final Environmental Assessment includes information on that noise analysis. The Final Environmental Assessment can be found online at <http://go.usa.gov/kQ6e>.

Question: Will the frequencies you are using interfere with other communications systems?

Answer: All of the frequencies we would be using are vetted and go through a strict approval process. The specific frequencies are classified. Just as is the process for other agencies, we needed approval and licensing from more than 22 federal agencies, including the Federal Aviation Administration, Federal Communications Commission and National Telecommunications and Information Administration so that there would be no issues with other agencies' equipment as long as their equipment was also approved and licensed.

Question: What is the cost savings associated with moving this from the current training area in Idaho?

Answer: Currently, electronic warfare aircraft crews home-based at Naval Air Station Whidbey Island must commute 400 miles to Mountain Home Air Force Base in Idaho to complete the specific required, realistic training that the Pacific Northwest Electronic Warfare Range would now provide. Conducting training closer to where the aircraft are based will reduce fuel costs, reduce fuel emissions from the long-distance flight, and reduce wear on the aircraft. This will save the government and taxpayers about \$5 million each year.

Question: What are the adverse economic impacts to the people of the Olympic Peninsula and to the people of Washington State that would result from turning the Olympic Mountains into an electronic warfare range?

Answer: Airspace above the Olympic Peninsula has been a Military Operating Area for decades, and Navy aircraft training in that area has been and continues to be analyzed in the Northwest Training and Testing Environmental Impact Statement. Electronic Warfare specifically has been conducted nearly daily over the Olympic Peninsula for 37 years. The Navy's Pacific Northwest Electronic Warfare Range Environmental Assessment analyzed the Navy's proposal to introduce one static and three mobile emitters that will improve the current training conducted for EA-18G Growlers. The mobile trucks would use National Forest roads to travel to areas already cleared for logging trucks to operate.

Question: What is the closest elevation that a Growler aircraft would come to humans and wildlife in the Olympic National Forest? Is it really 1,200 feet (or less than one quarter of one mile)?

Answer: When the Growlers are conducting Electronic Warfare training they are flying at altitudes above 10,000 feet. Navy aircraft are currently operating in these same areas and have for the last 37 years in designated Military Operating Areas (MOA) over the Olympic peninsula. The floor of the Olympic MOA is 6000' above mean sea level and only in a very small area near Mt Olympus does this approach 1200' above ground.

Question: What is the maximum noise level that might result from Growler aircraft that are only 1,200 feet above the surface? Is it really more than 140 decibels?

Answer: The maximum noise level at 1,200 feet depends upon many factors, particularly speed, aircraft configuration and power setting. When the Growlers are conducting Electronic Warfare training they are flying at altitudes above 10,000 feet. Navy aircraft are currently operating in these same areas and have for the last 37 years in designated Military Operating Areas over the Olympic peninsula.

Question: Would the maximum noise level of Growler aircraft cause serious harm to humans and/or wildlife in the Olympic Peninsula?

Answer: There has been no harm to people or wildlife from this training that has been conducted over the Olympic Peninsula for the past 37 years, nor has there been any harm since the Growler has been operating from NAS Whidbey Island.

Question: Would the combination of increased electromagnetic radiation and/or increased noise lead to the extinction of endangered species such as spotted owls and marbled murrelets?

Answer: This type of training has been on-going over the Olympic Peninsula for the past 37 years by Navy aircraft. The only difference now is the introduction of emitters that will provide realism to the training aircrew conduct. Birds that fly through the narrowly focused, directional signal beam would not be affected because they would not stay within the signal beam for a long period of time. The sites at which the mobile emitter vehicles would be positioned have existing pull-outs or turnaround spots for large trucks, and have already been cleared (harvested) or have natural open areas without a lot of trees. The mobile signal emitter vehicles would utilize those open areas and operators will have a good line of sight for humans or wildlife that may wander nearby. Also, our vehicle operators will not need any protective gear on while they are operating the equipment as they are below the emitters and not in the direct path of the signal emission so they are safe, just like other wildlife that may wander through the area on the ground.

Question: Have other affected agencies received adequate notice about his project?

Answer: In accordance with the National Environmental Policy Act, the Navy did provide adequate notice to and had discussions about the proposal with the appropriate state and federal agencies.

Question: Is it true that a person or group must submit written comments opposing this project in order to have standing to appeal the decision? What is the appeal process? Who would the appeal be submitted to and when would the appeal need to be submitted by?

Answer: The Navy does not currently have any official comment period open for the public to comment on electronic warfare.

Please refer to the following links for more insight into the Navy's analyses for continued training in the Northwest Training Range Complex.

- A. The Pacific Northwest Electronic Warfare Range Environmental Assessment (EA) completed on August 28 with Finding of No Significant Impact (FONSI):
<http://go.usa.gov/kQ6e>
- B. Previous Environmental Impact Statement (EIS) completed in October 2010 for Northwest Training Range Complex (NWTRC); addresses aircraft training in Olympic MOAs, including EW training:
http://www.navfac.navy.mil/products_and_services/ev/products_and_services/environmental-planning/at_sea_compliance.html
- C. Ongoing Navy EIS for Northwest Training and Testing, including EW training:
<http://nwtteis.com>