Appendix H
Noise Mitigation

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1 Introduction

This appendix provides an overview of the current noise-mitigation measures that are in place as well as potential noise-mitigation measures that are being evaluated for potential future implementation at the Naval Air Station (NAS) Whidbey Island complex. The Navy takes a proactive approach to noise mitigation and addressing community concerns.

It is the Navy's as well as NAS Whidbey Island policy to conduct required training and operational flights with as minimal impact as practicable on surrounding communities. All aircrews using Ault Field, Outlying Landing Field (OLF) Coupeville, Naval Weapons System Training Facility Boardman, and the numerous northwest instrument and visual military training routes and military operations areas throughout the Pacific Northwest are responsible for conducting their mission safely and complying with published course rules, established noise-abatement procedures, and good common sense. Each aircrew must be familiar with the noise profiles of its aircraft and is expected to minimize noise impacts without compromising operational and safety requirements.

Military airfields serve a key role in the national defense. As such, Ault Field and OLF Coupeville are available for use 7 days per week, 24 hours per day, to support military mission and operational readiness needs of our nation. However, in recognizing that airfield operations are loud, the Navy considers some voluntary operational measures on a case-by-case basis, so as to not interfere with the national defense posture and operational readiness needs. If an operational need should arise, the Navy will conduct surge operations and resume operations as necessary to meet national defense requirements.

The NAS Whidbey Island complex has noise-abatement procedures for assigned and transient aircraft to minimize aircraft noise. Airfield procedures used to minimize or abate noise for operations conducted at the NAS Whidbey Island complex airfields include optimizing of flight tracks and runway usage, restricting maintenance run-up hours, and other procedures as provided in the NAS Whidbey Island Air Operations Manual NASWHIDBEYINST 3710.1AA. Additionally, aircrews are directed, to the maximum extent practicable, to employ prudent airmanship techniques to reduce aircraft noise impacts and to avoid sensitive areas except when safety dictates otherwise.

Noise sensitivity awareness is practiced at all levels of the chain of command and is discussed during various meetings and forums, such as the daily airfield operations briefing, monthly Commanding Officer's Tenant Command meeting, Instrument Ground School Aircrew refresher training, monthly Aviation Safety Council meetings, and monthly noise working group meetings.

2 Overview of Current and Potential Noise Mitigation

Careful consideration is required in attempting to harmonize both noise mitigation measures and operational requirements because the environmental noise burden placed on the communities varies greatly based on distance from Ault Field and OLF Coupeville and proximity to flight tracks to and from those airfields. This balancing must account for the fact that changes in flight operations that attempt to reduce aircraft noise on one area of the community often increase aircraft noise on others.

Elements of a balanced approach to noise minimization and mitigation are listed below (broadly, from general to specific) under the following categories:

- Limiting Noise
- Land-use Planning and Management
- Noise Abatement Procedures

2.1 Limiting Noise

One of the most effective methods of noise mitigation is the limitation of noise generation at the source. This is particularly relevant to aircraft noise because there are no barriers to decrease the amplitude of the sound energy from aircraft flying overhead. Limiting aircraft noise at the source while maintaining aircraft performance has historically presented technological challenges. As noted below, while research into different noise technologies continues, there are presently no viable technologies resulting in meaningful noise reductions without significant impacts on aircraft performance.

2.1.1 Engine and Aircraft Performance

Over the years, commercial aircraft have benefited from fuel economy and noise reduction technology while supporting an affordable commercial air travel industry. However, for military aircraft, maximizing aircraft performance has been critical in ensuring survivability in the modern battlefield against competing military aircraft and other threats, such as anti-aircraft defense systems. Thus, the competing interests of engine performance (i.e., thrust and speed), aircraft capabilities (i.e., maneuverability, agility, and range), fuel economy, and air emission reductions have had a limiting effect on the ability to design a quieter aircraft that meets the military mission requirements.

2.1.2 Design Solutions

The Navy is actively researching design solutions to reduce overall sound emissions from the engines of the Growler, as well as other measures to make carrier landings safer and more automated, thereby reducing the number of Field Carrier Landing Practices (FCLPs) required and the noise associated with FCLP.

2.1.2.1 Engine Design Solutions

Over the years, the Navy has tested a number of engine design technologies to reduce jet engine noise, including corrugated seals, water injection, air injection, and plasma actuators. These technologies showed initial promise but were ultimately not selected because of unacceptable drawbacks with respect to corrosion, weight, and the performance aspects of military aircraft. To date, the FA-18 and EA-18G Program Office has spent over $5.6 million on its jet engine noise-reduction program and continues to explore different technologies to reduce noise impacts from aircraft.

An engine design solution that has seemed the most promising is chevrons, which are specially designed mechanical sound-reduction devices installed at the end of a jet-engine exhaust nozzle. Chevrons necessitate a redesign of the jet engine. Testing confirmed that chevron technology has some positive effect on noise output; however, it also demonstrated that redesign and additional testing are necessary to fully assess any noise-reduction benefits and potential drawbacks. Therefore, while the Navy continues to pursue research and testing of chevrons, their potential use as a noise-mitigation measure remains uncertain.

2.1.2.2 Software Design Solutions

A promising software technology is Precision Landing Mode (PLM; also known as MAGIC CARPET[1]), a software change to the flight control system that makes landing the aircraft on the aircraft carrier easier. PLM is a flight control system that automates some controls to assist pilots with landing on aircraft carriers, making the flight deck operations aboard the carrier safer and more efficient. The technology reduces the workload and training required for pilots to develop and maintain proficiency for carrier landings. When implemented, this technology will result in a decrease of future FCLP training requirements, resulting in fewer FCLPs at locations such as the NAS Whidbey Island complex. PLM completed its first shore-based flight on the Super Hornet and the Growler on February 6, 2015, and was successfully demonstrated on the F-35C Joint Strike Fighter during operational testing. The introduction of PLM into the Growler fleet has begun and is scheduled to be complete by the end of 2020. This technology will help serve to increase safety and has the benefit of mitigating noise.

As the Navy continues to explore the full benefits of this technology and as newer versions of it are provided, the Navy expects that FCLP training requirements will be reduced.

While it was premature to consider reductions in FCLP requirements for the NAS Whidbey Island complex in the Draft EIS, based upon successful testing and operational use of PLM technology, the Navy has included more complete information in the Final EIS analysis. Operational factors, including incorporation of PLM and a reduced number of pilots assigned to each squadron (two fewer pilots per carrier squadron), have been factored into the analysis, and they reduce FCLP requirements at the NAS Whidbey Island complex. Implementation of PLM is expected to decrease the FCLP requirements by 20 percent, leading to a reduction in the FCLP operations presented in the Draft EIS. Therefore, this planning consideration has been applied to all the proposed alternative and scenario combinations and the No Action Alternative (CY 21). The PLM technology is not specific to this Proposed Action and would be implemented regardless of which alternative and scenario is chosen at NAS Whidbey Island.

2.1.3 Construction and Operation of Noise-Suppression Facilities (Hush House)

The Navy is considering the construction and operation of a noise suppression facility for engine maintenance (also known as a "hush house"). Since funding is required and not guaranteed, the construction and operation of a hush house is considered a potential future noise mitigation measure. The purpose of a hush house is to reduce the sound levels associated with high-power jet-engine testing following certain maintenance actions. The hush house would be capable of conducting in-frame engine testing for the Growler inside the structure. Hush house noise reduction for a similar jet engine (F-16A PW100) is approximately 10 to 20 A-weighted decibels (dBA). The "A" weighting is important because a hush house primarily works by transferring the acoustic energy into frequencies below 100 Hertz (Hz). Exact specifications of the hush house are unknown at this time, but are anticipated to be similar to those of other hush houses currently operated by the Department of Defense (DoD) at other facilities.

The proposed hush house would be located 2,200 feet northwest of an existing outdoor high-power jet-engine run-up location between Taxiways J and G. It would be oriented parallel to Taxiway J, with the aircraft facing east. The orientation of the jet engine's exhaust from the proposed hush house is assumed to be consistent with the orientation of most hush houses where the exhaust is pointed

[1] MAGIC CARPET: Maritime Augmented Guidance with Integrated Controls for Carrier Approach and Recovery Precision Enabling Technologies

skyward. Noise reduction from the operation of a hush house would be limited to, and expected to benefit, areas immediately adjacent to Ault Field.

2.1.4 Ground Operations and Aircraft Maintenance

Airfield ground operations and aircraft maintenance can also create a noise disturbance to the surrounding community. The sources of ground noise include engine testing and run-up prior to taxiing, noise from aircraft on apron and terminal stands, and aircraft maintenance facilities such as hangars and engine test stands.

Methods of controlling the noise from these operations include the re-orientation of aircraft for run-up procedures, relocating the aircraft away from noise-sensitive areas, or the use of suppressors and barriers. The NAS Whidbey Island complex can also use time-based restrictions. Other ground operations are controlled using space to separate loud operations from noise-sensitive areas and the use of buildings and screens to shield the noise. The NAS Whidbey Island Air Operations Manual states "high-power turn-ups should not be conducted prior to 1200 on Sundays or between the hours of 2200-0730 for jets and 2400-0730 for turboprops. Authorization outside these hours approved by NASWI Operations Officer for operational necessity."

2.2 Land Use Planning and Management

Beyond those mentioned above, the Navy has other policies, programs, and procedures to assist local communities in mitigating potential for existing and future noise impacts from aircraft activities at the NAS Whidbey Island complex. Generally, minimizing impacts from noise generated by military airfield activities requires comprehensive land use planning that provides adequate spatial separation between noise sources and noise-sensitive areas. Where noise problems occur around an existing airfield, or where spatial separation cannot be used to affect a satisfactory solution, other land use management options can be employed by the installation and the local community, such as those described below. In addition, the Navy will support local government efforts to apply for U. S. Department of Defense Office of Economic Adjustments programs, if local governments qualify for the offered programs.

2.2.1 Air Installations Compatible Use Zones Program

The DoD initiated the Air Installations Compatible Use Zones (AICUZ) program in the 1970s to protect the public's health, safety, and welfare and to prevent encroachment from degrading the operational capability of military air installations in meeting national security needs. The DoD recognizes that local municipalities have the authority necessary to protect the public health, safety, and welfare through implementation of compatible land use controls (i.e., zoning ordinances, building codes, subdivision regulations, use permits, noise disclosure statements, and public land acquisition). Therefore, the AICUZ program requires military installations to work collaboratively with federal, state, and local agencies and community leaders to encourage compatible development of land adjacent to military airfields. To implement the AICUZ program, the installation is required to:

- Prepare periodic AICUZ Updates to quantify aircraft noise zones and accident potential areas and provide compatible land use recommendations to local municipalities.
- Develop a prospective long-term (5 to 10 years) analysis and develop a strategy to promote compatible development in the community to address future changes.

- Coordinate with federal, state, and local agencies and community leaders in order to maintain public awareness of the AICUZ program.
- Promote encroachment partnering projects in order to achieve long-term encroachment protection.

NAS Whidbey Island has an active AICUZ program that informs the public about its aircraft noise environment, and recommends specific actions for the local jurisdictions with planning and zoning authority that can enhance the health, safety, and welfare of those living near Ault Field and OLF Coupeville (see Section 3.5.2.2). The current version of the AICUZ plan for the NAS Whidbey Island complex was published in 2005, and it is considered a current noise-mitigation measure that describes the Navy's recommendation for compatible land use. The 2005 AICUZ Update for NAS Whidbey Island's Ault Field and OLF Coupeville was used by Island County to inform their current land-use management practices and is the foundation for Island County's comprehensive plan and zoning ordinances.

The Proposed Action would result in larger day-night average sound level (DNL) noise contours and noise exposure, encompassing a larger land area. These changes to the DNL contours may result in changes to land use recommendations. Therefore, the Navy will continue to work with Island County, the City of Oak Harbor, the Town of Coupeville, and other communities as needed to plan for compatible development, land use zoning, and building construction standards. Following a signed Record of Decision for the Proposed Action, the Navy could pursue any of the following:

1. Prepare an AICUZ Update to address any increases of land area within the greater than 65 dB DNL noise contours and, if applicable, the establishment of accident potential zones (APZs) for the runways at OLF Coupeville.
2. Coordinate with state and local agencies on compatible land use and potential encroachment concerns inside and outside of the DNL footprint (i.e., large-scale developments, transportation projects that could encourage development, or tall structures such as cell towers that could penetrate airfield imaginary surfaces[2]).
3. Encourage municipalities to promote the highest and best use of land by updating local zoning ordinances and building construction standards, especially for high-noise areas.
4. Encourage municipalities to adopt legislative initiatives to acquire interest in developed properties in order to curb and mitigate encroachment near military installations and to protect the public from noise exposure and accident potential.
5. Identify potential Readiness and Environmental Protection Initiative (REPI) projects and work to acquire interest in undeveloped properties near the installation as a means to prevent incompatible development or loss of habitat.
6. Support any comprehensives community planning efforts, such as a Joint Land Use Study (JLUS) funded by the DoD Office of Economic Adjustment.

2.2.2 Land Use Zoning

1. The Washington Growth Management Act (WGMA) was adopted in 1990 because the Washington State legislature found that uncoordinated and unplanned growth posed a threat to

[2] Imaginary surfaces are three-dimensional areas extending from the runway surface in all directions at various angles and altitudes, which have certain associated height and obstruction criteria in order to provide safe operating areas for aircraft utilizing the runway.

the environment, sustainable economic development, and the quality of life in Washington. The WGMA requires state and local governments to manage Washington's growth by identifying and protecting critical areas and natural resource lands, designating urban growth areas, and preparing comprehensive plans and implementing them through capital investments and development regulations. The WGMA has been amended several times, including in 2005, when provisions were added to address development around military installations. The 2005 amendment recognizes that military installations are of particular importance to the economic health of Washington's economy and quality of life. As such, the WGMA requires that county and city comprehensive plans restrict development in the vicinity of military installations that is incompatible with the installation's ability to carry out its mission requirements.

Furthermore, to build on direction and processes for compatible land use planning as a result of the WGMA, the Washington Department of Commerce released a civilian-military land use study in December 2016 that provided recommendations to improve compatible land use planning through partnerships, to clarify processes, to amend legislation, and to allocate funds (for the resolution of land incompatibility issues, protection of habitat, and conservation of rural areas) (The Spectrum Group, 2016).

2. Island County

   Zoning is the primary land use control employed by Island County to control development on non-federal land. The majority of parcels under county jurisdiction near Ault Field and OLF Coupeville and within the overlay district are zoned in the following categories:

   a. Rural, which permits one dwelling unit per 5 acres
   b. Rural Agriculture, which permits one dwelling unit per 10 acres
   c. Rural Forest, which permits one dwelling unit per 10 acres
   d. Urban Growth Area (south of Ault Field), where density is limited to three dwelling units per 5 acres; in addition, within the Urban Growth Area, the City of Oak Harbor has identified various future land uses, including industrial, planned industrial park, community commercial, open space, and planned business park
   e. Rural Residential areas west and southwest of OLF Coupeville, where permitted density varies from one to three units per acre

   Island County acknowledges the county's association with the NAS Whidbey Island complex as well as the impacts associated with aircraft operations at Ault Field and OLF Coupeville. The plan designates an "Airport and Aviation Safety Overlay," which represents the high-noise areas as well as areas under the APZs within Island County where special land use controls exist to ensure public health, welfare, and safety. This overlay recommends that future land use adjacent to Ault Field and OLF Coupeville be maintained as rural to encourage low-density development within the air station's DNL contours and APZs. In 2015, Island County updated its Airport and Aircraft Operations Noise Disclosure Ordinance for property sold, rented, or leased within the DNL contours around the NAS Whidbey Island complex. The disclosure ordinance gives notice to prospective buyers, renters, or lessees that the property of interest is subject to aircraft noise. Island County also enforces a separate Noise Level Reduction Ordinance, which sets minimum standards for building construction within the DNL contours.

3. City of Oak Harbor

   The City of Oak Harbor adopted Navy AICUZ noise contours (initially adopted in 1986 and

updated in 2005) to implement its Aviation Environs Overlay Zone through the city's zoning ordinance and other elements of the city's municipal code. Land within the Aviation Environs Overlay Zone is designated for low-density development. Existing land use and zoning regulations in the Aviation Environs Overlay Zone are consistent with Navy recommendations for land use compatibility within the APZs. The goals and policies in the city's comprehensive plan support adoption of codes for compatible development within the APZs.

4. Town of Coupeville
   In October 1994, The Town of Coupeville adopted a comprehensive plan, which has since been updated several times, most recently in July 2003. The plan recognizes the beneficial economic relationship the town has with Ault Field and OLF Coupeville; however, it does not specifically adopt or mention the Navy AICUZ noise contours.

2.2.3 Encroachment Partnering Efforts

In addition to the current AICUZ program and local planning and management guidelines, other noise-mitigation options involving local partnerships are available. The Navy has encouraged Island County to establish APZs around OLF Coupeville and to establish land use controls and building standards appropriate for high noise areas. The establishment of Ebey's Landing National Historical Reserve (of which the Navy is one of the many landowners) as well as the Navy's Readiness and Environmental Protection Integration program, have helped to ensure compatible land use and development around OLF Coupeville. Currently, NAS Whidbey Island has a REPI program in place. In addition, there are other programs that are employed at other military bases, and the Navy may consider implementing similar ones at NAS Whidbey Island in the future. The existing REPI program, as well as JLUSs, acquisition programs, and roll-back incentives, are discussed below.

1. Readiness and Environmental Protection Integration
   The DoD's REPI program is a key tool for combating the airfield encroachment that can limit or restrict military training, testing, and operations. The REPI program protects these military missions by helping remove or avoid land-use conflicts near installations, and addressing regulatory restrictions that inhibit military activities. The REPI program is administered by the Office of the Secretary of Defense (OSD).
2. A key component of the REPI program is the use of buffer partnerships among the military services, private conservation groups, and state and local governments, authorized by 10 U.S.C., Section 2684a. These partnerships share the cost of acquisition of easements or other interests in land from willing sellers to preserve compatible land uses and natural habitats near military facilities that help sustain critical military mission capabilities that are at-risk from external encroachment pressures (DoD, 2017).

   Through the REPI program, NAS Whidbey Island has been able to protect land uses under the primary flight corridors at both airfields within the NAS Whidbey Island complex. As of January 2018, the Navy has invested $13.8 million in direct payments to landowners willing to maintain compatible uses within the flight corridors. These easements protect local farms and endangered species, as well as prevent incompatible uses within the most heavily used air space. Through this program, NAS Whidbey Island has protected 1,505 acres of open space and working farms and has preserved the rural character of Ebey's Landing National Historical Reserve (NAS Whidbey Island, 2018).

The Conservation Futures Funds program is operated by Island County to preserve and protect valuable and sensitive lands for future generations. Island County Commissioners have the ability to establish specific goals for awarding these local grant contributions. In the most recent cycle, lands that also protected NAS Whidbey Island were awarded extra points as the local priority for grant awards. NAS Whidbey Island has many partners in easement acquisitions around the NAS Whidbey Island complex, and the Conservation Futures Funds are often the source of local matching funds for the REPI easement acquisitions (NAS Whidbey Island, 2018).

3. Joint Land Use Study
   Whereas an AICUZ study represents the Navy's compatible land use recommendations to the community, a JLUS is a community-developed document. The community-led JLUS encourages collaborative planning and communication while encouraging compatible development near military facilities as those communities adjoining military facilities experience growth. Additional land use requirements for compatibility may result from JLUS agreements. The JLUS is produced in partnership with the DoD Office of Economic Adjustment. A JLUS has not been initiated at the NAS Whidbey Island complex, but one could be evaluated in the future as a potential noise-mitigation measure, and it remains a tool for long-term consideration to address land use compatibility surrounding Ault Field and OLF Coupeville.
4. Acquisition Programs and Roll-Back Incentives
   As stated above, the civilian-military land use study provides recommendations to improve compatible land use planning through partnerships, to clarify processes, to amend legislation, and to allocate funds (for the resolution of land incompatibility issues, protection of habitat, and conservation of rural areas) (The Spectrum Group, 2016). The state identifies the potential to participate in acquisition programs and roll-back incentives in the future, although these programs are not currently established around NAS Whidbey Island. These programs have been implemented successfully in similar situations in other communities with military airfields. For example, a partnership between the Commonwealth of Virginia, the City of Virginia Beach, and the City of Chesapeake has successfully worked to decrease encroachment of incompatible development around NAS Oceana and Naval Auxiliary Landing Field (NALF) Fentress.

   By combining land use controls, an acquisition program, and roll-back incentives, the City of Virginia Beach has achieved a decrease in density and incompatible land uses surrounding NAS Oceana. The Interfacility Traffic Area (ITA) Acquisition Plan has been similarly successful in the City of Virginia Beach. The city's acquisitions, coupled with its other holdings in the ITA, allow the city to control the majority of land in the ITA to ensure it is used in a way that is compatible with the mission of NAS Oceana. The city was able to further regulate this area through the creation of the Rural AICUZ Area. The city has continued to incentivize businesses that bring about conformity in APZ-1. The opportunity for development or re-development in APZ-1 is lucrative for compatible users, stimulating the conversion of incompatible development surrounding the air station. As every acquisition is evaluated, the city examines ways to merge properties and "roll back" density or incompatibility. The city and state have committed $109,150,000 to support the program.

   The City of Chesapeake has also made its own commitments in order to protect NALF Fentress and has documented significant legislative changes to prevent future encroachment. Planning policy in the City of Chesapeake includes programs for acquisition of conservation easements. An easement purchase is the purchase of a portion or all of the development rights on a

property. Compensation is provided to the landowner in exchange for restrictions placed on the land's deed, in perpetuity. This encourages and promotes preservation of open space and agricultural lands throughout the city by means that are voluntary rather than regulatory (EDAW, Inc., et al, 2005).

2.2.4 Insulation to Properties

Domestic dwellings in high-noise zones that are affected by noise may need to have their sound insulation improved to limit internal noise. The methods of improving sound insulation involve improving insulation of windows and doors along with roof insulation and the attenuation of roof ventilation and blocking of chimney flues. The Federal Aviation Administration (FAA) has published a helpful resource with information to incorporate sound-reduction measures in homes and private property. This resource is entitled "Guidelines for Sound Insulation of Residences Exposed to Aircraft Operations," and it is available for download at: http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.information/documentNumber/150_5000-9A.

Typically, city and county ordinances contain sound attenuation standards and land use controls. As discussed in Section 1.2.2.2, Island County has enacted several ordinances for land use controls, noise disclosure, and building construction standards.

While Congress enacted legislation for commercial airports to collect fees and to provide sound insulation in neighborhood homes, schools, and buildings under the Part 150 Program (which is an FAA-specific program), Congress has not given the military services the authority to install soundproofing in homes, schools, and buildings that are not owned by the federal government. Therefore, NAS Whidbey Island relies on a robust AICUZ program supported by the Installation Commanding Officer, Air Operations Officer, Public Affairs Officer, and Community Planning and Liaison Officer. As a general matter, the Navy does not have legal authority to expend federal funds on improvements to state, local, or private property, and the Navy does not provide compensation for perceived loss of property values, noise attenuation, and loss of business profitability.

2.3 Noise Abatement Operational Procedures

There are several ways to limit aircraft noise by adjusting how aircraft fly, called operational procedures, while meeting the national defense mission. Operational procedures are changes in the way a specific aircraft flies during a specific activity/operation, in accordance with FAA and Navy procedures.

Aircrews shall employ, to the maximum extent possible, prudent airmanship techniques to reduce aircraft noise impacts and avoid noise-sensitive areas, except when being vectored by radar air traffic control (ATC) or specifically directed by the control tower. Noise abatement requires knowledge of the course rules and proper policies. High-power settings and erratic power control are the two variables that have the greatest noise impact on the public. Both are directly controllable by the pilot. Aircrews shall reduce power after safely airborne, avoid full power when possible, and apply power smoothly to be consistent with professional aviation and noise abatement goals.

2.3.1 Public Involvement

NAS Whidbey Island's Commanding Officer takes public concerns seriously and has processes in place that allow members of the public to comment about and seek answers to questions about operations at the installation and ensure those comments are reviewed by appropriate members in his command.

Public Outreach

The NAS Whidbey Island complex has an active public relations program to inform members of the public of upcoming FCLP so that individuals have the ability to plan their personal activities. Information on FCLP training schedules is shared every week with the media in the Puget Sound region and is posted on the command's Facebook page and webpage every week. Members of the public also have the option to obtain these releases directly by signing up for them on the command's webpage news section. The command uses the same process to inform the public about other events that may increase noise or have more impacts on specific areas for short periods of time.

Noise Complaint Hotline

NAS Whidbey Island complex investigates all noise complaints to determine compliance with FAA regulations and base Standard Operating Procedures. These investigations ensure that both Navy and public interests are protected and provide ongoing communication between the base and the local communities. Persons with complaints or comments may call a recorded complaint hotline at (360) 257-6665 or email at comments.NASWI@navy.mil. The Operations Duty Officer records the pertinent information from these comments such as who called, in addition to the location, time, and description of the noise-generating event. Callers may request a response or feedback and should provide their name and contact information.

The Operations Duty Officer provides copies of the complaints to the Commanding Officer, Executive Officer, Operations Officer, Community Planning and Liaison Officer, and Public Affairs Officer the following day, and each complaint receives a thorough analysis and a recommendation to address the issue. When necessary, the base officials may communicate directly with the complainant. The Community Planning and Liaison Officer maintains a file of noise complaints for historical records and trend analysis.

2.3.2 Noise Abatement Best Practices

The Navy understands aircraft operations can be loud and takes measures to ensure that all personnel are mindful of aircraft noise impacts on the local community. The Navy has operated at the NAS Whidbey Island complex for decades and as such, noise abatement best practices have changed over time. Seasonal changes such as wind direction and hours of darkness will influence noise abatement protocols throughout the year. Consistent with Navy procedures, care is taken to minimize aircraft noise whenever possible by utilizing best practices, especially during acoustic-night operations (10:00 PM to 7:00 AM), when aircraft operations may be especially disturbing. A list of existing noise abatement operational procedures by aircrews, ATC, and personnel stationed at NAS Whidbey Island is provided below.

Aircrews

1. All aircrews using the NAS Whidbey Island complex are responsible for the safe conduct of their mission while complying with published course rules, noise-abatement procedures, and good common sense.

2. Aircrews attend annual training about airfield operating procedures and noise abatement protocols.
3. During the pre-flight planning process, aircrews review current notices to airmen and the latest weather reports. In addition, those aircrews that operate from NAS Whidbey Island are knowledgeable in the current airfield noise-abatement procedures, approach and departure procedures, and engine run-up policies. Those aircrews that do not regularly operate from NAS Whidbey Island shall review these policies and procedures prior to flight.
4. Aircrews, to the maximum extent possible, employ prudent airmanship techniques to avoid all published noise-sensitive areas by required minimum distances.
5. Aircrews ensure compliance with applicable altitude and airspeed requirements as defined in the airfield operating procedures and their aircraft's standard operating procedures for airfield approaches and departures.
6. Aircrews observe all ATC instructions and airfield operating procedures. Flight operations shall be executed in the safest manner possible and consistent with FAA and Navy procedures.

Air Traffic Control

1. ATC conducts an annual procedure review to recommend and implement new airfield noise awareness programs.
2. ATC personnel provide direction to aircrews to ensure aircraft operate at the highest practical altitude for an arriving aircraft and when climbing for a departing aircraft.
3. ATC personnel provide direction to aircrews to keep aircraft above 3,000 feet above ground level (AGL) over noise-sensitive areas except as required for approved approach, departure, and landing pattern procedures.

NAS Whidbey Island Air Operation Department

1. The Air Operations Department is responsible for conducting periodic aircrew training to provide familiarization with course rules, appropriate noise abatement procedures, and the importance of good community relations.
2. Noise complaints are investigated to determine whether the noise was from NAS Whidbey Island aircraft operations and that aircrews followed the correct flight procedures.
3. A written airfield operating procedures manual is reviewed annually and updated to document airfield safety, ground support, and noise abatement procedures in order to ensure safe and efficient operations.
4. The Air Operations Department works with the NAS Whidbey Island Public Affairs Officer (PAO) to announce changes to routine airfield operations and to advise the public of a potential increase in operational tempo related to FCLP schedules and high-noise events.
5. Signs are posted in aircrew information centers and other conspicuous places (i.e., airfield entry points) providing aircrews with reminders of noise abatement procedures for noise-sensitive areas and the importance of good community relations.
6. Air Operations staff investigate optimal use and potential placement of visual and electronic approach aids, blast fences, and ground run-up enclosures, which may aid noise-abatement procedures at the airfield. NAS Whidbey Island has two blast fences/shields at the two Growler high-power ground turn-up locations.

7. The Air Operations Officer considers and proposes noise-abatement procedures to support long-term airfield operations as well as any temporary changes to airfield operations (i.e., airshow practice, runway closure).
8. The Air Operations Officer continually reviews operational procedures to identify operational changes to reduce noise within the constraints of safety, mission effectiveness, and economy.
9. The Air Operations Department provides weekly FCLP schedules for Ault Field and OLF Coupeville to the NAS Whidbey Island Public Affairs Office for publication.
10. The Air Operations Officer participates in bi-annual community leadership forums to discuss issues of mutual importance between the installation and the local communities.
11. The Air Operations Department monitors airfield operational schedules and attempts to mitigate potential operational impacts during key academic testing periods in schools and during large-scale community events such as the Penn Cove Mussel Fest.

NAS Whidbey Island Community Liaison Officer (CPLO)

1. The CPLO is responsible for management of the installation's AICUZ program.
2. The CPLO makes presentations to and interfaces with local governments, planning and zoning boards, community organizations, and citizens regarding the military mission and compatible land use.
3. The CPLO maintains a file of noise complaints for historical record-keeping and trend analysis, and responds to public concerns or inquiries on aircraft and airfield operations.
4. The CPLO coordinates with state and local agencies on compatible land use and potential encroachment concerns inside and outside of the DNL footprint (i.e., large-scale developments, transportation projects that could encourage development, or tall structures such as cell towers that could penetrate airfield imaginary surfaces).
5. The CPLO supports municipalities' efforts for compatible development (i.e., JLUS application, REPI project endorsements, and other encroachment partnership efforts).

Takeoff and Landing Procedures

Controls on flight paths are sometimes applied where certain departures and arrivals occur over densely populated areas. Noise Preferential Routes are often prescribed to avoid populated areas. For noise-abatement purposes, the flight tracks are most useful for departures, where there is more flexibility on routing. A rotation of operating runways may be used, with flight tracks distributed in a more or less equal pattern, in an attempt to spread the noise in a geographically even manner across the surrounding communities. In other cases, runways can sometimes be alternated preferentially to reduce operations over more-populated areas. Runway rotation is limited by the wind speed and direction on a day-to-day basis.

Aircraft produce their loudest noise during takeoff, when close to full power. If residential or other sensitive areas are situated close to the airport, the aircraft will be relatively low when crossing above them, and noise limitation measures may be needed. Several best practices can be applied to these procedures. The NASWI Air Operations Manual (NASWHIDBEYINST 3710.1AA) specifically designates 16 specific noise-sensitive areas in the local flying area and has identified 20 noise-abatement procedures. The Manual is an evolving document that can be, and is, modified over time as operations dictate and needs evolve. These procedures are designed to improve communication, coordination, and flight integrity and include:

- The maximum number of aircraft in the FCLP flight pattern is five. This is so the FCLP pattern stays within the 5-mile radius of the airfield; thereby limiting noise impacts to the immediate vicinity of the airfield, and allowing non-FCLP aircraft to operate concurrently.
- Make smooth power changes, if practicable. Large, abrupt changes in power result in large, abrupt changes in sound level on the ground.
- Sunday Operations: From 7:30 AM to noon local time on Sundays, noise abatement procedures require arrivals, except scheduled FCLP/Carrier Controlled Approach (CCA) aircraft and NAS Whidbey Island drilling reservists, to make a full-stop landing. High-power run-ups should not be conducted prior to noon on Sundays or between the hours of 10:00 PM and 7:30 AM for jets and midnight and 7:30 AM for turboprops. For specific operational necessity requirements, high-power run-ups may be authorized outside these established hours.
- Arrival/departure corridors and flight patterns may be over noise-sensitive areas. Aircrews must, to the maximum extent possible, employ prudent airmanship techniques to reduce aircraft noise impacts and to avoid noise-sensitive areas except when being vectored by radar ATC or specifically directed by the control tower.
- The depart and re-enter procedure will not normally be authorized before 7:00 AM or after 10:00 PM, unless during scheduled FCLPs or directed by the control tower for sequencing. Multiple depart and re-enter maneuvers by the same aircraft are generally discouraged.
- Military jet aircraft on Instrument Flight Rules (IFR) vectors to Runway 14 at Ault Field from the west should, when possible, maintain smooth power settings and may delay landing gear extension until crossing the NUW 300R (i.e., preparing to turn to the final approach course), to the maximum extent practicable.
- Aircraft observed flying outside of the confines of the published patterns will be directed to regain pattern integrity.
- After 6:00 PM, FCLPs are not permitted on Runway 32 at Ault Field unless specifically approved by the NAS Whidbey Island Operations Officer.
- The NAS Whidbey Island complex has existing procedures to maximize the number of departures from Runway 25 at Ault Field because aircraft depart from it to the west, over the water.
- Runway Use Program (Ault Field)
    a. Wind component and traffic permitting, morning departures prior to 8:00 AM must use Runway 25 to maximize flight over open water.
    b. Wind component and traffic permitting, evening arrivals after 10:00 PM must use Runway 7 to maximize flight over open water. In the interest of safety, consideration should be given to use of a runway with approach and/or centerline lighting during instrument metrological conditions.
    c. Runway 7 is designated the primary landing runway when the wind is 5 knots or less with a direct tailwind component no greater than 3 knots.
    d. Runway 25 is designated the primary departure runway when the wind is 5 knots or less with a direct tailwind component no greater than 3 knots and no operations are being conducted on Runway 7. Aircraft must avoid flying over residential areas to the maximum extent possible.

- The Operations Duty Officer has the primary responsibility for determining the OLF Coupeville active runway. Surface winds as well as winds at pattern altitude are considered. The runway most nearly aligned with the wind must be used when the wind speed is 5 knots or more. When the wind speed is less than 5 knots, the ODO must ensure equitable runway distribution. The Operations Officer must review runway use records/logs to assist in equitable runway selection. NAS Whidbey Island goal for runway use is an equitable split contingent on winds.
- Departing Coupeville Runway 14 for Ault Field Runways 7 or 14: Low transitions prohibited.

The Navy must follow governing FAA rules and regulations when flying. Arrival and departure corridors into and out of the NAS Whidbey Island complex have been developed in conjunction with the FAA over decades, with an emphasis on flying over water and avoiding more densely populated areas. These corridors are designed to de-conflict military, commercial, and general aviation routes. Additionally, as a best practice, aircrews avoid noise-sensitive and wilderness areas by flying at altitudes of no less than 3,000 feet AGL, except when in compliance with an approved traffic or approach pattern, military training route, or within Special Use Airspace.

2.3.3 Additional Oversight Measures

NAS Whidbey Island's Commanding Officer takes public concerns seriously and has processes in place for additional oversight measures. While Ault Field and OLF Coupeville are available for use 7 days per week, 24 hours per day, prevailing wind directions as well as noise-abatement procedures will dictate which runways are used. Additionally, to ensure transparency with community leaders and the public, the following oversight measures are currently implemented or being considered for adoption, and others may be added or changed as needs change over time:

- The NAS Whidbey Island complex will publish FCLP schedules for the upcoming week.
- FCLP training schedules will be managed by the NAS Whidbey Island complex Air Ops and VAQ Wing to ensure operations remain consistent with conditions studied under the National Environmental Policy Act.
- FCLP training that occurs after 11:59 PM at OLF Coupeville and after 1:00 AM at Ault Field must have approval of the NAS Whidbey Island complex Operations Officer.
- During FCLPs, Landing Signal Officers (LSOs) shall maintain two-way communication with ATC and all participating aircraft to ensure pattern integrity and proper sequencing of aircraft.
- High-power engine run-ups and takeoff abort practice require approvals from either NAS Whidbey Island Air Ops or ATC.
- During FCLPs, the LSO will be present and monitor approaches to the airfield to ensure patterns do not extend too far from the airfield.
- Nighttime operations, in particular those resulting from schedule delays occurring throughout the day, require additional approvals.

3 References

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