

necessary to issue an Order to Show Cause because the permittee has voluntarily consented to this channel change.

The document also solicits comment on whether Stations WMOM(FM) and WMLQ(FM) would seek reimbursement for application costs in implementing these channel changes in the event that we delete Channel 274A at Evert and, if so, whether these expenses are reimbursable and by whom. Conversely, if we retain Channel 274A at Evert, the document solicits comment on whether the holder of the Ludington construction permit would consent to reimburse Station WMLQ(FM) for the costs of its channel change because the Ludington permittee would not have to wait for the auctioning of the Evert allotment in order to commence operations at Ludington.

Finally, the proposed reference coordinates for Channel 274A at Penwater are 43–52–10 NL and 86–21–32 WL. With respect to Ludington, a staff engineering analysis reveals that the transmitter site specified in the construction permit for Channel 249A at Ludington is not fully spaced if we substitute Channel 242A. We have identified an alternate site for Channel 242A at Ludington that is fully spaced at reference coordinates 43–54–30 NL and 86–26–10 WL. The proposed reference coordinates for Channel 249A at Manistee are 44–14–07 NL and 86–19–05 WL.

Provisions of the Regulatory Flexibility Act of 1980 do not apply to this proceeding. Members of the public should note that from the time a Notice of Proposed Rule Making is issued until the matter is no longer subject to Commission consideration or court review, all *ex parte* contacts are prohibited in Commission proceedings, such as this one, which involve channel allotments. See 47 CFR 1.1204(b) for rules governing permissible *ex parte* contacts.

For information regarding proper filing procedures for comments, see 47 CFR 1.415 and 1.420.

List of Subjects in 47 CFR Part 73

Radio, Radio broadcasting.

Federal Communications Commission.

Nazifa Sawez,

Assistant Chief, Audio Division, Media Bureau.

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR Part 73 as follows:

PART 73—RADIO BROADCAST SERVICES

■ 1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 303, 334, 336 and 339.

§ 73.202 [Amended]

■ 2. Section 73.202(b), the Table of FM Allotments under Michigan, is amended by removing, Evert, Channel 274A; by removing Channel 249A at Ludington and by adding Channel 242A at Ludington.

[FR Doc. 2013–29293 Filed 12–6–13; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 95

[GN Docket No. 12–354; FCC 13–144]

Commission Seeks Comment on Licensing Models and Technical Requirements in the 3550–3650 MHz Band; Correction

AGENCY: Federal Communications Commission.

ACTION: Proposed rule; correction.

SUMMARY: This document corrects a document published in the *Federal Register* on December 4, 2013. This correction notes that the document incorrectly referred to itself as a “proposed rule” or “notice of proposed rulemaking” rather than a “document.” In addition, the reply comment date for the document is December 20, 2013, and not March 20, 2013.

DATES: The comment due date for the proposed rule published December 4, 2013, at 78 FR 72851, remains December 5, 2013. Reply comments are due December 20, 2013.

FOR FURTHER INFORMATION CONTACT: Paul Powell, Attorney Advisor, Wireless Bureau—Mobility Division at (202) 418–1613 or Paul.Powell@fcc.gov.

SUPPLEMENTARY INFORMATION:

Correction

In FR Doc. 2013–28254, in the issue of December 4, 2013, at 78 FR 72851, make the following corrections:

1. On page 72851, in the **SUMMARY** section, remove “notice of proposed rulemaking” and add in its place “document.”

2. On page 72851, in the **DATES** section, revise the reply comment date to read “December 20, 2013.”

3. On page 72852, in the left column in the **SUPPLEMENTARY INFORMATION**

section, remove “, Notice of Proposed Rulemaking, 78 FR 1188 (January 8, 2012) (NPRM or 3.5 GHz NPRM)”.

4. On page 72852, in the center column, revise the subject heading “Synopsis of the Public Notice of Proposed Rulemaking” to read “Synopsis of the Document”.

5. Beginning on page 72852, in the third column, at the second paragraph of section I (Introduction) in the **SUPPLEMENTARY INFORMATION** section, revise the terms “proposed rule” and “notice of proposed rulemaking” to read “document”.

Dated: December 4, 2013.

Federal Communications Commission.

Gloria J. Miles,

Federal Register Liaison.

[FR Doc. 2013–29294 Filed 12–4–13; 4:15 pm]

BILLING CODE 6712–01–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 217

[Docket No. 130820738–3738–01]

RIN 0648–BD62

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to U.S. Air Force Launches, Aircraft and Helicopter Operations, and Harbor Activities Related To Launch Vehicles From Vandenberg Air Force Base (VAFB), California

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS has received a request from the U.S. Air Force (USAF) for authorization to take marine mammals, specifically pinnipeds, by harassment, incidental to launches, aircraft and helicopter operations from VAFB launch complexes and *Delta Mariner* operations, cargo unloading activities, and harbor maintenance dredging in support of the Delta IV/Evolved Expendable Launch Vehicle (EELV) launch activity on south VAFB from February 2014 to February 2019. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue regulations and subsequent Letters of Authorization (LOAs) to the USAF to incidentally harass marine mammals.

DATES: Comments and information must be received no later than January 8, 2014.

ADDRESSES: You may submit comments on this document, identified by 0648-BD62, by any one of the following methods:

- **Electronic Submissions:** Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to: www.regulations.gov, enter 0648-BD62 in the "Search" box, click the "Comment Now!" icon, complete the required fields, and enter or attach your comments.

- **Mail:** Submit written comments to P. Michael Payne, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910.

- **Fax:** 301-713-0376, Attn: Candace Nachman.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted to <http://www.regulations.gov> without change. All Personal Identifying Information (for example, name, address, etc.) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information. NMFS will accept anonymous comments (enter N/A in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, WordPerfect, or Adobe PDF file formats only.

A copy of the application containing a list of references used in this document may be obtained by visiting the Internet at: <http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>. Documents cited in this proposed rule may also be viewed, by appointment, during regular business hours at the above address. To help NMFS process and review comments more efficiently, please use only one method to submit comments.

FOR FURTHER INFORMATION CONTACT: Candace Nachman, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (Secretary) to allow, upon request, the incidental, but

not intentional taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings may be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for certain subsistence uses, and that the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as: "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

The National Defense Authorization Act of 2004 (NDAA) (Pub. L. 108-136) removed the "small numbers" and "specified geographical region" limitations and amended the definition of "harassment" as it applies to a "military readiness activity" to read as follows (Section 3(18)(B) of the MMPA): "(i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B Harassment]."

Based on a previous request from the USAF, NMFS issued regulations and LOAs to the USAF to allow it to take species of pinnipeds at the VAFB. Those regulations and LOAs expire on February 6, 2014.

Summary of Request

On June 24, 2013, NMFS received an application from the USAF requesting an LOA for the take of five species of pinnipeds incidental to USAF launch, aircraft, and helicopter operations from VAFB launch complexes and *Delta Mariner* operations, cargo unloading activities, and harbor maintenance dredging. The *Delta Mariner* operations, cargo unloading, and harbor maintenance dredging are conducted in

support of the Delta IV/EELV launch activity from Space Launch Complex 6 on south VAFB. NMFS proposes regulations to govern these activities, to be effective from February 7, 2014, through February 7, 2019. The USAF is requesting a 5-year LOA for these activities. These training activities are classified as military readiness activities. The USAF states that these activities may result in take of marine mammals from noise or visual disturbance from rocket and missile launches, as well as from the use of heavy equipment during the *Delta Mariner* off-loading operations, cargo movement activities, increased presence of personnel, and harbor maintenance dredging. The USAF requests authorization to take annually five pinniped species by Level B Harassment.

Activities relating to the *Delta Mariner* operations have been previously authorized by NMFS under annual Incidental Harassment Authorizations (IHAs). To date, we have issued 10 IHAs to United Launch Alliance (working on behalf of the USAF) to take marine mammals incidental to conducting operations in support of Delta IV/EELV launch activity from Space Launch Complex (SLC) 6. The most recent IHAs were effective from September 26, 2012, through September 25, 2013. Through this proposed rulemaking, NMFS and the USAF are incorporating the *Delta Mariner* operations into the rulemaking for the launch, aircraft, and helicopter operations at VAFB. *Delta Mariner* operations will not resume until a final rule and subsequent LOA are issued to cover the incidental take of marine mammals in the vicinity of the proposed operations.

Description of the Specified Activity

VAFB Launch Activities and Aircraft and Helicopter Operations

VAFB (see Figure 1 in the USAF application) is headquarters to the 30th Space Wing (SW), the Air Force Space Command unit that operates VAFB and the Western Range. VAFB operates as a missile test base and aerospace center, supporting west coast space launch activities for the USAF, Department of Defense, National Aeronautics and Space Administration, and commercial contractors. VAFB is the main west coast launch facility for placing commercial, government, and military satellites into polar orbit on expendable (unmanned) launch vehicles, and for testing and evaluating intercontinental ballistic missiles (ICBM) and sub-orbital target and interceptor missiles. In

addition to space vehicle and missile launch activities at VAFB, there are helicopter and aircraft operations for purposes such as search-and-rescue, delivery of space vehicle components, launch mission support, security reconnaissance, and training flights. The USAF anticipates that the space and missile launch frequency will not exceed a combined total of 50 launches

(35 rockets and 15 missiles) per year from VAFB. Table 1 in this document outlines the numbers of rocket and missile launches that occurred in 2011, 2012, and 2013. Although subject to change, Table 2 presents preliminary estimates of the numbers of rocket and missile launches from VAFB during calendar years 2014 through 2019. Estimates for the earlier years are likely

more accurate than those for the last two to three years. However, as noted earlier, the launch frequency is not anticipated to exceed 50 launches in a given year. Any launches over this amount would require additional coordination between NMFS and the USAF before they occur.

TABLE 1—NUMBERS OF ROCKET AND MISSILE LAUNCHES IN CALENDAR YEARS 2011, 2012, AND 2013, FROM VAFB

Year	Rocket launches	Missile launches
2011	7	2.
2012	2	2.
2013	4 (as of Sept. 24, 2013, 3 rockets launched with 1 additional planned before Dec. 31).	5 (as of Sept. 24, 2013, 3 missiles launched with 2 additional planned before Dec. 31).

TABLE 2—PRELIMINARY NUMBERS OF PROJECTED ROCKET AND MISSILE LAUNCHES IN CALENDAR YEARS 2014 THROUGH 2019 FROM VAFB

[The projections for calendar years 2018 and 2019 are highly preliminary at this time]

Year	Rocket launches	Missile launches
2014	6	6
2015	9	5
2016	9	6
2017	4	5
2018	9	6
2019	12	7

There are currently six active facilities at VAFB used to launch satellites into polar orbit. These facilities support launch programs for the Atlas V, Delta II, Delta IV, Falcon 9, Minotaur, and Taurus rockets. Various booster and fuel packages can be configured to accommodate payloads. Details on the vehicle types and the sound exposure levels (SELs) produced by each missile or rocket are described in the following sections.

(1) Atlas V

The Atlas V vehicle is launched from Space Launch Complex (SLC)-3E on south VAFB. This SLC is approximately 9.9 km (6.2 mi) from the main haul-out area on VAFB, known as North Rocky Point (see Figure 2 in the USAF application), which encompasses several smaller pinniped haul-out sites. SLC-3E is approximately 11.1 km (6.9 mi) from the closest north VAFB haul-out, known as the Spur Road haul-out site (Figure 3 in the application) and 13.5 km (8.4 mi) from the next closest haul-out, the nearby Purisima Point haul-out site (Figure 3 in the application).

The Atlas V is a medium lift vehicle that can be flown in two series of configurations—the Atlas V400 series

and the Atlas V500 series. Both series use the Standard Booster as the single body booster. The V400 series accommodates a 4.2 m (13.8 ft) payload fairing and as many as three solid rocket boosters. The V500 series accommodates a 5.4 m (17.7 ft) fairing and as many as five solid rocket boosters. The Atlas V400 series will lift as much as 7,800 kg (17,196 lbs) into geosynchronous transfer orbit or as much as 13,620 kg (30,027 lbs) into low earth orbit. The Atlas V500 series will lift as much as 8,700 kg (19,180 lbs) into geosynchronous transfer orbit or as much as 21,050 kg (46,407 lbs) into low earth orbit. The Atlas V consists of a common booster core (CBC) 3.8 m (12.5 ft) in diameter and 32.5 m (106.6 ft) high) powered by an RD180 engine that burns a liquid propellant fuel consisting of liquid oxygen and RP1 fuel (kerosene). The RD180 engine provides 840,000 lbs of thrust on liftoff. There is a Centaur upper stage (3.1 m (10.2 ft) in diameter and 12.7 m (41.7 ft) high) powered by a liquid oxygen and liquid hydrogen fuel.

The first Atlas V launch occurred on March 13, 2008. Acoustic monitoring was conducted for this launch at VAFB. However, an equipment malfunction during the launch prevented the proper functioning of the digital audio tape (DAT) recorder during the launch. Since acoustic data was only gathered with the sound level meter (SLM), not all metrics were obtained for that launch. The Atlas V launch had an A-weighted SEL (ASEL) of 96.5 dB (MSRS, 2008c). The Atlas V was predicted to create a sonic boom of as much as 7.2 pounds per square foot (psf), impacting the NCI including San Miguel Island (SMI). The size of the actual sonic boom depends on meteorological conditions, which can vary by day and season and with the trajectory of the vehicle. A sonic boom greater than 1 psf was predicted for the

initial Atlas V launch; thus, acoustic monitoring was performed on SMI. Measurements conducted at Cardwell Point indicated a sonic boom of 1.24 psf with a rise time of 2.4 milliseconds (ms).

Because of the equipment malfunction, VAFB conducted acoustic modeling of the second Atlas V launch, which occurred on October 18, 2009. Acoustic measurements at VAFB were made at Oil Well Canyon (see Figure 2 in USAF's application) approximately 9.8 km (6.1 mi) southwest of SLC-3E (MSRS, 2009). The DAT recorder provided detailed information on the launch noise. The A-weighted 1-hour average sound levels at VAFB in the Oil Well Canyon area typically range from 35 to 60 dB with an average of 52 dB (Thorson *et al.*, 2001). During the launch, the unweighted SEL was 125.2 db, while the C-weighted SEL was 119.0 db and the A-weighted SEL was 95.2 db. The unweighted peak level was 118.6 db and the A-weighted peak level was 116.2 db. The majority of the sound from the Atlas V DMSP-18 was produced within the first 120 seconds of the launch, but some low-frequency rumbling and crackling was audible for over 5 minutes after launch (MSRS, 2009).

VAFB conducted another Atlas V launch on April 14, 2011, with acoustic monitoring conducted at SMI. As described in VAFB (2011), testing indicated that the sonic boom consisted of two positive peaks separated by approximately 100 milliseconds (about one-tenth of a second), followed by a negative spike (underpressure) in which the two corresponding arrival times of the positive peaks nearly coincided. This represented the compression and release of air from a double shock wave from a sonic boom. The maximum overpressure at the recording site on SMI was 1.01398 psf, and the

unweighted peak was 109.4 dB re 20 μ Pa at 2.66 Hz. The frequency spectrum of the acoustic energy was predominantly low frequency, with unweighted peak levels exceeding 80 dB re 20 μ Pa below 500 Hz. The highest energy was below 100 Hz.

(2) Delta II

The Delta II is launched from SLC-2 on north VAFB (see Figure 3 in the USAF application) approximately 2 km (1.2 mi) from the Spur Road harbor seal haul-out site and 2.3 km (1.4 mi) from the Purisima Point haul-out site. The Delta II is a medium-sized launch vehicle approximately 38 m (124.7 ft) tall. The Delta II uses a Rocketdyne RS-27A main liquid propellant engine and additional solid rocket strap-on graphite epoxy motors (GEMs) during liftoff. A total of three, four, or nine GEMs can be attached for added boost during liftoff. When nine GEMs are used, six are ignited at liftoff, and three are lit once the rocket is airborne. When three or four GEMs are used they are all ignited at liftoff. The number of GEMs attached to each vehicle will determine the amount of sound power produced by the vehicle.

Eight Delta II launches have been acoustically quantified near the Spur Road harbor seal haul-out site. The Delta II is the second loudest of the space launch vehicles (SLVs) at the Spur Road haul-out site, the Taurus vehicle being the loudest. The Delta II has an unweighted SEL measurements (based on the six initial acoustically-measured launches) ranging from 126.5 to 128.8 dB and averaging 127.4 dB, as measured by the DAT recorder. The C-weighted SEL (CSEL) ranged from 124.3 to 126.7 dB with an average of 125.4 dB (DAT). The ASEL measurements from both a SLM and the DAT were similar, ranged from 111.8 to 118.2 dB, and had an average of 114.5 dB (DAT). The maximum fast A-weighted sound level (L_{max}) values ranged from 104.2 to 112.5 dB and averaged 109.5 dB.

Sonic booms have been measured on SMI from three Delta II launches: the EO-1, Iridium MS-12, and AURA (November 2000, February 2002, and July 2004, respectively). Both the Iridium MS-12 and AURA had two small sonic booms impact the Point Bennett area of SMI. Iridium MS-12 had peak overpressures of 0.47 and 0.64 psf and rise times of 18 and 91 ms, while AURA had peak overpressures of 0.79 and 1.34 psf and rise times of 9.5 and 10.5 ms. The Delta II EO 1 had a single sonic boom with a peak overpressure of 0.4 psf and rise time of .041 ms.

(3) Delta IV

The Delta IV is launched from SLC-6, which is 2.3 km (1.4 mi) north of the main harbor seal haul-out site at North Rocky Point (see Figure 2 in the USAF application). The Delta IV family of launch vehicles consists of five launch vehicle configurations utilizing a CBC first stage (liquid fueled) and zero, two, or four strap on solid rocket GEMs. The Delta IV comes in four medium lift configurations and one heavy lift configuration consisting of multiple CBCs. The Delta IV can carry payloads from 4,210 to 13,130 kg (9,281 to 28,947 lbs) into geosynchronous transfer orbit.

Because the Delta IV was predicted to be the loudest vehicle at the south VAFB harbor seal haul-out site, it was required that acoustic and biological monitoring be conducted for its first three launches. In addition, harbor seal hearing tests were required before and after each of the first three launches that were not scheduled during pupping season.

The first two Delta IV launches occurred in 2006. Although the Delta IV is larger than the Athena (the vehicle previously launched from this site), it was found after its initial launch (NROL-22, June 2006) that the Delta IV had similar noise levels to the Athena vehicle. As measured by the DAT, the unweighted SEL was 127.7 dB, while the CSEL was 122.9 dB, and the ASEL was 106.2 dB (Fillmore *et al.*, 2006). The L_{max} was found to be 103.1 dB (Fillmore *et al.*, 2006).

During the second Delta IV launch (DMSP-17, November 2006), the DAT recorder was located at the VAFB Boathouse (near where the harbor seal hearing tests were performed), rather than at the more usual sound monitoring location of Oil Well Canyon, where an SLM was placed. The DAT measured the unweighted SEL at 131.3 dB, the CSEL at 127.5 dB, and the ASEL at 111.3 dB. The L_{max} was measured at 102.6 dB (Thorson *et al.*, 2007).

During the third Delta IV launch (Heavy NROL-49, January 20, 2011), noise levels recorded were in a very similar frequency domain compared to noise levels from the two Delta II launches in 2006, although the Delta IV Heavy launch was somewhat louder. Most sound energy from the rocket launches was below 1 kHz (1000 Hz). With the Delta IV rocket, the highest levels were below 100 Hz. Unweighted peak levels were 131.8 dB re 20 μ Pa (MSRS, 2011a).

The Delta IV was predicted to create maximum sonic booms of as much as 7.2 psf for the largest of the medium configurations and 8 to 9 psf for the

heavy configuration. The size of the actual sonic boom depends on meteorological conditions, which can vary by day and season, and with the trajectory of the vehicle. A sonic boom greater than one psf was predicted for the initial Delta IV launch; thus, acoustic monitoring was performed on SMI. An equipment malfunction resulted in uncertainty regarding the amplitude of the sonic boom that was recorded for the launch, and the peak overpressure from the boom could have ranged from 0.77 psf to as much as 3.36 psf. The rise time was able to be determined and was measured at 8.7 ms. Because sonic booms were not predicted for the second or third Delta IV launches, monitoring was not performed on SMI for either launch.

Capture attempts of harbor seals for the initial Delta IV launch were unsuccessful; therefore, no hearing tests were performed on seals for that launch. Capture attempts for the second Delta IV launch were successful, and hearing tests were performed. There was no evidence that the launch noise from the Delta IV DMSP 17 caused a loss in harbor seal hearing acuity. However, given a 2-hour delay in starting the hearing test due to safety constraints, it is possible that a mild temporary threshold shift (TTS) could have been fully recovered by the time the testing was started. Even so, no long-term hearing loss from the Delta IV launch noise was found (Thorson *et al.*, 2007).

Capture attempts were also successful for the January 20, 2011 Delta IV Heavy launch. Three healthy juvenile harbor seals were captured near Pt. Conception 28 hrs before the launch, and hearing tests were performed (VAFB, 2011). Auditory Brainstem Response (ABR) testing was conducted the day before the launch and nearly 3 hours after the launch. (The delay in post-launch testing was because access to the site was limited after the launch because of personnel safety issues.) The animals showed no change in hearing sensitivity as a result of the tests, although it is possible that a mild TTS, from which the seals had already recovered, could have occurred (MSRS, 2011a). Capture attempts of harbor seals for the fourth Delta IV launch (August 2013) were unsuccessful; therefore, no hearing tests were performed on seals for that launch.

(4) Falcon

The Falcon is the launch vehicle for Space Exploration Technologies (Space X). Space X is a commercial program planning to launch small payloads into low earth orbit from VAFB. The Space X launch vehicle includes the Falcon I SLV, classified as a light-lift vehicle. It

is a two-stage liquid oxygen and rocket grade kerosene powered launch vehicle and is 21.3 m (69.9 ft) in length and 1.7 m (5.6 ft) in diameter (Space X, 2007). The Falcon 1e vehicle is also 1.7 m (5.6 ft) in diameter and has an extended first stage and is 26.8 m (87.9 ft) in length (Space X, 2007). The Falcon I has a thrust of 105,500 lbs (in vacuum), and the Falcon 1e has 115,000 lbs (in vacuum) and are capable of delivering approximately 554 kg (1,221 lbs) into sun synchronous low earth orbit (Space X, 2007). The first Falcon launch from VAFB occurred in September 2013 (VAFB, 2013).

(5) Minotaur

The Orbital Suborbital Program launch vehicle, known as Minotaur I, is launched from SLC-8 on south VAFB (see Figure 2 in the USAF application), approximately 1.6 km (1 mi) from the North Rocky Point haul-out site. The Minotaur I is a four stage, all solid propellant ground launch vehicle (Orbital Sciences Corporation, 2006a). The launch vehicle consists of modified Minuteman II Stage I and Stage II segments, mated with Pegasus upper stages (Orbital Sciences Corporation, 2006a). The Minotaur is a small vehicle, approximately 19.2 m (63 ft) tall (Orbital Sciences Corporation 2006b), with approximately 215,000 lbs of thrust.

Two Minotaur launches were acoustically monitored at VAFB (January 2000 and July 2000). The unweighted SEL measurements varied by 3.5 dB between the two launches and were measured to be 119.4 and 122.9 dB. The CSELs varied less and were measured at 116.6 and 117.9 dB. From the DAT and SLM measurements, the ASEL ranged from 104.9 to 107 dB. The launch noise reached an Lmax level of 101.7 and 103.4 dB. No sonic booms of greater than one psf were predicted to impact the NCI for these two launches nor for a third launch for which only biological monitoring was performed at VAFB given that acoustics had been previously quantified.

An additional test launch of a Minotaur IV is currently planned for late 2015 from north VAFB test-pad 01, which is currently being renovated. The Minotaur IV combines U.S. Government-furnished solid rocket motors from decommissioned Peacekeeper ICBMs with technologies from other Orbital-built launch vehicles, including the Minotaur I, Pegasus, and Taurus. The Minotaur IV launch vehicle

consists of an SR118 first stage, SR119 second stage, SR120 third stage, and Orion 38 fourth stage. The payload is 1,735 kg (3,825 lbs). The first Minotaur IV launched from VAFB occurred on April 22, 2010.

(6) Taurus

The Taurus SLV is launched from 576E on north VAFB, approximately 0.5 km (0.3 mi) from the Spur Road harbor seal haul-out site and 2.3 km (1.4 mi) from the Purisima Point haul-out site (see Figure 3 in the USAF application). The standard Taurus is a small launch vehicle, at approximately 24.7 m (81 ft) tall and is launched in two different configurations (Defense Advanced Research Projects Agency (DARPA) and standard) with different first stages providing 500,000 or 400,000 lbs of thrust, respectively. The different vehicle configurations have different thrust characteristics, with the standard configuration providing less thrust than DARPA.

The launch noise from five Taurus launches has been measured near the Spur Road haul-out site. The Taurus is the loudest of the launch vehicles at the Spur Road haul-out site, due to the close proximity of its launch pad to the haul-out site. The unweighted SEL measurements from the four initially measured Taurus vehicles ranged from 135.8 to 136.8 and averaged 136.4 dB. The CSEL measurements were slightly lower than expected, ranging from 133.8 to 134.8 dB and averaged 134.5 dB. The ASEL measurements ranged from 123.5 to 128.9 dB with an average of 126.6 dB (SLM). The Lmax values were measured to range from 118.3 to 122.9 dB and averaged 120.9 dB (SLM). No sonic booms greater than one psf were predicted to impact the NCI for any of the eight Taurus launches monitored since 1998. However, as of October 2013, the Taurus Program is suspended.

(7) ICBM and Missile Defense Agency Interceptor and Target Vehicles

There are a variety of small missiles launched from north VAFB, including the Minuteman III and several types of interceptor and target vehicles for the Missile Defense Agency (MDA) program. Active missile launch facilities (LFs) are spread throughout northern VAFB (see Figure 3 in the application), and are within approximately 0.5 to 2.7 km (0.3 to 1.7 mi) of the Little Sal and Lion's Head haul-out sites, respectively, and approximately 11 to 16.5 km (6.8 to 10.3 mi) north of the Spur Road and

Purisima Point haul-out sites. The trajectories of ICBM and MDA launches are generally westward and therefore do not cause sonic boom impacts on the NCI.

ICBM: The Minuteman III missile is an ICBM developed as part of the U.S. strategic deterrence force. The Minuteman III is launched from an underground silo. It is composed of three rocket motors and is 18 m (59 ft) in length by 1.7 m (5.6 ft) in diameter with a first stage thrust of 202,600 lbs.

The launch noise from the June 7, 2002, launch from LF-26 (see Figure 3 in the USAF application) was measured at the Lion's Head haul-out site. This LF is approximately 3 km (1.9 mi) away from the haul-out site. The ASEL measurement of the launch noise was 100.6 dB and the Lmax value of 98.2 dB.

The launch noise from the May 24, 2000, launch from LF-09 (Figure 3 in the application) was measured at the Spur Road haul-out site. At a distance of over 15 km from LF-09, the unweighted SEL measurement was 114.7 dB and the CSEL measurement was 111.6 dB. The ASEL measurement was 26 dB down from the unweighted value and was measured at 88.7 dB. The Lmax was measured to be 83.3 dB.

MDA Interceptor and Target Vehicles: The MDA continues development of various systems and elements, including the Ballistic Missile Defense System (BMDS), the Ground-based Midcourse Defense (GMD) element of BMDS and the Air-Borne Laser (ABL) element.

The BMDS' mission is to defend against threat missiles in each phase or segment of the missile's flight. MDA has been conducting and will continue to conduct BMDS testing at VAFB through 2019 and beyond.

All of the target and interceptor missiles are smaller than the Minuteman III or Peacekeeper missiles previously or currently launched from VAFB. The MDA notes that the actual heights of the missiles will vary depending on the payload and associated electronic packages (e.g., flight termination system) or special modifications. Many of the missile types have interchangeable first or second stage motors; therefore, most may have similar noise characteristics, depending on their configuration. Missiles for which acoustic measurements have previously been made, as well as vehicle size, are included in Table 3 of this document.

TABLE 3—COMPARISON OF SIZE AND SOUND PRODUCED BY ACOUSTICALLY MEASURED MDA MISSILES AND THE MINUTEMAN AND PEACEKEEPER VEHICLES

Missile	Program	Height (m)	Diameter (m)	A-weighted sound exposure level (dB)	Lmax (dB)
Orbital Boost Vehicle	GBI	11.3	0.9	114.5	113.8
Booster Verification Test	GBI	15.8	1.4	114.7	113.8
Minuteman III	USAF Strategic Deterrence Force ...	18.0	1.7	117.7	112.2
Peacekeeper	USAF Strategic Deterrence Force ...	21.8	2.3	122.5	117.0

Note: The Minuteman III and Peacekeeper missiles are provided as a comparison to the smaller MDA missiles. Sound levels are from actual launches and were extrapolated to the distance of 1 km to compare each missile.

The main missile programs and missile types are described herein, but others may be implemented before this permit expires. The USAF would notify NMFS of any new missile programs that would be implemented at VAFB. Completely new types of missiles would be monitored acoustically and biologically, during their first launch, even if the launch occurs outside of the pupping season, using the standard launch monitoring protocol for VAFB. However, configuration changes in existing missiles would only be monitored during the pupping season, as is done for all other missile launches.

The MDA's BMDS test plans, including those involving tests from VAFB, are subject to constant change as the BMDS is being developed. Therefore, it is difficult for the MDA to

predict with accuracy its future launch schedule or number of launches over the next five years. However, due to test resource limitations, the MDA does not envision conducting more than three missile tests per quarter (on average) over the next five years from VAFB, and none of the missiles would be larger than the Minuteman III. This limitation (i.e., three missiles per quarter and none being larger than the Minuteman III) can be used to establish the potential impacts posed by the MDA testing at VAFB over the next five years. Additionally, Table 2 in this document outlined no more than seven missile launches to be reasonably likely during the proposed period of these regulations and LOA.

In order to compare launch noise from past and current SLVs, as it was

received near the north and south VAFB marine mammal haul-out sites, Tables 4 through 6 in this document provide information on the SELs that were measured during previous launch events. Table 4 provides a comparison of SELs as measured at the sound monitoring site by the south VAFB marine mammal haul-out site. Table 5 provides the SELs as measured at the sound monitoring site by the north VAFB Spur Road marine mammal haul-out site. Finally, Table 6 provides the SELs as measured at the sound monitoring site by the north VAFB Lion's Head marine mammal haul-out site. Figures 2 and 3 in the USAF application depict the locations of the haul-out sites.

TABLE 4—SOUND LEVELS FROM LAUNCHES ON VAFB, AS MEASURED BY THE DIGITAL AUDIO TAPE RECORDER NEAR THE SOUTH VAFB MARINE MAMMAL HAUL-OUT SITE

Launch vehicle	Satellite	Launch complex	Launch date	Dist. to haul-out (km)	TSEL (dB)	CSEL (dB)	ASEL (dB)	TPeak (dB)	Lmax (dB)
Delta IV	DMSP-17	SLC-6	4-Nov-06	2.7	131.3	127.5	111.3	129.0	102.6
Titan IV	B-34	SLC-4E	5-Oct-01	8.5	130.2	124.2	104.5	125.0	100.6
Athena II	Ikonos-1	SLC-6	27-Apr-99	2.8	127.9	123.7	107.3	125.6	99.9
Delta IV	NROL-22	SLC-6	27-Jun-06	2.7	127.7	122.9	106.2	130.0	103.1
Titan IV	B-12	SLC-4E	22-May-99	8.5	127.6	121.9	103.6	123.7	97.0
Athena I	Lewis	SLC-6	22-Aug-97	2.8	127.0	121.3	107.3	126.8	101.0
Titan IV	B-28 NRO	SLC-4E	17-Aug-00	8.5	126.8	119.9	99.0	123.5	91.5
Athena II	Ikonos-2	SLC-6	24-Sep-99	2.8	125.9	123.4	107.8	124.6	102.2
Titan IV	A-18	SLC-4E	23-Oct-97	8.5	125.9	119.0	96.6	121.8	88.2
Atlas IIAS	AC-141 Terra	SLC-3E	18-Dec-99	9.9	124.2	113.6	87.3	120.3	76.4
Minotaur	MightySat	SLC-8	19-Jul-00	2.3	122.9	117.9	107.0	122.0	101.7
Titan II	G-7	SLC-4W	19-Jun-99	8.5	120.3	112.3	87.7	121.4	79.1
Minotaur	JAWSAT	SLC-8	26-Jan-00	2.3	119.4	116.6	105.4	125.0	103.4
Titan II	G-12	SLC-4W	13-May-98	8.5	119.3	115.0	95.4	113.0	85.9
Delta II	MS-9	SLC-2	17-May-98	22.0	118.1	103.1	72.4	113.9	61.8
Atlas IIAS	MLV-10	SLC-3E	8-Sep-01	9.9	118.0	112.1	88.5	112.6	80.8
Titan II	G-6	SLC-4W	4-Apr-97	8.5	116.5	112.4	88.5	111.3	76.1
Titan II	G-13	SLC-4W	21-Sep-00	8.5	116.3	109.6	83.5	109.5	74.9
Taurus	KOMPSAT	SLC-576	20-Dec-99	20.3	106.4	101.3	76.4	102.9	65.0

Notes: km = kilometers; TSEL = unweighted SEL; dB = decibels; CSEL = C-weighted SEL; ASEL = A-weighted SEL; Tpeak = unweighted peak sound level; Lmax = maximum fast A-weighted sound level.

TABLE 5—SOUND LEVELS FROM LAUNCHES ON VAFB, AS MEASURED BY THE DIGITAL AUDIO TAPE RECORDER NEAR THE NORTH VAFB SPUR ROAD MARINE MAMMAL HAUL-OUT SITE

Launch vehicle	Satellite	Launch complex	Launch date	Dist. to haul-out (km)	TSEL (dB)	CSEL (dB)	ASEL (dB)	TPeak (dB)	Lmax (dB)
Taurus	MTI	SLC-576	12-Mar-00	0.55	136.8	134.8	125.6	141.8	120.6
Taurus	STEX	SLC-576	3-Oct-98	0.55	136.7	134.7	124.8	142.1	121.4
Taurus	T6	SLC-576	21-Sep-01	0.50	135.8	133.8	123.8	141.5	119.8
Taurus	Lite	SLC-576	6-Feb-03	0.55	133.8	133.1	125.4	144.8
Delta II	MS-9	SLC-2	17-May-98	1.92	128.9	126.7	116.9	137.3	112.5
Delta II	JASON/TIMED	SLC-2	7-Dec-01	2.00	127.7	125.8	114.8	133.0	111.0
Delta II	IMAGE	SLC-2	25-Mar-00	2.06	126.9	125.1	113.9	129.4	109.2
Delta II	Quickbird2	SLC-2	18-Oct-01	2.06	126.9	124.2	111.8	128.7	104.2
Delta II	Landsat	SLC-2	15-Apr-99	2.02	126.5	124.3	114.1	133.3	108.8
Atlas IIAS	AC-141 Terra	SLC-3E	18-Dec-99	11.10	117.2	110.0	86.1	113.0	75.2

Notes: km = kilometers; TSEL = unweighted SEL; dB = decibels; CSEL = C-weighted SEL; ASEL = A-weighted SEL; Tpeak = unweighted peak sound level; Lmax = maximum fast A-weighted sound level.

TABLE 6—SOUND LEVELS FROM LAUNCHES ON VAFB, AS MEASURED BY THE SOUND LEVEL METER NEAR THE NORTH VAFB LION’S HEAD MARINE MAMMAL HAUL-OUT SITE

Launch vehicle	Launch complex	Launch date	Dist. to haul-out (km)	ASEL (dB)	Tpeak (dB)	Lmax (dB)
Minuteman III	LF-04	11-Jun-03	1.15	114.9	131.2	112.1
Peacekeeper	LF-02	12-Mar-03	3.70	106.1	128.8	100.9
BV	LF-23	16-Aug-03	105.5	125.9	102.5
Peacekeeper	LF-02	3-Jun-02	3.70	102.4	126.6	97.8
Minuteman III	LF-26	7-Jun-02	3.15	100.6	121.2	98.2

Notes: km = kilometers; dB = decibels; ASEL = A-weighted SEL; Tpeak = unweighted peak sound level; Lmax = maximum fast A-weighted sound level.

USAF Aircraft Operations

The VAFB airfield, located on north VAFB, supports various aircraft operations further described below. Aircraft operations include tower operations, such as take offs and landings (training operations), and range operations, such as overflights and flight tests. Over the past 4 years, an average of slightly more than 600 flights has occurred each year.

Fixed-wing Aircraft Operations: Various fixed-wing aircraft (jet and propeller aircraft) use VAFB for a variety of purposes, including delivery of space or missile components, launching of space vehicles at high altitude (e.g., the Pegasus), and emergency landings. VAFB is also used for flight testing, evaluation of fixed-wing aircraft, and training exercises, including touch and goes. Three approved routes are used that avoid the established pinniped haul-out sites. Aircraft flown through VAFB airspace and supported by 30th Space Wing include B-1 and B-2 bombers, F-15, F-16, and F-22 fighters, V/X-22, Unmanned Aerial Vehicles, and KC-135 tankers. All aircraft are required to remain outside of the 305-m (1,000-ft) bubble around pinniped rookeries or haul-out sites, except when performing a life-or-death rescue mission, when

responding to a security incident, or during an aircraft emergency. There have been no observed impacts to pinnipeds from fixed-wing aircraft operations during launch monitoring or pinniped surveys.

Helicopter Operations: The number of helicopter operations at VAFB has decreased considerably since 2008 with the deactivation of the VAFB helicopter squadron. Other squadrons and units sometimes use VAFB for such purposes as transiting through the area, exercises, and launch mission support. Emergency helicopter operations (e.g., marine search and rescue and wildfire containment actions) are somewhat common. All helicopters are required to remain outside of the 305-m (1,000-ft) bubble around pinniped rookeries or haul-out sites, except when performing a life-or-death rescue mission, when responding to a security incident, or during an aircraft emergency. There have been no observed impacts to pinnipeds from helicopter operations during launch monitoring or pinniped surveys.

Timeframe of USAF Launch and Aircraft Operations

Launch and aircraft operations could occur at any time of the day or night during the period to be covered under this proposed rule and subsequent LOA

(February 2014–February 2019). The USAF anticipates that no more than 15 missile and 35 rocket launches would occur in any year. This number is far higher than launch activity in previous years, but one new facility (SLC 4) is being reactivated with intent to increase “commercial launch” activity, and Test Pad-01 is being renovated. The USAF notes that activity levels over the 5-year period between February 2014 and February 2019 will not exceed 75 missile and 175 rocket launches without additional coordination with NMFS. All launch operations would occur at VAFB, potentially resulting in launch noise and visual impacts there. Potential sonic boom impacts from SLVs could occur over the NCI. Missiles are launched in a westerly trajectory and do not impact the NCI. Aircraft operations would occur only at VAFB and are anticipated to only impact hauled out pinnipeds when flying at low altitudes (i.e., typically below 305 m [1,000 ft]).

Harbor Activities Related to the Delta IV Evolved Expendable Launch Vehicle

The Delta IV/EELV is comprised of a common booster core, an upper stage, and a payload fairing. The size of the common booster core requires it to be transported to the Base’s launch site by a specially designed vessel, the *Delta*

Mariner. The *Delta Mariner* docks at the harbor on south VAFB. To allow safe operation of the *Delta Mariner*, United Launch Alliance requires that the harbor undergo maintenance on a periodic basis.

(1) Delta Mariner Operations

The *Delta Mariner* is a 95.1-m (312-ft long), 25.6-m (84-ft) wide, steel-hulled, ocean-going vessel capable of operating at a 2.4-m (8-ft) draft. It is a roll-on, roll-off, self-propelled ship with an enclosed watertight cargo area, a superstructure

forward, and a ramp at the vessel's stern.

The 8,000-horsepower vessel enters the harbor stern first at 1.5 to 2 knots (kts) (1.72 mi per hour (mph)) during daylight hours at high tide, approaching the wharf at less than 0.75 kts (0.86 mph). At least one tugboat will always accompany the *Delta Mariner* during visits to the VAFB harbor. The vessel's departure will occur during daylight hours at high tide approximately 10 hours after the vessel's arrival.

(2) Harbor Maintenance Dredging

United Launch Alliance must perform maintenance dredging up to four times per year, depending on the hardware delivery schedule, to accommodate the *Delta Mariner's* draft. Dredging involves the use of heavy equipment, including a clamshell dredge, dredging crane, a small tug, dredging barge, dump trucks, and a skip loader. Expected noise levels from the dredging and other construction equipment, as well as the background noise measured at the dock area, are presented in Table 7 of this document.

TABLE 7—NOISE LEVELS OF HEAVY EQUIPMENT

Type of equipment	Range of typical noise levels (dBA) at 50 feet	Range of max. noise level (dBA) at 250 ft.
Backhoe	84–93	70–79
Water Truck (3,000 gallons)	81–84	67–70
Clamshell Dredge	75–88	61–74
Roll-off truck transporter	82–95	68–81
EPT	* 56–82	43–68
Ambient background noise at harbor	** 35–48	

* Noise level measured within 20 feet from the engine exhaust (Acentech, Inc. [Acentech] 1998).
 ** Noise level measured at the dock by Acentech (1998) approximately 250 feet from the beach.
 Source of Noise Levels: Acentech 1998; Environmental Protection Agency (EPA) 1971.

(3) Cargo Movement Activities

Removal of the common booster core from the vessel requires the use of an elevating platform transporter (transporter). The transporter is powered by a diesel engine manufactured by Daimler-Chrysler AG (Mercedes), model OM442A, 340HP. United Launch Alliance would limit cargo unloading activities to periods of high tide. It takes approximately 2 hours to remove the first common booster core from the cargo bay and 6 hours to remove a complement of three common booster cores. It would take up to 2 additional hours to remove remaining cargo which may consist of two upper stages, one set of fairings, and one payload attach fitting (see Figure 1.3–1 in Appendix A of the application). The total of 10 hours includes time required to move the flight hardware to the staging area. United Launch Alliance packs flight hardware items, other than the common booster cores, in containers equipped with retractable casters and tow bars. United Launch Alliance would tow these containers off the vessel by a standard diesel truck tractor. Noise from the ground support equipment will be muted while inside the cargo bay and will be audible to marine mammals only during the time that the equipment is in the harbor area.

Timeframe of Delta Mariner Activities

Cargo movement operations would occur for approximately 43 days (concurrent with the harbor maintenance activities). A fully-loaded vessel can be offloaded in 10 hours; however, the *Delta Mariner* may need to leave the dock and return at another time due to tide and wind extremes that may halt the removal of cargo. Dredging-related activities normally last between 3 and 5 weeks, including set-up and tear-down activities in the water and on shore. Dredging may proceed 24 hours per day to complete the job as quickly as possible and minimize the disruptive effect on the local animals; however, dredging at VAFB has historically been conducted in the daylight. Sedimentation surveys completed since the initial dredging indicate that maintenance dredging could be required annually, or even twice per year, depending on the hardware delivery schedule. Up to 5,000 cubic yards of sediment are allowed to be removed from the harbor per year by the United States Army Corps of Engineers permit. A survey occurs several months prior to each *Delta Mariner* visit to assess whether the harbor can be safely navigated. The area to be dredged is shown in Figure 1.2–1 of Appendix A in the application.

We expect that acoustic stimuli, resulting from the proposed *Delta Mariner* activities, have the potential to incidentally harass marine mammals. We also expect these disturbances to be temporary and result in a temporary modification in behavior and/or low-level physiological effects (Level B harassment only) of certain species of marine mammals.

We do not expect that the movement of the *Delta Mariner* during the conduct of the proposed activities has the potential to harass marine mammals because of the relatively slow operation speed of the vessel (1.5 to 2 kts; 1.72 mph) during its approach to the area at high tide and the vessel's slow operational speed (0.75 kts; 0.86 mph) during its approach to the wharf.

Description of the Geographic Region of the Activities

VAFB

VAFB is composed of approximately 99,000 acres of land, and approximately 64.4 km (40 mi) of coastline on the coast of central California, within Santa Barbara County (see Figure 1 in the USAF application). Space vehicles are launched into polar orbits on azimuths from 147–201 degrees, with sub-orbital flights to 281 degrees. Missile launches are directed toward Kwajalein Atoll in

the Pacific. This over-water sector, from 147–281 degrees, comprises the Western Range. Part of the Western Range encompasses the NCI (see Figure 1 in the USAF application).

NCI

The Northern Channel Islands (NCI) are located approximately 50 km (31 mi) south of the southern point on VAFB. Three islands, San Miguel, Santa Cruz, and Santa Rosa, make up the main NCI, with San Miguel Island being the primary site for pinniped rookeries. The NCI are part of the Channel Islands National Park and the Channel Islands National Marine Sanctuary. The closest part of the NCI (Harris Point on San Miguel Island) is located more than 55 km (34 mi) south-southeast of the nearest launch facility.

VAFB Harbor

The proposed harbor maintenance and *Delta Mariner* activities will take place in or near the VAFB harbor located on the central coast of California at 34°33' N., 120°36' W. in the northeast Pacific Ocean. Activities related to these operations and described in Appendix A of the application will take place at VAFB harbor, located on South Base, approximately 2.3 km (1.4 mi) south of Point Arguello, CA, and approximately 1 mi (1.61 km) south of the nearest marine mammal rookery.

Description of Marine Mammals in the Area of the Specified Activity

Sections 3 and 4 of the USAF application and Sections 3 and 4 of Appendix A of the application contain detailed information on the abundance, status, and distribution of the species on VAFB and the NCI from surveys that they have conducted over the last decade and from NMFS Stock Assessment Reports (SARs). This information is summarized below and may be viewed in detail in the USAF's LOA application (see ADDRESSES). Additional information is available in the NMFS SARs, which are available at: <http://www.nmfs.noaa.gov/pr/sars/pdf/po2012.pdf>.

Pacific Harbor Seal

The most common marine mammal inhabiting the VAFB coastline is the Pacific harbor seal (*Phoca vitulina richardii*). Harbor seals are local to the area, rarely traveling more than 50 km (31 mi) from the haul-out site. They haul out on small offshore rocks or reefs and sandy or cobblestone cove beaches. There are 12 harbor seal haul-out sites on south VAFB. The position of these sites in relation to various SLCs is shown in Figure 2. Of these, 10 sites

represent an almost continuous haul-out area which is used by the same seals (see Figure 2, inset, in USAF's application). Four sites exist on north VAFB. The position of these in relation to various SLCs and Launch Facilities (LFs; used for missile launches) is shown in Figure 3 of the application. Virtually all of the haul-out sites, both north and south, are used during low tides and are wave-washed or submerged during high tides. Additionally, the Pacific harbor seal is the only species that regularly hauls out near the VAFB harbor.

The main harbor seal haul-outs on VAFB are near Purisima Point and at Lion's Head (approximately 0.6 km [0.4 mi] south of Point Sal) on north VAFB and between the VAFB harbor north to South Rocky Point Beach on south VAFB (MSRS, 2009b). This south VAFB haul-out area is composed of several sand and cobblestone coves, rocky ledges, and offshore rocks. The Rocky Point area is used as breeding habitat; it is approximately 1.6 km (1 mi) north of the VAFB harbor (MSRS, 2009b). Harbor seals have been reported to haul out on the coast at Sudden Ranch, approximately 0.8 km (0.5 mi) south of the harbor.

The harbor seal population at VAFB has undergone an apparent decline. The primary cause of this decline has been a series of natural landslides at south VAFB, resulting in the abandonment of many haul-out sites. These slides have also resulted in extensive down-current sediment deposition, making these sites accessible to coyotes, which are now regularly seen there. Some of the displaced seals have moved to other sites at south VAFB, while others likely have moved to Point Conception, about 6.5 km (4 mi) south of the southern boundary of VAFB. Unusually high numbers of harbor seals have been reported recently at Point Conception and in the kelp beds from south VAFB to east of Point Conception (Laroche, 2012). A new haul-out site on south VAFB was discovered at Point Arguello (see Figure 2 in USAF's application). This consists of a ledge in a deep, protected crack on the north side of the point. Though not a large area, it does offer suitable haul-out for a few seals and is used occasionally.

On north VAFB, coyotes have been regularly observed at two haul-out sites. There, only rocky ledges closest to the ocean and exposed during the lowest tides are utilized by the seals, whereas before the coyotes arrived, much more of the intertidal area was used. In 2012, a new haul-out site, informally dubbed Little Sal, was discovered on north

VAFB near LF-06 (see Figure 3 in USAF's application).

Pacific harbor seals frequently use haul-out sites on the following islands of the NCI: San Miguel; Santa Rosa; Santa Cruz; and Anacapa. On San Miguel Island, they occur along the north coast at Tyler Bight and from Crook Point to Cardwell Point. Additionally, they regularly breed on San Miguel Island. Harbor seals are scattered throughout Santa Rosa Island. On Santa Cruz Island, they inhabit small coves and rocky ledges along much of the coast. Harbor seals haul out on rocky ledges, caves, and cobble beaches in small numbers on Anacapa Island.

California Sea Lion

At south VAFB, California sea lions (*Zalophus californianus*) regularly haul out on north Rocky Point (Figure 2), with numbers often peaking in spring. California sea lions have been reported at Point Arguello and Point Pedernales (both on south VAFB) in the past, although none have been noted there over the past several years. In 2002, small numbers hauled out on the VAFB harbor jetty when large numbers of bait fish had moved close to shore there (MMCG and SAIC, 2012a). Individual sea lions have been noted hauled out throughout the VAFB coast; these were transient or stranded specimens. California sea lions occasionally haul out on Point Conception itself, south of VAFB. They regularly haul out on Lion Rock, north of VAFB and immediately south of Point Sal.

There are several sea lion rookeries on San Miguel Island. The primary rookeries can be found on Point Bennett; however, they also breed on Castle Rock and sometimes at Richardson Rock. Sea lions haul out at the west end of Santa Rosa Island at Ford Point and Carrington Point. A few California sea lions have been born on Santa Rosa Island, but no rookery has been established. On Santa Cruz Island, California sea lions haul out from Painted Cave almost to Fraser Point, on the west end. Fair numbers haul out at Gull Island, off the south shore near Punta Arena. Pupping appears to be increasing there. Sea lions also haul out near Potato Harbor, on the northeast end of Santa Cruz. California sea lions haul out by the hundreds on the south side of East Anacapa Island.

Northern Elephant Seal

Northern elephant seals (*Mirounga angustirostris*) sometimes haul out at VAFB. In 2004, a record count of 188 animals was made, mostly newly weaned seals (MMCG and SAIC, 2012a). Since that time, only a few elephant

seals have been reported yearly, mostly “weaners” and subadults, although adults have been noted occasionally. The nearest regularly used haul-out site on the mainland coast is at Point Conception. On December 14, 2012, an immature male elephant seal was observed hauled out on the sandy beach west of the breakwater at the VAFB harbor. The seal was again observed on December 15–18 and December 27. This is the first documented instance of an elephant seal hauled out at the VAFB harbor. There has been no verified breeding of northern elephant seals on VAFB.

Point Bennett on San Miguel Island is the primary northern elephant seal rookery. They also pup and breed on Santa Rosa Island, mostly on the west end. Northern elephant seals are rarely seen on Santa Cruz and Anacapa Islands.

Steller Sea Lion

In April and May of 2012, Steller sea lions (*Eumetopias jubatus*) were observed for the first time at VAFB. Up to 16 adults were noted among the California sea lions at north Rocky Point. Some individuals with distinctive scars were observed on several occasions over a several-week period, indicating that this site was being used over time rather than as a brief rest stop (MMCG and SAIC, 2012a, c). Several animals returned in February 2013 (USAF unpublished data). North Rocky Point is checked during USAF monthly marine mammal surveys, so if Steller sea lions return to this site, they will be reported. These individuals were from the eastern stock of Steller sea lions.

Steller sea lions once had two small rookeries on San Miguel Island, but these were abandoned after the 1982–1983 El Niño event. These rookeries once represented the southernmost colonies of the eastern stock of this

species. Steller sea lions are not observed on the other NCI.

Northern Fur Seal

No haul-out or rookery sites exist for fur seals on the mainland coast. The only specimens that do appear on mainland beaches are stranded animals. Only one fur seal stranding has been reported at VAFB. This involved a northern fur seal that came ashore at Surf Beach. (This beach is on VAFB property but is accessible to the public.) This seal, a nine-month old male, was rescued by the Santa Barbara Marine Mammal Center on March 11, 2012 (SBMMC, 2012).

Northern fur seals have small rookeries at Point Bennett and on Castle Rock on San Miguel Island. They are not observed on the other NCI. Table 8 in this document outlines current population estimates of the five pinniped species described here on the NCI.

TABLE 8—NCI PINNIPED POPULATION ESTIMATES

Species	San Miguel Island	Santa Rosa Island	Santa Cruz Island	Anacapa Island
Pacific harbor seal	900	1,000	1,000	100.
California sea lion	32,000 pups born in 2012 ¹ ..	500 ²	1,200 ²	1,000. ²
Northern elephant seal	±10,000 pups yearly	±2,000 pups yearly	Occasional transient	Rare transient.
Steller sea lion	Rare transient	None	None	None.
Northern fur seal	9,968	None	None	None.

Sources: Carretta *et al.* 2011 and 2012; Allen and Angliss 2011 and 2012.

¹ No estimate is available for the total sea lion population on each main rookery island. Instead, pup counts are made at various breeding areas, and from this count, as estimate is made of the stock size, which includes pups, subadults and adults.

² Regular surveys are not conducted of these islands, and pupping is very sporadic and minimal there. These are estimates of the total number of sea lions at these islands.

Other Marine Mammals in the Proposed Action Area

There are several cetaceans that have the potential to transit in the vicinity of VAFB, including the short-beaked common dolphin (*Delphinus delphis*), the Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the gray whale (*Eschrichtius robustus*). We will not consider these species further in this proposed rule because they are typically found farther offshore of VAFB and the VAFB harbor and are unlikely or rare in the proposed action area. Guadalupe fur seals (*Arctocephalus townsendi*) are reported occasionally at San Miguel Island; and, in 1998, a pup was successfully weaned there (Melin and DeLong, 1999). However, their occurrence is rare.

California (southern) sea otters (*Enhydra lutris nereis*) are listed as threatened under the Endangered Species Act and categorized as depleted under the MMPA. The U.S. Fish and Wildlife Service manages this species, and we will not consider this species in

greater detail within this proposed rule. The proposed rule will only address requested take authorizations for pinnipeds. The USAF launch, aircraft, and helicopter operations have the potential to take Pacific harbor seals, California sea lions, northern elephant seals, Steller sea lions, and northern fur seals by Level B harassment. The harbor activities related to the launch vehicles at VAFB have the potential to take four of the same species (all but northern fur seals, which are not found in the vicinity of the VAFB harbor) by Level B harassment.

Potential Effects of Specified Activities on Marine Mammals

The activities proposed for taking of marine mammals under these regulations have the potential to cause harassment through both acoustic and visual stimuli. The USAF launch and aircraft activities create two types of noise: continuous (but short-duration) noise, due mostly to combustion effects of aircraft and launch vehicles; and impulsive noise, due to sonic boom

effects. Launch operations are the major source of noise on the marine environment from VAFB. The operation of launch vehicle engines produces significant sound levels. Generally, noise is generated from four sources during launches: (1) Combustion noise from launch vehicle chambers; (2) jet noise generated by the interaction of the exhaust jet and the atmosphere; (3) combustion noise from the post-burning of combustion products; and (4) sonic booms. Launch noise levels are highly dependent on the type of first-stage booster and the fuel used to propel the vehicle. Therefore, there is a great similarity in launch noise production within each class size of launch vehicles. The noise generated by VAFB activities will result in the incidental harassment of pinnipeds, both behaviorally and in terms of physiological (auditory) impacts.

Acoustic and visual stimuli generated by the use of heavy equipment during the *Delta Mariner* off-loading operations and harbor dredging and the increased presence of personnel may have the

potential to cause Level B harassment of any pinnipeds hauled out in the VAFB harbor. This disturbance from acoustic and visual stimuli is the principal means of marine mammal taking associated with these activities.

The noise and visual disturbances from SLV and missile launches, aircraft and helicopter operations, and harbor maintenance activities may cause the animals to lift their heads, move towards the water, or enter the water. The following information provides background on marine mammal responses to launch noise and harbor maintenance activities that has been gathered under previous LOAs and Incidental Harassment Authorizations for these activities, as well as a scientific research permit issued to VAFB by NMFS for a research program (Permit No. 859-1680-01, expired January 1, 2009, and Permit No. 14197, expires June 30, 2014) to determine the short and long-term effects of SLV noise and sonic booms on affected marine mammals.

Marine Mammal Response to Launch Noise and Sonic Booms

Seals may leave the haul-out site and enter the water due to the noise created by launch vehicles during launch operations. The percentage of seals leaving the haul-out increases with noise level up to approximately 100 dB ASEL, after which almost all seals leave, although data have shown that some percentage of seals have remained on

shore during launches. Time-lapse video photography during four launch events revealed that the seals that reacted to the launch noise but did not leave the haul-out were all adults. Because adult seals reacted less strongly than other younger seals, this suggests that adults had possibly experienced other launch disturbances and had habituated to them. When launches occur during high tides at VAFB, impacts likely do not occur because the haul-out sites are submerged (i.e., pinnipeds are not hauled out; MMCG and SAIC, 2012a).

The louder the launch noise, the longer it took for seals to begin returning to the haul-out site and for the numbers to return to pre-launch levels. Seals may begin to return to the haul-out site within 2–55 min of the launch disturbance, and the haul-out site usually returned to pre-launch levels within 45–120 min. In two past Athena IKONOS launches with ASELs of 107.3 and 107.8 dB at the closest haul-out site, seals began to haul-out again approximately 16–55 min post-launch (Thorson *et al.*, 1999a; 1999b). In contrast, noise levels from an Atlas launch and several Titan II launches had ASELs ranging from 86.7 to 95.7 dB at the closest haul-out, and seals began to return to the haul-out site within 2–8 min post-launch (Thorson and Francine, 1997; Thorson *et al.*, 2000).

The main concern on the NCI from VAFB launch activities is potential

impacts from sonic booms created during launches of SLVs from VAFB. During the period of 1997 through 2005, and in 2007, there were no sonic booms above 2 psf recorded on the NCI. Small sonic booms between 1 and 2 psf usually elicit a heads up response or slow movement toward and entering the water, particularly for pups. In 2006, due to an equipment malfunction, there was uncertainty about the peak overpressure from the Delta IV NROL-22 launch, which could have ranged between 0.77 and 3.36 psf. During the 1996 Titan IV K-22 launch, sonic booms of 1 to 9.2 psf reached San Miguel Island and caused many sea lions and some elephant seals to enter the water near the loudest sonic boom (Stewart *et al.*, 1996). There were no injuries or mortalities as a result of that sonic boom or the reactions by pinnipeds on San Miguel Island. The most recent launch to produce a sonic boom of greater than 2 psf at San Miguel Island with simultaneous pinniped observations occurred on September 13, 2012 (sonic boom of 2.1 psf). No reactions were noted in the California sea lions and northern elephant seals present, and 20 of 36 harbor seals present entered the water (MMCG and SAIC, 2013). Table 9 summarizes monitoring efforts at San Miguel Island during which acoustic measurements were successfully recorded simultaneously with observations of the animals' reactions to the booms.

TABLE 9—SONIC BOOMS AND PINNIPED REACTIONS AT SAN MIGUEL ISLAND

Launch date	Vehicle	psf	(dB re 20 µPa)	Reaction	Location
7 Nov 91	Titan IV	¹ 1.2 & 1.8	¹ 129.5–133.0	Z.c. Heads-up M.a. None	Pt. Bennett.
12 May 96	Titan IV	² 8.92	² 146.6	P.v. All 5 into water M.a. 60 of 67 heads-up	Crook Pt.
27 Apr 99	Athena II	1.0	127.2	Z.c. 866 alerted; 232 into water M.a. & C.u. Alerted but no other response	Adam's Cove.
24 Sep 99	Athena II	0.95	127.2	Z.c. 12 of 600 into water M.a. & C.u. Alerted; otherwise no response	Pt. Bennett.
20 Nov 00	Delta II	0.4	119.6	Z.c. 60 pups into water; no reaction from focal group. M.a. No reaction	Pt. Bennett.
8 Sep 01	Atlas II	¹ 0.75 & 0.35	¹ 125.1 & 118.6	Z.c. Group 1: 1200-no reaction Z.c. Group 2: 247-no reaction M.a. 25–37-no reaction P.v. 2 of 4 into water	Cardwell Pt.
11 Feb 02	Delta II	¹ 0.47 & 0.64	¹ 121.08 & 123.08	Z.c. & C.u. 485 in 3 groups-no reaction M.a. 424 in 2 groups-no reaction	Pt. Bennett.
2 Dec 03	Atlas II	0.88	126.4	Z.c. Number unknown (night launch); 4 moved toward water, 40% heads-up. M.a. No reaction	Pt. Bennett.
15 Jul 04	Delta II	¹ 0.79 & 1.34	¹ 125.5 & 130.12	Z.c. Number unknown (night launch); 10% heads-up.	Adam's Cove.
13 Mar 08	Atlas V	1.24	129.4	M.a. No reaction from 109 pups	Cardwell Pt.
5 May 09	Delta II	0.76	125.2	Z.c. 784 animals-no reaction	West of Judith Rock.
14 Apr 11	Atlas V	1.01	110.0	M.a. 445-no reaction (night launch)	Cuyler Harbor.

TABLE 9—SONIC BOOMS AND PINNIPED REACTIONS AT SAN MIGUEL ISLAND—Continued

Launch date	Vehicle	psf	(dB re 20 μ Pa)	Reaction	Location
13 Sep 12	Atlas V	2.10	122.8	Z.c. 460-no reaction M.a. 68-no reaction P.v. 20 of 36 into water	Cardwell Pt.

Sources: MMCG and SAIC 2012a and 2012c.

Abbreviations:

Psf = Pounds per square foot (maximum overpressures of sonic booms); dB re 20 μ Pa = Decibels referenced to 20 micropascals (peak airborne intensities of sonic booms); Z.c. = *Zalophus californianus*, the California sea lion; M.a. = *Mirounga angustirostris*, the northern elephant seal; C.u. = *Callorhinus ursinus*, the northern fur seal; P.v. = *Phoca vitulina richardsi*, the Pacific harbor seal.

1. When two acoustic measurements are presented, they represent a double sonic boom.
2. This was a rare, focused sonic boom.

At the Channel Islands, California sea lions react more strongly to sonic booms than most other species. Pups sometimes react more than adults, either because they are more easily frightened or because their hearing is more acute. Harbor seals also appear to be more sensitive to sonic booms than most other pinnipeds, often resulting in startling and fleeing into the water. Northern fur seals generally show little or no reaction. Northern elephant seals generally exhibit no reaction at all, except perhaps a heads-up response or some stirring, especially if sea lions in the same area mingled with the elephant seals react strongly to the boom. Post-launch monitoring generally reveals a return to normal patterns within minutes up to an hour or two of each launch, regardless of species.

Table 9 in this document shows that little or no reaction from the four species usually occurred when overpressures were below 1 psf. In general, elephant seals did not react unless other animals around them reacted strongly or if the sonic boom was extremely loud. Northern fur seals seemed to react similarly. From limited data about the reactions of harbor seals, it appears likely that they were quite sensitive to sonic booms (MMCG and SAIC, 2012a, c). Their reactions to launch noise at VAFB seem to suggest a sensitivity to low frequency sounds as well. No evidence has been presented of abnormal behavior as a result of the launches, nor were any injuries or mortalities attributed to any launches. No pups were abandoned as a result of sonic booms. These findings came as a result of more than two decades of research by numerous qualified, independent researchers, from March 1991 through September 2012 (MMCG and SAIC, 2012a, c). These patterns are anticipated to continue. Based on the information presented here and in the USAF application, the USAF is proposing to alter the requirements for monitoring when a sonic boom is predicted over the NCI. As noted in the

“Proposed Monitoring and Reporting” section found later in this document, the USAF proposes a decrease (perhaps with seasonal variables) in the monitoring requirement to only monitor sonic booms predicted to be greater than 1.5 psf between March and September or above 2 psf at other times of the year. NMFS concurs that such a change to past monitoring protocols is warranted based on data presented here and in past monitoring reports, and this change is presented in the proposed monitoring section later in this document.

Auditory Brainstem Response (ABR) Tests

To determine if harbor seals experience changes in their hearing sensitivity as a result of launch noise, ABR testing was conducted on 21 harbor seals for four Titan IV launches, one Taurus launch, and two Delta IV launches by the USAF in accordance with issued Scientific Research permits.

Following standard ABR testing protocol, the ABR was measured from one ear of each seal using sterile, subdermal, stainless steel electrodes. A conventional electrode array was used, and low-level white noise was presented to the non-tested ear to reduce any electrical potentials generated by the non-tested ear. A computer was used to produce the click and an 8 kilohertz (kHz) tone burst stimuli, through standard audiometric headphones. Over 1,000 ABR waveforms were collected and averaged per trial. Initially the stimuli were presented at sound pressure levels (SPL) loud enough to obtain a clean reliable waveform, and then decreased in 10 dB steps until the response was no longer reliably observed. Once response was no longer reliably observed, the stimuli were then increased in 10 dB steps to the original SPL. By obtaining two ABR waveforms at each SPL, it was possible to quantify the variability in the measurements.

Good replicable responses were measured from most of the seals, with

waveforms following the expected pattern of an increase in latency and decrease in amplitude of the peaks, as the stimulus level was lowered. One seal had substantial decreased acuity to the 8 kHz tone-burst stimuli prior to the launch. The cause of this hearing loss was unknown but was most likely congenital or from infection. Another seal had a great deal of variability in waveform latencies in response to identical stimuli. This animal moved repeatedly during testing, which may have reduced the sensitivity of the ABR testing on this animal for both the click and 8 kHz tone burst stimuli. Two of the seals were released after pre-launch testing but prior to the launch of the Titan IV B-34, as the launch was delayed for many days, and five days is the maximum duration permitted to hold the seals for testing.

Detailed analysis of the changes in waveform latency and waveform replication of the ABR measurements for the 14 seals showed no detectable changes in the seals' hearing sensitivity as a result of exposure to the launch noise. The delayed start (1.75 to 3.5 hr after the launches) for ABR testing allows for the possibility that the seals may have recovered from a temporary threshold shift (TTS) before testing began. However, it can be said with confidence that the post-launch tested animals did not have permanent hearing changes due to exposure to the launch noise from the Titan IV, Taurus, or Delta IV SLVs. These results are consistent with previous NMFS conclusions for such activities in its prior rulemakings (63 FR 39055, July 21, 1998; 69 FR 5720, February 6, 2004; 74 FR 6236, February 6, 2009).

NMFS also notes that stress from long-term cumulative sound exposures can result in physiological effects on reproduction, metabolism, and general health, or on the animals' resistance to disease. However, this is not likely to occur as a result of the activities from VAFB because of the infrequent nature and short duration of the noise,

including the occasional sonic boom. Research indicates that population levels at these haul-out sites have remained constant in recent years, with decreases only noted in some areas because of the increased presence of coyotes (a known predator), giving support to this conclusion.

Marine Mammal Responses to Harbor Activities

As noted in the analysis of potential responses to launch noise and sonic booms, pinnipeds sometimes show startle reactions when exposed to sudden brief sounds. An acoustic stimulus with sudden onset (such as a sonic boom) may be analogous to a “looming” visual stimulus (Hayes and Saif, 1967), which may elicit flight away from the source (Berrens *et al.*, 1988). The onset of operations by a loud sound source, such as the transporter during common booster core off-loading procedures, may elicit such a reaction. In addition, the movements of cranes and dredges may represent a “looming” visual stimulus to seals hauled out in close proximity. Seals and sea lions exposed to such acoustic and visual stimuli may either exhibit a startle response and/or leave the haul-out site or may exhibit no reaction at all.

Summary of Marine Mammal Impacts From Launches

In general, if the received level of the noise stimulus exceeds both the background (ambient) noise level and the auditory threshold of the animals, and especially if the stimulus is novel to them, there may be a behavioral response. The probability and degree of response will also depend on the season, the group composition of the pinnipeds, and the type of activity in which they are engaged. Minor and brief responses, such as short-duration startle or alert reactions, are not likely to constitute disruption of behavioral patterns, such as migration, nursing, breeding, feeding, or sheltering (i.e., Level B harassment) and would not cause injury or mortality to marine mammals. On the other hand, startle and alert reactions accompanied by large-scale movements, such as stampedes into the water of hundreds of animals, may rise to the degree of Level A harassment because they could result in injury of individuals. In addition, such large-scale movements by dense aggregations of marine mammals or at pupping sites could potentially lead to takes by injury or death. However, there is no potential for large-scale movements leading to serious injury or mortality near the south VAFB harbor because, historically, the number of

harbor seals hauled out near the site is less than 30 individuals, and there is no pupping at nearby sites. The effects of the harbor activities are expected to be limited to short-term startle responses and localized behavioral changes. Additionally, the USAF does not anticipate a significant impact on any of the species or stocks of marine mammals from launches from VAFB. For even the largest launch vehicles, such as Delta IV, the launch noises and sonic booms can be expected to cause a startle response and flight to water for those harbor seals, California sea lions and other pinnipeds that are hauled out on the coastline of VAFB and on the NCI. The noise may cause TTS in hearing depending on exposure levels, but no PTS is anticipated. Because aircraft will fly at altitudes greater than 305 m (1,000 ft) around pinniped haul-outs and rookeries, animals are not anticipated to react to aircraft and helicopter overflights.

The potential effects to marine mammals described in this section of the document do not take into consideration the proposed monitoring and mitigation measures described later in this document (see the “Proposed Mitigation” and “Proposed Monitoring and Reporting” sections) which, as noted, should effect the least practicable adverse impact on affected marine mammal species and stocks.

Previous Activities and Monitoring

USAF Launches and Aircraft and Helicopter Operations

As noted in Table 1 earlier in this document, the USAF did not exceed its authorized 50 launches per year in any given year. The USAF has complied with the mitigation and monitoring that we required under the previous annual LOAs for the February 2009 through February 2014 period. In compliance with each LOA, they have submitted a final report on the launches and aircraft and helicopter activities covering each annual period. Each LOA required them to conduct: (1) Visual monitoring of pinniped haul-out sites at least 72 hours prior to any launch scheduled during the harbor seal pupping season and continue for at least 48 hours after the launch with follow-up visual surveys conducted 2 weeks after the launch; (2) visual monitoring on the NCI if a sonic boom of greater than 1 psf is predicted; (3) acoustic measurements of launch vehicles for which acoustic measurements have not been previously made; and (4) supplement daytime visual monitoring with time-lapse video recordings. These surveys were conducted to note the number of

animals present prior to, during, and after launches.

Results of the monitoring efforts have been summarized in all of the previous annual LOA renewal notices (75 FR 5056, February 1, 2010; 76 FR 6448, February 4, 2011; 77 FR 6086, February 7, 2012; 78 FR 8111, February 5, 2013). Observed responses were similar to those described earlier in this document. Harbor seals appeared to be the most responsive pinniped species observed during monitoring surveys. Most common reactions were head lifts and minor movements on the beach, with some flushing into the water (mostly by harbor seals). For a complete record of all observations, we refer the reader to the USAF’s monitoring reports at: <http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>.

None of the monitoring revealed injuries, mortalities, or abnormal behaviors by pinnipeds at any of the monitored haul-out sites as a result of the authorized activities. The USAF complied with the requirements of the annual LOAs, and NMFS has determined that the marine mammal take resulting from the February 2009–October 2013 launches is within that analyzed in and anticipated by the associated regulations.

Harbor Activities Related to Launch Vehicles

United Launch Alliance, the USAF contractor responsible for conducting the harbor activities related to the Delta IV/EELV, has complied with the mitigation and monitoring that we required under the previous Authorizations for the 2009, 2010, 2011, and 2012 seasons. In compliance with each Authorization, they have submitted a final report on the activities at the VAFB harbor covering each annual period. Each Incidental Harassment Authorization required them to conduct baseline observations of pinnipeds in the project area prior to initiating project activities; conduct and record observations on pinnipeds in the vicinity of the harbor for the duration of the activity occurring when tides are 0.6 m (2 ft) or less (i.e., low enough for pinnipeds to haul-out); and conduct post-construction observations of pinniped haul-outs in the project area to determine whether animals possibly disturbed by the project’s activities would return to the haul-out area.

During the 2009 season (July 8–September 21), United Launch Alliance conducted 21 days of operations, which did not exceed the activity levels analyzed under the 2009 Authorization. The observers noted that Pacific harbor seals hauled out in the vicinity were

more responsive to visual disturbances than to auditory disturbances. They reported that the maximum number of harbor seals hauled out ranged from zero to 28 animals with most using the rocks approximately 164.9 to 173.7 m (540 to 570 ft) south of the harbor area. The maximum number of sea lions present ranged from zero to two animals with both hauled out at either the breakwater and or on a beach southwest of the dock area. United Launch Alliance did not observe any reactions of the harbor seals during equipment start-up. However, the observers noted that in some instances, the harbor seals slowly flushed when they could see equipment moving from their vantage point in the haul-out area. During the course of the 2009 season, harbor seals showed head alerts on 15 occasions and slowly entered the water on 24 occasions. Only one California sea lion showed a head alert during the entire operational season.

For the 2010 season (June 2–18), United Launch Alliance conducted 7 days of operations, which did not exceed the activity levels that we analyzed under the 2010 Authorization. They reported that the maximum number of harbor seals hauled out ranged from zero to 14 animals. Similar to the previous year, the harbor seals hauled out on the rocks south of the harbor area. The maximum number of sea lions present ranged from zero to two animals.

During the course of the 2010 season, harbor seals showed a head alert on only one occasion and entered the water on two occasions. In the first instance, the harbor seal resettled within 1 minute after the head alert. In the second instance, both harbor seals returned to the haul-out within 3 minutes. The observers routinely observed pinnipeds in the water within and around the harbor for the duration of project activities. They report that they did not observe any altered behavior while the animals were in the water due to activities occurring on the dock or in the harbor.

During the 2011 season (July 22–August 18; October 24–November 7), they conducted a total of 19 days of operations which did not exceed the activity levels analyzed under the 2011 Authorization. They reported that the maximum number of harbor seals hauled out ranged from zero to 38 animals and the maximum number of sea lions present ranged from zero to one animal.

During the course of the 2011 season, harbor seals showed a head alert on 23 occasions and slowly entered the water on 19 occasions. Again, the observers

routinely observed pinnipeds rafting in the water within and around the harbor for the duration of project activities.

During the 2012 season (December 15–16), they conducted a total of 2 days of operations, which did not exceed the activity levels analyzed under the 2012 Authorization. They reported that the maximum number of harbor seals hauled out ranged from zero to 54 animals and the maximum number of sea lions present ranged from zero to one animal.

During the course of the 2012 season, no reactions to disturbances associated with *Delta Mariner* operations were observed in any of the animals during any of the monitoring periods. On December 14, 2012, an immature male elephant seal was observed hauled out on the sandy beach west of the breakwater at the VAFB Harbor. The seal was again observed on December 15, December 16, December 17, December 18, and December 27. This is the first documented instance of an elephant seal hauled out at this location. For a complete record of all observations, we refer the reader to United Launch Alliance's monitoring reports at: <http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>.

Based on the results from the previous monitoring reports, we conclude that these results support our original findings that the mitigation measures set forth in the 2009, 2010, 2011, and 2012. Authorizations effected the least practicable adverse impact on the species or stocks.

During periods of low tide (e.g., when tides are 2 ft (0.61 m) or less and low enough for pinnipeds to haul-out), we would expect the pinnipeds to return to the haulout site within 60 minutes of a disturbance (Allen *et al.*, 1985). The effects to pinnipeds appear at the most to displace the animals temporarily from their haul out sites and we do not expect that the pinnipeds would permanently abandon a haul-out site during the conduct of harbor maintenance and *Delta Mariner* operations. Finally, no operations would occur near pinniped rookeries; therefore, we do not expect mother and pup separation or crushing of pups to occur.

Anticipated Effects on Marine Mammal Habitat

Impacts on marine mammal habitat are part of the consideration in making a finding of negligible impact on the species and stocks of marine mammals. Habitat includes rookeries, mating grounds, feeding areas, and areas of similar significance. We do not anticipate that the proposed operations

would result in any temporary or permanent effects on the habitats used by the marine mammals in the proposed area, including the food sources they use (i.e. fish and invertebrates). While it is anticipated that the specified activity may result in marine mammals avoiding certain areas due to temporary ensonification, this impact to habitat is temporary and reversible and was considered in further detail earlier in this document, as behavioral modification. The main impact associated with the proposed activity will be temporarily elevated noise levels and the associated direct effects on marine mammals, previously discussed in this notice.

Proposed Mitigation

In order to issue an incidental take authorization (ITA) under section 101(a)(5)(A) of the MMPA, NMFS must, where applicable, set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for subsistence uses (where relevant). The NDAA of 2004 amended the MMPA as it relates to military-readiness activities and the ITA process such that "least practicable adverse impact" shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the "military readiness activity." The training activities described in the USAF application are considered military readiness activities.

Section 11 of the USAF application and Section 11 of Appendix A in the application contain descriptions of the mitigation measures proposed to be implemented during the specified activities in order to effect the least practicable adverse impact on the affected marine mammal species and stocks and their habitats. Please refer to the application (see **ADDRESSES**) for the full description.

Proposed Measures During Launches and Aircraft and Helicopter Operations

All aircraft and helicopter flight paths must maintain a minimum distance of 1,000 ft (305 m) from recognized seal haul-outs and rookeries (e.g., Point Sal, Purisima Point, Rocky Point), except in emergencies or for real-time security incidents (e.g., search-and-rescue, fire-fighting) which may require approaching pinniped haul-outs and rookeries closer than 1,000 ft (305 m). For missile and rocket launches, unless

constrained by other factors including human safety, national security concerns or launch trajectories, holders of LOAs must schedule launches to avoid, whenever possible, launches during the harbor seal pupping season of March through June. The USAF must avoid, whenever possible, launches which are predicted to produce a sonic boom on the NCI during harbor seal, elephant seal, California sea lion, and northern fur seal pupping seasons.

If post-launch surveys determine that an injurious or lethal take of a marine mammal has occurred, the launch procedure and the monitoring methods must be reviewed, in cooperation with NMFS, and appropriate changes must be made through modification to an LOA, prior to conducting the next launch of the same vehicle under that LOA.

Proposed Measures During Harbor Activities

To reduce the potential for disturbance from visual and acoustic stimuli associated with the activities, United Launch Alliance/and or its designees propose to implement the following mitigating measures for marine mammals:

(1) If activities occur during nighttime hours, United Launch Alliance will turn on lighting equipment before dusk. The lights would remain on for the entire night to avoid startling pinnipeds.

(2) Initiate operations before dusk.

(3) Keep construction noises at a constant level (i.e., not interrupted by periods of quiet in excess of 30 minutes) while pinnipeds are present.

(4) If activities cease for longer than 30 minutes and pinnipeds are in the area, United Launch Alliance would initiate a gradual start-up of activities to ensure a gradual increase in noise levels.

(5) A qualified observer would visually monitor the harbor seals on the beach adjacent to the harbor and on rocks for any flushing or other behaviors as a result of United Launch Alliance's activities (see Proposed Monitoring).

(6) The *Delta Mariner* and accompanying vessels would enter the harbor only when the tide is too high for harbor seals to haul-out on the rocks; reducing speed to 1.5 to 2 knots (1.5–2 nm/hr; 2.8–3.7 km/hr) once the vessel is within 3 mi (4.83 km) of the harbor. The vessel would enter the harbor stern first, approaching the wharf and moorings at less than 0.75 knot (1.4 km/hr).

(7) As United Launch Alliance explores alternate dredge methods, the dredge contractor may introduce quieter techniques and equipment.

Mitigation Conclusions

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation, including consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

Based on our evaluation of the applicant's proposed measures, as well as other measures considered by NMFS, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable adverse impact on marine mammals species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance while also considering personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The proposed rule comment period will afford the public an opportunity to submit recommendations, views, and/or concerns regarding this action and the proposed mitigation measures. While NMFS has determined preliminarily that the proposed mitigation measures presented in this document will effect the least practicable adverse impact on the affected species or stocks and their habitat, NMFS will consider all public comments to help inform our final decision. Consequently, the proposed mitigation measures may be refined, modified, removed, or added to prior to the issuance of the final rule based on public comments received, and where appropriate, further analysis of any additional mitigation measures.

Proposed Monitoring and Reporting

In order to issue an ITA for an activity, section 101(a)(5)(A) of the MMPA states that we must set forth "requirements pertaining to the monitoring and reporting of such

taking." The Act's implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for an authorization must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and our expectations of the level of taking or impacts on populations of marine mammals present in the action area.

As part of its application, the USAF provided a monitoring plan, similar to that in the current regulations (50 CFR 216.125) and previous Incidental Harassment Authorizations issued to United Launch Alliance, for assessing impacts to marine mammals from rocket and missile launches at VAFB and *Delta Mariner* operations. This monitoring plan is described, in detail, in Section 8 of the main portion of the application for launch monitoring activities and Section 13 of Appendix A of the application for *Delta Mariner* operations monitoring activities. The following monitoring is proposed to be conducted under these regulations. The proposed monitoring program may be modified or supplemented based on comments or new information received from the public during the public comment period.

The monitoring will be conducted by a NMFS-approved marine mammal biologist experienced in surveying large numbers of marine mammals.

Monitoring for Launches on VAFB

Monitoring at the haul-out site closest to the launch facility will commence at least 72 hours prior to the launch and continue until at least 48 hours after the launch. Biological monitoring at VAFB will be conducted for all launches during the harbor seal pupping season, 1 March to 30 June. Acoustic and biological monitoring will be conducted on new space and missile launch vehicles during at least the first launch, whether it occurs within the pupping season or not.

Monitoring will include multiple surveys each day that record, when possible, the species, number of animals, general behavior, presence of pups, age class, gender, and reaction to launch noise, sonic booms, or other natural or human-caused disturbances. Environmental conditions such as tide, wind speed, air temperature, and swell will also be recorded. Time-lapse photography or video will be used during daylight launches to document the behavior of mother-pup pairs during launch activities. For launches during the harbor seal pupping season (March through June), follow-up surveys will be made within 2 weeks of the launch to

ensure that there were no adverse effects on any marine mammals. A report detailing the species, number of animals observed, behavior, reaction to the launch noise, time to return to the haul-out site, any adverse behavior and environmental conditions will be submitted to NMFS within 90 days of the launch.

Monitoring for the NCI

Monitoring will be conducted on the NCI (San Miguel, Santa Cruz, and Santa Rosa Islands) whenever a sonic boom over 1 psf is predicted (using the most current sonic boom modeling programs) to impact one of the islands between March 1 and June 30, over 1.5 psf between July 1 and September 30, and over 2 psf between October 1 and February 28. Monitoring will be conducted at the haul-out site closest to the predicted sonic boom impact area. Monitoring will be conducted by a NMFS-approved marine mammal biologist experienced in surveying large numbers of marine mammals. Monitoring will commence at least 72 hours prior to the launch and continue until at least 48 hours after the launch (if a sonic boom was detected during the actual launch).

Sonic boom prediction modeling is not conducted prior to missile launches because of their trajectories, which do not have the potential to overfly and/or impact with sonic booms the NCI. Launches from the following sites would not overfly the NCI: Space Launch Complexes 2, 3, 6, and 8; Launch Facility 576-E, Test pad 01; and missile launch facilities 4, 9, 10, 23, and 24.

Monitoring will include multiple surveys each day that record the species, number of animals, general behavior, presence of pups, age class, gender, and reaction to launch noise, sonic booms, or other natural or human-caused disturbances. Environmental conditions such as tide, wind speed, air temperature, and swell will also be recorded. Due to the large numbers of pinnipeds found on some beaches of San Miguel Island, smaller focal groups should be monitored in detail rather than the entire beach population. A general estimate of the entire beach population should be made once a day and their reaction to the launch noise noted. Photography or video will be used during daylight launches to document the behavior of mother-pup pairs or dependent pups during launch activities. During the pupping season of any species affected by a launch, follow-up surveys will be made within 2 weeks of the launch to ensure that there were no adverse effects on any marine

mammals. A report detailing the species, number of animals observed, behavior, reaction to the launch noise, time to return to the haul-out site, any adverse behavior and environmental conditions will be submitted to NMFS within 90 days of the launch.

Harbor Activities

United Launch Alliance will designate a qualified, and biologically trained observer to monitor the area for pinnipeds during all harbor activities. During nighttime activities, United Launch Alliance will illuminate the harbor area and the observer will use a night vision scope. Monitoring activities will consist of the following:

- (1) Conducting baseline observation of pinnipeds in the project area prior to initiating project activities.
- (2) Conducting and recording observations on pinnipeds in the vicinity of the harbor for the duration of the activity occurring when tides are low enough (less than or equal to 2 ft (0.61 m) for pinnipeds to haul out.
- (3) Conducting post-construction observations of pinniped haul-outs in the project area to determine whether animals disturbed by the project activities return to the haul-out.

Proposed Reporting Measures

A report containing the following information must be submitted to NMFS within 90 days after each launch: (1) Date(s) and time(s) of each launch; (2) date(s), location(s), and preliminary findings of any research activities related to monitoring the effects on launch noise and sonic booms on marine mammal populations; and (3) results of the monitoring programs, including but not necessarily limited to (a) numbers of pinnipeds present on the haul-out prior to commencement of the launch, (b) numbers of pinnipeds that may have been harassed as noted by the number of pinnipeds estimated to have entered the water as a result of launch noise, (c) the length of time(s) pinnipeds remained off the haul-out or rookery, (d) the numbers of pinniped adults or pups that may have been injured or killed as a result of the launch, and (4) any behavioral modifications by pinnipeds that likely were the result of launch noise or the sonic boom.

If a freshly dead or seriously injured pinniped is found during post-launch monitoring, the incident must be reported within 48 hours to the NMFS Office of Protected Resources and the NMFS West Coast Regional Office.

An annual report must be submitted to NMFS on March 1 of each year. The first report will cover the time period from issuance of the LOA through

February 28, 2015. Each annual report after that time will cover the time period from March 1 through February 28. Information in the annual reports will describe any incidental takings under an LOA not reported in the 90-day launch reports, such as the aircraft test program and helicopter operations and any assessments made of their impacts on hauled-out pinnipeds, summarize the information from the 90-day launch reports, and describe the information collected during monitoring of *Delta Mariner* operations. Information related to *Delta Mariner* operations that must be included in the annual report include: (1) Date, time, and duration of activity; (2) weather; (3) tide status; (4) composition (species, gender, and age class) and locations of haul-out group(s); (5) horizontal visibility; and (6) and results of the monitoring program, which include (i) number and species of pinnipeds present on haul-out(s) prior to start of activity and behavioral patterns, (ii) number and species of pinnipeds that may have been harassed as noted by the number of pinnipeds estimated to have entered the water as a result of noise related to the activity, (iii) brief description of any activity/action that causes animal(s) to flush, (iv) length of time pinnipeds remained off the haul-out or rookery, and (v) noted behavioral modifications by pinnipeds that were likely the result of the activity in the harbor.

A final report must be submitted to NMFS no later than 180 days prior to expiration of these regulations. This report must summarize the findings made in all previous reports and assess both the impacts at each of the major rookeries and the cumulative impact on pinnipeds and any other marine mammals from the specified activities.

Numbers of Marine Mammals Estimated To Be Taken by Harassment

The marine mammal species NMFS believes likely to be taken by Level B harassment incidental to launch and aircraft and helicopter operations at VAFB are harbor seals, California sea lions, northern elephant seals, northern fur seals, and Steller sea lions. NMFS believes that all of these species except for northern fur seals are likely to be taken by Level B harassment incidental to *Delta Mariner* operations at the VAFB harbor. All of these species are protected under the MMPA, and none are listed under the Endangered Species Act (ESA). On November 4, 2013, NMFS published a final rule delisting the eastern distinct population segment (DPS) of Steller sea lions (78 FR 66139). We have determined that this DPS has recovered and no longer meets the

definition of an endangered or threatened species under the Endangered Species Act. The Steller sea lions at VAFB are part of the eastern DPS. Numbers of animals that may be taken by Level B harassment are expected to vary due to factors such as type of SLV, location of the sonic boom, weather conditions (which can influence the size of the sonic boom), the time of day, and the time of year, as well as launch trajectory. For this reason, ranges are given for the harassment estimates of marine mammals. Aircraft operations will occur frequently but will avoid pinniped haul-out areas and are unlikely to disturb pinnipeds.

As noted earlier, sightings of Guadalupe fur seals have been extremely rare the last few decades at VAFB and on the NCI. Therefore, no takes by harassment are anticipated for this species incidental to the proposed activities.

Take estimates at VAFB and the NCI from launches are based on decades of visual observations and systematic marine mammal surveys conducted at

the launch sites and known pinniped haul-outs on VAFB and the NCI. Surveys are conducted by VAFB marine mammal monitors, as well as National Park Service employees. Take estimates at the VAFB harbor are based on visual observations conducted there since 2001 by marine mammal monitors noting observations during *Delta Mariner* operations.

Estimated Takes at VAFB

The following text describes the potential range of takes possible of pinnipeds on VAFB during launches. Table 10 provides this information in outline form.

Harbor seals: As many as 400 harbor seals per launch may be taken. Depending on the type of rocket being launched, the time of day, time of the year, weather conditions, tide and swell conditions, the number of seals that may be taken will range between 0 and 400. Launches and aircraft operations may occur at any time of the year, so any age classes and gender may be taken.

California sea lions: As many as 300 sea lions per launch may be taken. Sea

lions at VAFB are usually juveniles of both sexes and sub-adult males that haul out in the fall during the post breeding dispersal. Births generally do not occur at VAFB, but five pups were observed at VAFB in 2003, an El Nino year, although all were abandoned by their mothers and died within several days of birth. Sick or emaciated weaned pups may also haul out briefly.

Northern elephant seals: As many as 100 elephant seals per launch may be taken. Weaned elephant seal pups, juveniles, or young adults of both sexes, may occasionally haul out at VAFB for several days to rest or as long as 30 days to molt. Injured or sick seals may also haul out briefly.

Steller sea lions: Steller sea lions have only been noted at VAFB in April and May of 2012 and again from February–April 2013. Numbers were small. As many as 36 Steller sea lions may be taken per launch.

Northern fur seals: There are no reports of northern fur seals at VAFB. Therefore, it is unlikely that any fur seals will be taken.

TABLE 10—PREDICTED LEVEL B HARASSMENT TAKES OF PINNIPEDS ON VAFB ON A PER LAUNCH BASIS

Species	Age groups	Sex	Reproductive condition	Takes per launch from noise or visual disturbance	Takes from aircraft operations
Pacific harbor seal	All	Both	Pupping and breeding March through June	0–400	None.
California sea lion	All	Both	Pupping and breeding June through July, but no pupping expected at VAFB.	0–300	None.
Northern elephant seal.	All	Both	No pregnant or breeding animals expected; mostly “weaners”.	0–100	None.
Steller sea lion	All	Both	No pupping or breeding at VAFB	0–36	None.
Northern fur seal	Mostly juveniles	Both	Only stranded animals	None	None.

Estimated Takes on the NCI

Sonic booms created by SLVs may impact marine mammals on the NCI, particularly San Miguel Island. Missile launches utilize westward trajectories so do not cause sonic boom impacts to the NCI. Sonic boom modeling software will continue to be used to predict the area of sonic boom impact and magnitude of the sonic boom on the NCI based on the

launch vehicle, speed, trajectory, and meteorological conditions. Prior to each SLV launch, a predictive sonic boom map of the impact area and magnitude of the sonic boom will be generated. Based on previous monitoring of sonic booms created by SLVs on San Miguel (Thorson *et al.*, 1999a; 1999b), it is estimated that as much as approximately 25 percent of the marine mammals may be disturbed on SMI

(Thorson *et al.*, 1999a; 1999b). Most sonic booms that reach San Miguel Island are small (<1 psf), although larger sonic booms are possible but rarely occur. A conservative take estimate of as much as 25 percent of the animals present is used for each species per launch. Table 11 presents the potential numbers of takes per launch event on the NCI.

TABLE 11—PREDICTED LEVEL B HARASSMENT TAKES ON THE NCI ON A PER LAUNCH BASIS

Species	Age groups	Sex	Reproductive condition	Takes per launch from sonic booms
Pacific harbor seal	All	Both	Pupping and breeding March through June.	0–200.
California sea lion	All	Both	Pupping and breeding June through July.	0–6,000 pups, 0–3,000 juveniles and adults.
Northern elephant seal.	All	Both	Pupping December through March	0–500 pups, 1,000 juveniles and adults.
Steller sea lion	Adult	Both	No pupping or breeding at NCI	None; virtually no presence on San Miguel.

TABLE 11—PREDICTED LEVEL B HARASSMENT TAKES ON THE NCI ON A PER LAUNCH BASIS—Continued

Species	Age groups	Sex	Reproductive condition	Takes per launch from sonic booms
Northern fur seal ...	Mostly juveniles	Both	Pupping and breeding in June and July	0–250 pups, 0–1,000 juveniles and adults.

Estimated Takes From Delta Mariner Operations

Estimates of the numbers of marine mammals that might be affected are based on consideration of the number of animals that could be disturbed appreciably by approximately 43 days for Pacific harbor seals and California sea lions, 8 days for northern elephant seals, and 3 days for Steller sea lions. The lower number of days for northern elephant seals and Steller sea lions are based on the fact that those species haul-out in fewer numbers and fewer times throughout the year at the VAFB harbor than harbor seals or California sea lions.

Based on previous monitoring reports, with the same activities conducted in the proposed operations area, we estimate that approximately 1,161 Pacific harbor seals, 129 California sea lions, 24 northern elephant seals, and 24 Steller sea lions could be potentially affected by Level B behavioral harassment over the course of each year of activities. We base these estimates on historical pinniped survey counts from 2001 to 2011, and calculated takes by multiplying the average of the maximum abundance by the number of days noted above (i.e., the total number of operational days). Thus, the USAF requests authorization to incidentally harass approximately 1,161 Pacific harbor seals (27 animals by 43 days), 129 California sea lions (3 animals by 43 days), 24 northern elephant seals (3 animals by 8 days), and 24 Steller sea lions (8 animals by 3 days).

Table 12 presents the maximum number of potential takes on an annual basis. However, actual takes could be lower than this number. The range of animals that could be taken is based on zero animals responding up to the maximum for each launch event plus *Delta Mariner* operations. Although not anticipated between 2014 and early 2019, up to 50 launches are authorized for taking of marine mammals. However, as noted in Table 2 earlier in this document, no more than 12–19 launches are actually anticipated during this time frame. Additionally, not all launches will overfly the NCI. However, the numbers presented in Table 12 represent the maximum end of the range and assume that all 50 launches would

overfly the NCI. Therefore, actual takes will likely be much lower than the maximum estimate.

TABLE 12—TOTAL NUMBER OF ANNUAL LEVEL B TAKES FROM A TOTAL OF 50 LAUNCHES AND *Delta Mariner* OPERATIONS

[Numbers are likely overestimated as not all launches would overfly the NCI]

Species	Total number of proposed level B takes annually
Pacific harbor seal	31,161
California sea lion	465,129
Northern elephant seal	80,024
Steller sea lion	1,824
Northern fur seal	62,500

With the incorporation of mitigation measures proposed earlier in this document, the USAF and NMFS expect that only Level B incidental harassment may occur as a result of the proposed activities and that these events will result in no detectable impact on marine mammal species or stocks or on their habitats.

Negligible Impact Analysis and Preliminary Determination

We have defined “negligible impact” in 50 CFR 216.103 as “. . . an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.” In making a negligible impact determination, we consider:

- (1) The number of anticipated injuries, serious injuries, or mortalities;
- (2) The number, nature, and intensity, and duration of Level B harassment (all relatively limited);
- (3) The context in which the takes occur (i.e., impacts to areas of significance, impacts to local populations, and cumulative impacts when taking into account successive/ contemporaneous actions when added to baseline data);
- (4) The status of stock or species of marine mammals (i.e., depleted, not depleted, decreasing, increasing, stable, impact relative to the size of the population);

- (5) Impacts on habitat affecting rates of recruitment/survival; and
- (6) The effectiveness of monitoring and mitigation measures.

As mentioned previously, we estimate that five species of marine mammals could be potentially affected by Level B harassment from launch activities and that four of those five species could be potentially affected by Level B harassment from *Delta Mariner* operations.

For reasons stated previously in this document, the specified activities are not likely to cause long-term behavioral disturbance, abandonment of the haul-out area, serious injury, or mortality because:

- (1) The effects of the activities are expected to be limited to short-term startle responses and localized behavioral changes. Minor and brief responses, such as short-duration startle or alert reactions, are not likely to constitute disruption of behavioral patterns, such as migration, nursing, breeding, feeding, or sheltering.
- (2) Launches will likely not occur more than about 10–15 times per year over the next 5 years.
- (3) *Delta Mariner* off-loading operations and associated cargo movements within the harbor would occur at a maximum frequency of four times per year, and the vessel’s arrival and departure would occur during daylight hours at high tide when the haul out areas are fully submerged and few, if any, pinnipeds are present in the harbor;
- (4) The relatively slow operational speed of the *Delta Mariner* (1.5 to 2 kts; 1.72 mph) during its approach to the harbor at high tide and the vessel’s slow operational speed (0.75 kts; 0.86 mph) during its approach to the wharf;
- (5) There is no potential for large-scale movements leading to serious injury or mortality;
- (6) Many of the specified activities do not occur near rookeries;
- (7) The availability of alternate areas near the harbor for pinnipeds to avoid the resultant noise from the maintenance and vessel operations.
- (8) Results from previous monitoring reports that support our conclusions that the pinnipeds returned to the haul-out sites during periods of low tide after the disturbance and do not permanently

abandon a haul-out site during the conduct of harbor maintenance and *Delta Mariner* operations or launches from VAFB.

We do not anticipate that any injuries, serious injuries, or mortalities would occur as a result of the proposed activities, and we do not propose to authorize injury, serious injury or mortality. These species may exhibit behavioral modifications, including temporarily vacating the area during the proposed activities to avoid the resultant acoustic and visual disturbances. Due to the nature, degree, and context of the behavioral harassment anticipated, the activities are not expected to impact rates of recruitment or survival. Further, these proposed activities would not adversely impact marine mammal habitat.

We have preliminarily determined, provided that the USAF carries out the previously described mitigation and monitoring measures, that the impact of conducting the proposed activities may result, at worst, in a temporary modification in behavior and/or low-level physiological effects (Level B harassment) of certain species of marine mammals.

Based on the analysis contained here of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, we have preliminarily determined that the total taking from the proposed activities will have a negligible impact on the affected species or stocks; and that impacts to affected species or stocks of marine mammals would be mitigated to the lowest level practicable.

Impact on Availability of Affected Species or Stock for Taking for Subsistence Uses

Section 101(a)(5)(A) of the MMPA also requires us to determine that the authorization will not have an unmitigable adverse effect on the availability of marine mammal species or stocks for subsistence use. There are no relevant subsistence uses of marine mammals in the study area (northeastern Pacific Ocean) that implicate section 101(a)(5)(A) of the MMPA.

Endangered Species Act

There are no species listed as threatened or endangered in the proposed activity area. Therefore, consultation under section 7 of the ESA is not required.

National Environmental Policy Act (NEPA)

The USAF prepared a Final EA and issued a Finding of No Significant Impact (FONSI) in 1997 as part of its application for an incidental take authorization. On March 1, 1999 (64 FR 9925), NMFS adopted this EA as provided for by the Council on Environmental Quality regulations. In 2003, NMFS prepared its own EA and issued a FONSI for the final rule issued in February, 2004. In January 2009, NMFS prepared a new EA and issued a FONSI for the final rule issued in February 2009.

In 2001, the USAF prepared an EA for Harbor Activities Associated with the Delta IV Program at Vandenberg Air Force Base. In 2005, we prepared an EA augmenting the information contained in the USAF's EA and issued a FONSI on the issuance of an Incidental Harassment Authorization for United Launch Alliance's harbor activities in accordance with section 6.01 of the NOAA Administrative Order 216-6 (Environmental Review Procedures for Implementing the National Environmental Policy Act, May 20, 1999).

NMFS is currently conducting a new analysis, pursuant to NEPA, to determine whether the issuance of MMPA rulemaking and subsequent LOA(s) may have a significant effect on the human environment. This analysis will be completed prior to the issuance or denial of these proposed regulations and will be taken into account in decision-making on the final rule and LOA.

Coastal Zone Management Act Consistency

The USAF conducts separate consultations with the California Coastal Commission (CCC) for each launch activity, as each one is considered a separate Federal action. Past consultations between the USAF and the CCC have indicated that activities from VAFB similar to those described in this document are consistent to the maximum extent practicable with the enforceable policies of the California Coastal Act (CCA). The USAF is in consultation with the CCC for those launch activities that have not yet been found to be consistent with the CCA. Therefore, NMFS has preliminarily determined that the activities described in this document are consistent to the maximum extent practicable with the enforceable policies of the CCA.

National Marine Sanctuaries Act

NMFS has preliminarily determined that this action is not likely to destroy, cause the loss of, or injure any national marine sanctuary resources. NMFS will conclude any necessary consultation with the National Ocean Service's Office of National Marine Sanctuaries prior to issuance of the final rule.

Classification

Pursuant to the procedures established to implement section 6 of Executive Order 12866, the Office of Management and Budget has determined that this proposed rule is not significant.

Pursuant to section 605(b) of the Regulatory Flexibility Act, the Chief Counsel for Regulation of the Department of Commerce has certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The 30th Space Wing, USAF, and their contractors are the entities that will be affected by this rulemaking, not a small governmental jurisdiction, small organization or small business, as defined by the Regulatory Flexibility Act. United Launch Alliance, the contractor hired by the USAF to conduct the harbor activities and *Delta Mariner* operations, is a joint venture between Boeing and Lockheed Martin. The SBA defines a small entity as one that is independently owned and operated and not dominant in its field of operation. United Launch Alliance employs approximately 3,900 employees working at sites across the country, has annual revenues exceeding \$1 billion, and is dominant in the field of aerospace vehicle launching. United Launch Alliance does not meet the definition of a small entity. Accordingly, this proposed rule, if implemented, would not result in a significant economic impact on a substantial number of small entities.

List of Subjects in 50 CFR Part 217

Exports, Fish, Imports, Indians, Labeling, Marine mammals, Penalties, Reporting and recordkeeping requirements, Seafood, Transportation.

Dated: November 27, 2013.

Alan D. Risenhoover,

Director, Office of Sustainable Fisheries, performing the functions and duties of the Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For reasons set forth in the preamble, 50 CFR part 217 is proposed to be amended as follows:

**PART 217—REGULATIONS
GOVERNING THE TAKE OF MARINE
MAMMALS INCIDENTAL TO
SPECIFIED ACTIVITIES**

■ 1. The authority citation for part 217 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.*

■ 2. Subpart G is added to part 217 to read as follows:

**Subpart G—Taking of Marine Mammals
Incidental to U.S. Air Force Launches,
Aircraft and Helicopter Operations, and
Harbor Activities Related to Launch
Vehicles From Vandenberg Air Force Base
(VAFB), California**

Sec.

217.60	Specified activity and specified geographical region.
217.61	Effective dates.
217.62	Permissible methods of taking.
217.63	Prohibitions.
217.64	Mitigation.
217.65	Requirements for monitoring and reporting.
217.66	Letters of Authorization.
217.67	Renewals and Modifications of Letters of Authorization.

**Subpart G—Taking of Marine Mammals
Incidental to U.S. Air Force Launches,
Aircraft and Helicopter Operations, and
Harbor Activities Related to Launch
Vehicles From Vandenberg Air Force
Base (VAFB), California**

§ 217.60 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to the 30th Space Wing, United States Air Force (USAF), at Vandenberg Air Force Base and those persons it authorizes to conduct activities on its behalf for the taking of marine mammals that occurs in the area outlined in paragraph (b) of this section and that occurs incidental to:

(1) Launching up to 15 space and missiles vehicles each year from Vandenberg Air Force Base, for a total of up to 75 missiles over the 5-year period of these regulations,

(2) Launching up to 35 rockets each year from Vandenberg Air Force Base, for a total of up to 175 rocket launches over the 5-year period of these regulations,

(3) Aircraft flight test operations,

(4) Helicopter operations from Vandenberg Air Force Base, and

(5) *Delta Mariner* (or a similar vessel) operations, cargo unloading activities, and harbor maintenance dredging.

(b) The taking of marine mammals by the USAF may be authorized in a Letter of Authorization only if it occurs from the space launch complexes, launch facilities, and test pads on north and south Vandenberg Air Force Base and

the Vandenberg Air Force Base harbor on South Base.

§ 217.61 Effective dates.

[Reserved]

§ 217.62 Permissible methods of taking.

(a) Under Letters of Authorization issued pursuant to §§ 216.106 and 217.60 of this chapter, the Holder of the Letter of Authorization (herein after the USAF) may incidentally, but not intentionally, take marine mammals by harassment, within the area described in § 217.60(b), provided the activity is in compliance with all terms, conditions, and requirements of the regulations in this subpart and the appropriate Letter of Authorization.

(b) The activities identified in § 217.60(a) must be conducted in a manner that minimizes, to the greatest extent practicable, any adverse impacts on marine mammals and their habitat.

(c) The incidental take of marine mammals under the activities identified in § 217.60(a) is limited to the indicated number of Level B harassment takes on an annual basis of the following species:

- (1) Harbor seals (*Phoca vitulina*)—31,161;
- (2) California sea lions (*Zalophus californianus*)—465,129;
- (3) Northern elephant seals (*Mirounga angustirostris*)—80,024;
- (4) Northern fur seals (*Callorhinus ursinus*)—62,500; and
- (5) Steller sea lions (*Eumetopias jubatus*)—1,824.

§ 217.63 Prohibitions.

Notwithstanding takings contemplated in § 217.62(c) and authorized by a Letter of Authorization issued under §§ 216.106 and 217.66 of this chapter, no person in connection with the activities described in § 217.60 may:

(a) Take any marine mammal not specified in § 217.62(c);

(b) Take any marine mammal specified in § 217.62(c) other than by incidental, unintentional Level B harassment;

(c) Take a marine mammal specified in § 217.62(c) if NMFS determines such taking results in more than a negligible impact on the species or stocks of such marine mammal; or

(d) Violate, or fail to comply with, the terms, conditions, and requirements of this subpart or a Letter of Authorization issued under §§ 216.106 and 217.66 of this chapter.

§ 217.64 Mitigation.

(a) When conducting the activities identified in § 217.60(a), the mitigation measures contained in the Letter of

Authorization issued under §§ 216.106 and 217.66 of this chapter must be implemented. These mitigation measures include (but are not limited to):

(1) All aircraft and helicopter flight paths must maintain a minimum distance of 1,000 ft (305 m) from recognized seal haul-outs and rookeries (e.g., Point Sal, Purisima Point, Rocky Point), except in emergencies or for real-time security incidents (e.g., search-and-rescue, fire-fighting), which may require approaching pinniped haul-outs and rookeries closer than 1,000 ft (305 m).

(2) For missile and rocket launches, holders of Letters of Authorization must avoid, whenever possible, launches during the harbor seal pupping season of March through June, unless constrained by factors including, but not limited to, human safety, national security, or for space vehicle launch trajectory necessary to meet mission objectives.

(3) Vandenberg Air Force Base must avoid, whenever possible, launches which are predicted to produce a sonic boom on the Northern Channel Islands during harbor seal, elephant seal, California sea lion, and northern fur seal pupping seasons of March through June.

(4) If post-launch surveys determine that an injurious or lethal take of a marine mammal has occurred, the launch procedure and the monitoring methods must be reviewed, in cooperation with the National Marine Fisheries Service (NMFS), and appropriate changes must be made through modification to a Letter of Authorization, prior to conducting the next launch under that Letter of Authorization.

(5) *Delta Mariner* operations, cargo unloading, and harbor maintenance dredging measures:

(i) If activities occur during nighttime hours, turn on lighting equipment before dusk. Lights must remain on for the entire night to avoid startling pinnipeds.

(ii) Initiate operations before dusk.

(iii) Keep construction noises at a constant level (i.e., not interrupted by periods of quiet in excess of 30 minutes) while pinnipeds are present.

(iv) Initiate a gradual start-up of activities to ensure a gradual increase in noise levels if activities cease for longer than 30 minutes and pinnipeds are in the area.

(v) Conduct visual monitor, by a qualified observer, of the harbor seals on the beach adjacent to the harbor and on rocks for any flushing or other behaviors as a result of activities described in § 217.60(a).

(vi) The *Delta Mariner* and accompanying vessels must enter the harbor only when the tide is too high for harbor seals to haul-out on the rocks; reducing speed to 1.5 to 2 knots (1.5–2 nm/hr; 2.8–3.7 km/hr) once the vessel is within 3 mi (4.83 km) of the harbor. The vessel must enter the harbor stern first, approaching the wharf and moorings at less than 0.75 knot (1.4 km/hr).

(vii) Explore alternate dredge methods and introduce quieter techniques and equipment as they become available.

(6) Additional mitigation measures as contained in a Letter of Authorization.

(b) [Reserved]

§ 217.65 Requirements for monitoring and reporting.

(a) Unless specified otherwise in the Letter of Authorization, the USAF must notify the Administrator, West Coast Region, NMFS, by letter or telephone, at least 2 weeks prior to activities possibly involving the taking of marine mammals. If the authorized activity identified in § 217.60(a) is thought to have resulted in the mortality or injury of any marine mammals or in any take of marine mammals not identified in § 217.62(c), then the USAF must notify the Director, Office of Protected Resources, NMFS, or designee, by telephone (301–427–8401), within 48 hours of the discovery of the injured or dead animal.

(b) To conduct monitoring of launch activities, the USAF must designate qualified, on-site individuals approved in advance by NMFS, as specified in the Letter of Authorization, to:

(1) Conduct observations on pinniped activity in the vicinity of the rookery nearest the launch platform or, in the absence of pinnipeds at that location, at another nearby haul-out, for at least 72 hours prior to any planned launch occurring during the harbor seal pupping season (1 March through 30 June) and continue for a period of time not less than 48 hours subsequent to launching.

(2) For launches during the harbor seal pupping season (March through June), conduct follow-up surveys within 2 weeks of the launch to ensure that there were no adverse effects on any marine mammals,

(3) Monitor haul-out sites on the Northern Channel Islands, if it is determined by modeling that a sonic boom of greater than 1 psf is predicted to impact one of the Islands between March 1 and June 30, greater than 1.5 psf between July 1 and September 30, and greater than 2 psf between October 1 and February 28. Monitoring will be

conducted at the haul-out site closest to the predicted sonic boom impact area.

(4) Investigate the potential for spontaneous abortion, disruption of effective female-neonate bonding, and other reproductive dysfunction,

(5) Supplement observations on Vandenberg and on the Northern Channel Islands with video-recording of mother-pup seal responses for daylight launches during the pupping season,

(6) Conduct acoustic measurements of those launch vehicles that have not had sound pressure level measurements made previously, and

(7) Include multiple surveys each day that surveys are required that record the species, number of animals, general behavior, presence of pups, age class, gender and reaction to launch noise, sonic booms or other natural or human caused disturbances, in addition to recording environmental conditions such as tide, wind speed, air temperature, and swell.

(c) To conduct monitoring of harbor activities, the USAF must designate qualified, on-site individuals approved in advance by NMFS, as specified in the Letter of Authorization. During nighttime activities, the harbor area will be illuminated, and the observer will use a night vision scope. Monitoring activities will consist of the following:

(1) Conducting baseline observation of pinnipeds in the project area prior to initiating project activities.

(2) Conducting and recording observations on pinnipeds in the vicinity of the harbor for the duration of the activity occurring when tides are low enough (less than or equal to 2 ft (0.61 m) for pinnipeds to haul out.

(3) Conducting post-construction observations of pinniped haul-outs in the project area to determine whether animals disturbed by the project activities return to the haul-out.

(d) Holders of Letters of Authorization must conduct additional monitoring as required under a Letter of Authorization.

(e) The USAF must submit a report to the West Coast Regional Administrator, NMFS, within 90 days after each launch. This report must contain the following information:

(1) Date(s) and time(s) of the launch,

(2) Design of the monitoring program, and

(3) Results of the monitoring program, including, but not necessarily limited to:

(i) Numbers of pinnipeds present on the haul-out prior to commencement of the launch,

(ii) Numbers of pinnipeds that may have been harassed as noted by the number of pinnipeds estimated to have

entered the water as a result of launch noise,

(iii) The length of time pinnipeds remained off the haul-out or rookery,

(iv) Numbers of pinniped adults, juveniles or pups that may have been injured or killed as a result of the launch, and

(v) Behavioral modifications by pinnipeds that were likely the result of launch noise or the sonic boom.

(f) An annual report must be submitted on March 1 of each year.

(g) A final report must be submitted at least 180 days prior to expiration of these regulations. This report will:

(1) Summarize the activities undertaken and the results reported in all previous reports,

(2) Assess the impacts at each of the major rookeries,

(3) Assess the cumulative impacts on pinnipeds and other marine mammals from the activities specified in § 217.60(a), and

(4) State the date(s), location(s), and findings of any research activities related to monitoring the effects on launch noise, sonic booms, and harbor activities on marine mammal populations.

§ 217.66 Letters of Authorization.

(a) To incidentally take marine mammals pursuant to these regulations, the USAF must apply for and obtain a Letter of Authorization.

(b) A Letter of Authorization, unless suspended or revoked, may be effective for a period of time not to exceed the expiration date of these regulations.

(c) If a Letter of Authorization expires prior to the expiration date of these regulations, the USAF must apply for and obtain a renewal of the Letter of Authorization.

(d) In the event of projected changes to the activity or to mitigation and monitoring measures required by a Letter of Authorization, the USAF must apply for and obtain a modification of the Letter of Authorization as described in § 217.67.

(e) The Letter of Authorization will set forth:

(1) Permissible methods of incidental taking;

(2) Means of effecting the least practicable adverse impact (i.e., mitigation) on the species, its habitat, and on the availability of the species for subsistence uses; and

(3) Requirements for monitoring and reporting.

(f) Issuance of the Letter of Authorization shall be based on a determination that the level of taking will be consistent with the findings made for the total taking allowable under these regulations.

(g) Notice of issuance or denial of a Letter of Authorization shall be published in the **Federal Register** within 30 days of a determination.

§ 217.67 Renewals and Modifications of Letters of Authorization.

(a) A Letter of Authorization issued under § 216.106 and § 217.66 of this chapter for the activity identified in § 217.60(a) shall be renewed or modified upon request by the applicant, provided that:

(1) The proposed specified activity and mitigation, monitoring, and reporting measures, as well as the anticipated impacts, are the same as those described and analyzed for these regulations (excluding changes made pursuant to the adaptive management provision in § 217.67(c)(1)), and

(2) NMFS determines that the mitigation, monitoring, and reporting measures required by the previous Letter of Authorization under these regulations were implemented.

(b) For Letter of Authorization modification or renewal requests by the applicant that include changes to the activity or the mitigation, monitoring, or reporting (excluding changes made pursuant to the adaptive management

provision in § 217.67(c)(1)) that do not change the findings made for the regulations or result in no more than a minor change in the total estimated number of takes (or distribution by species or years), NMFS may publish a notice of proposed Letter of Authorization in the **Federal Register**, including the associated analysis illustrating the change, and solicit public comment before issuing the Letter of Authorization.

(c) A Letter of Authorization issued under § 216.106 and § 217.66 of this chapter for the activity identified in § 217.60(a) may be modified by NMFS under the following circumstances:

(1) Adaptive Management—NMFS may modify (including augment) the existing mitigation, monitoring, or reporting measures (after consulting with the USAF regarding the practicability of the modifications) if doing so creates a reasonable likelihood of more effectively accomplishing the goals of the mitigation and monitoring set forth in the preamble for these regulations.

(i) Possible sources of data that could contribute to the decision to modify the

mitigation, monitoring, or reporting measures in a Letter of Authorization:

(A) Results from the USAF's monitoring from the previous year(s).

(B) Results from other marine mammal and/or sound research or studies.

(C) Any information that reveals marine mammals may have been taken in a manner, extent or number not authorized by these regulations or subsequent Letters of Authorization.

(ii) If, through adaptive management, the modifications to the mitigation, monitoring, or reporting measures are substantial, NMFS will publish a notice of proposed Letter of Authorization in the **Federal Register** and solicit public comment.

(2) Emergencies—If NMFS determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in § 217.62(c), a Letter of Authorization may be modified without prior notice or opportunity for public comment. Notice would be published in the **Federal Register** within 30 days of the action.

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