DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 218

RIN 0648–AX10

Taking and Importing Marine Mammals; U.S. Navy Training in the Cherry Point Range Complex

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. Navy (Navy) for authorization to take marine mammals incidental to training activities conducted within the Cherry Point Range Complex for the period of May 2009 through May 2014. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is proposing regulations to govern that take and requesting information, suggestions, and comments on these proposed regulations.

DATES: Comments and information must be received no later than April 6, 2009.

ADDRESSES: You may submit comments, identified by 0648–AX10, by any one of the following methods:

- Electronic Submissions: Submit all electronic public comments via the Federal eRulemaking Portal *http://www.regulations.gov*.
- Hand delivery or mailing of paper, disk, or CD–ROM comments should be addressed to Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910–3225.

Instructions: All comments received are 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 NA 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.

FOR FURTHER INFORMATION CONTACT: Shane Guan, Office of Protected Resources, NMFS, (301) 713–2289, ext. 137.

SUPPLEMENTARY INFORMATION:

Availability

A copy of the Navy's application may be obtained by writing to the address specified above (See **ADDRESSES**), telephoning the contact listed above (see **FOR FURTHER INFORMATION CONTACT**), or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm*. The Navy's Draft Environmental Impact Statement (DEIS) for the Cherry Point Range Complex was published on September 12, 2008, and may be viewed at *http://www.NavyCherryPointRangeComplexEIS.com*. NMFS participated in the development of the Navy's DEIS as a cooperating agency under the National Environmental Policy Act (NEPA).

Background

Sections 101(a)(5)(A) and (D) of the 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 marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) during periods of not more than five consecutive years each if certain findings are made and regulations are issued or, if the taking is limited to harassment, notice of a proposed authorization is provided to the public for review.

Authorization shall 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 subsistence uses, and if 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) (Public Law 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].

Summary of Request

On June 13, 2008, NMFS received an application from the Navy requesting authorization for the take of Atlantic spotted dolphin incidental to the proposed training activities in the Cherry Point Range Complex over the course of 5 years. These training activities are classified as military readiness activities. The Navy states that these training activities may cause various impacts to marine mammal species in the proposed Cherry Point Range Complex area. The Navy requests an authorization to take two individuals of this species annually by Level B Harassment. Please refer to the take table on page 6 of the Addendum of the LOA application for detailed information of the potential exposures from explosive ordnance (per year) for marine mammals in the Cherry Point Range Complex. However, due to the implementation of the proposed mitigation and monitoring measures, NMFS believes that the actual take would be less than estimated.

Description of the Specified Activities

The Navy Cherry Point Range Complex geographically encompasses offshore and near-shore operating areas (OPAREAs), instrumented ranges, and special use airspace (SUA) located along the southern east coast (North Carolina and South Carolina) of the U.S. Atlantic coast (see Figure 1 of the LOA application). The action area includes the area from the shoreline to the 3 nm (5.6 km) boundary of the OPAREA, as well as the Cherry Point OPAREA. Together, components of the Navy Cherry Point Range Complex encompass:

- 18,966 nm^2 of special use airspace (warning area);
- 18,617 nm^2 of offshore surface and subsurface OPAREA; and
- 12,529 nm^2 of subsurface area greater than 100 fathoms (600 ft) in depth.

In the application submitted to NMFS, the Navy requests an authorization to take marine mammals incidental to conducting training operations within the Cherry Point Range Complex. These training activities consist of surface warfare, mine warfare, amphibious warfare, and vessel movement. A description of each

of these training activities is provided below:

Surface Warfare

Surface Warfare (SUW) supports defense of a geographical area (e.g., a zone or barrier) in cooperation with surface, subsurface, and air forces. SUW operations detect, localize, and track surface targets, primarily ships. Detected ships are monitored visually and with radar. Operations include identifying surface contacts, engaging with weapons, disengaging, evasion, and avoiding attack, including implementation of radio silence and deceptive measures. For the proposed Cherry Point Range Complex training operations, SUW events involving the use of explosive ordnance include air-to-surface Missile Exercises (MISSILEX) that occur at sea.

Air-to-surface missile exercises involve helicopter (AH–1W) crews launching missiles at at-sea surface targets with the goal of destroying or disabling the target. MISSILEX (A–S) training in the Navy Cherry Point Study Area can occur during the day or at night. Table 1 below summarizes the level of MISSILEX planned in the Cherry Point Range Complex for the proposed action.

TABLE 1—LEVEL OF MISSILEX PLANNED IN THE CHERRY POINT RANGE COMPLEX PER YEAR

Operation	Platform	System/ordnance	Number of events	Potential time of day
Missile Exercise (MISSILEX) (Air to Surface).	AH–1W	AGM–114 (Hellfire; 8-pound [lb] Net Explosive Weight [NEW] High Explosive [HE] rounds[1] and Non-Explosive Practice Munitions [NEPM]).	8 sorties (5 HE missiles; 3 NEPM).	Day or Night.
		Tube-launched, Optically tracked, Wire-guided (TOW) Missile (all 15.33 NEW HE rounds)[1].	8 sorties (8 missiles).	

[1] Uses stationary or towed surface targets; 1 missile/sortie.

Mine Warfare/Mine Exercises

Mine Warfare (MIW) includes the strategic, operational, and tactical use of mines and mine countermine measures (MCM). MIW is divided into two basic subdivisions: (a) The laying of mines to degrade the enemy's capabilities to wage land, air, and maritime warfare, and (b) the countering of enemy-laid mines to permit friendly maneuver or use of selected land or sea areas (DoN, 2007d).

MIW consists of two unit level operations: Airborne mine countermeasures (AMCM) and mine neutralization. AMCM or Mine Countermeasures Exercises (MCMEX) train forces to detect, identify, classify, mark, avoid, and disable (or verify destruction of) underwater mines (bottom or moored) using a variety of methods including air, surface, sub-surface, and ground assets. The AMCM systems include mine hunting sonar (AQS–24A), influence mine sweeping systems (MK–105 and MK–104), anti-mine ordnance (Airborne Mine Neutralization System [AMNS]), and moored mine sweep system (MK–103).

Mine Neutralization operations involve the detection, identification, evaluation, rendering safe, and disposal of underwater Unexploded Ordnance (UXO) that constitutes a threat to ships or personnel. Mine hunting techniques involve divers, specialized sonar, and unmanned underwater vehicles (UUVs) to locate and classify the mines and then destroy them using one of two methods: mechanical (explosive cutters) or influence (matching the acoustic, magnetic, or pressure signature of the mine).

In addition to the current mine exercises (AMCM), the Organic Airborne Mine Countermeasures (OAMCM) training exercises will begin in the Navy Cherry Point Operating Area (OPAREA) as these new systems are introduced into the fleet. The OAMCM systems include mine hunting sonar (AQS–20), influence mine sweeping towed arrays (Organic Airborne and Surface Influence Sweep [OASIS]) that emulates the magnetic and acoustic signatures of transit platforms, anti-mine ordnance systems (Rapid Airborne Mine Clearance System [RAMICS] and AMNS), and mine hunting laser (Airborne Laser Mine Detection System [ALMDS]) that uses a light imaging detecting and ranging (LIDAR) to detect, localize, and classify near-surface moored/floating mines.

MIW training using Explosive Ordnance Disposal (EOD) underwater detonations in the Navy Cherry Point Study Area occur only during daylight hours in the locations described in Figure 1 of the LOA application. Table 2 below shows a summarized level of MIW in the Cherry Point Study Area.

TABLE 2—LEVEL OF MINE WARFARE PLANNED IN THE CHERRY POINT RANGE COMPLEX PER YEAR

Operation	Platform	System/ordnance	Number of events per year	Potential time of day	Duration of event
Mine Neutralization	EOD	20 lb NEW charges	20 events	Day	8 hours.

EOD personnel detect, identify, evaluate, and neutralize mines. The EOD mission during training is to locate and neutralize mine shapes after they are initially located by another source, such as an MCM or coastal minehunter MHC class ship or an MH–53 or MH–60 helicopter. For underwater detonations, EOD divers are deployed from a ship or small boat to practice neutralizing a mine shape underwater. The neutralization exercise in the water is normally done with an explosive charge of 20-lbs NEW. The initiation of the charge is controlled remotely by EOD personnel. If the mine shape were an actual mine, it would explode due to the pressure and energy exerted in the water from the smaller EOD explosive charge. This training is conducted only during day light hours in the Cherry Point Area.

Amphibious Warfare

Amphibious Warfare (AMW) involves the utilization of naval firepower and logistics in combination with U.S. Marine Corps (USMC) landing forces to project military power ashore. AMW encompasses a broad spectrum of operations involving maneuver from the sea to objectives ashore, ranging from shore assaults, boat raids, ship-to-shore maneuver, shore bombardment and other naval fire support, and air strike

and close air support training. In the Cherry Point Study Area, AMW training is limited to Firing Exercises (FIREX).

During a FIREX, surface ships use their main battery guns to fire from sea at land targets in support of military forces ashore. On the east coast, the land ranges where FIREX training can take place are limited. Therefore, land masses are simulated during east coast FIREX training using the Integrated Maritime Portable Acoustic Scoring and Simulation System (IMPASS) system, a system of buoys that simulate a land mass. FIREX training using IMPASS in the Cherry Point Study Area would occur only during daylight hours in the locations described in Figure 1 of the LOA application. Table 3 below summarizes the levels of FIREX with IMPASS planned in the Cherry Point Range Complex for the proposed action.

TABLE 3—LEVEL OF FIREX WITH IMPASS PLANNED IN THE CHERRY POINT RANGE COMPLEX PER YEAR

Operation	Platform	System/ordnance	Number of events	Potential time of day	Duration of event
FIREX with IMPASS	CG, DDG	5″ gun (IMPASS)	2 events (78 rounds)	Day	12 hours.

Vessel Movement

Vessel movements are associated with most activities under the training operations in the Navy Cherry Point Study Area. Currently, the number of Navy vessels operating in the Navy Cherry Point Study Area varies based on training schedules and can range from 0 to about 10 vessels at any given time. Ship sizes range from 362 ft for a submarine (SSN) to 1,092 ft for an aircraft carrier (CVN) and speeds generally range from 10 to 14 knots (kt). Operations involving vessel movements occur intermittently and are variable in duration, ranging from a few hours up to 2 weeks. These operations are widely dispersed throughout the OPAREA, which is a vast area encompassing 18,617 square nautical miles (nm^2) (an area approximately the size of West Virginia). The Navy logs about 950 total vessel days within the Study Area during a typical year. Consequently, the density of ships within the Study Area at any given time is extremely low (i.e., less than 0.005 ships/nm^2).

Description of Marine Mammals in the Area of the Specified Activities

There are 33 cetacean species, 4 pinniped species, and 1 sirenian species that have the potential or are confirmed to occur in the Cherry Point Range Complex (DoN, 2008). However, only 34 of those species are expected to occur regularly in the OPAREA, as indicated in Table 4. The remaining species are considered extralimital in the Study Area; indicating there are one or more records of an animal's presence in the Study Area, but it is considered beyond the normal range of the species. Extralimital species will not be analyzed further in this study.

TABLE 4—MARINE MAMMAL SPECIES FOUND IN THE CHERRY POINT RANGE COMPLEX

Family and scientific name	Common name	Federal status
	Order Cetacea Suborder Mysticeti (baleen whales)	
Eubalaena glacialis	North Atlantic right whale	Endangered.
Megaptera novaeangliae	Humpback whale	Endangered.
Balaenoptera acutorostrata	Minke whale.	
B. brydei	Bryde's whale.	
B. borealis	Sei whale	Endangered.
B. physalus	Fin whale	Endangered.
B. musculus	Blue whale	Endangered.
	Suborder Odontoceti (toothed whales)	
Physeter macrocephalus	Sperm whale	Endangered.
Kogia breviceps	Pygmy sperm whale.	
K. sima	Dwarf sperm whale.	
Ziphius cavirostris	Cuvier's beaked whale.	
Mesoplodon minus	True's beaked whale.	
M. europaeus	Gervais' beaked whale.	
M. bidens	Sowerby's beaked whale.	
M. densirostris	Blainville's beaked whale.	
Steno bredanensis	Rough-toothed dolphin.	
Tursiops truncatus	Bottlenose dolphin.	
Stenella attenuata	Pantropical spotted dolphin.	
S. frontalis	Atlantic spotted dolphin.	
S. longirostris	Spinner dolphin.	
S. clymene	Clymene dolphin.	
S. coeruleoalba	Striped dolphin.	
Delphinus delphis	Common dolphin.	
Lagenodephis hosei	Fraser's dolphin.	
Grampus griseus	Risso's dolphin.	
Peponocephala electra	Melon-headed whale.	
Feresa attenuata	Pygmy killer whale.	
Pseudorca crassidens	False killer whale.	
Orcinus orca	Killer whale.	

TABLE 4—MARINE MAMMAL SPECIES FOUND IN THE CHERRY POINT RANGE COMPLEX—Continued

Family and scientific name	Common name	Federal status
Globicephala melas	Long-finned pilot whale.	
G. macrorhynchus	Short-finned pilot whale.	
Phocoena phocoena	Harbor porpoise.	
Order Carnivora Suborder Pinnipedia (seals, sea lions, walruses)		
Phoca vitulina	Harbor seal.	
Order Sirenia		
Trichechus manatus	West Indian manatee	Endangered.

The information contained herein relies heavily on the data gathered in the Marine Resource Assessments (MRAs). The Navy MRA Program was implemented by the Commander, Fleet Forces Command, to initiate collection of data and information concerning the protected and commercial marine resources found in the Navy's OPAREAs. Specifically, the goal of the MRA program is to describe and document the marine resources present in each of the Navy's OPAREAs. The MRA for the Cherry Point Study Area was recently updated in 2008 (DoN, 2008).

The MRA data were used to provide a regional context for each species. The MRA represents a compilation and synthesis of available scientific literature (e.g., journals, periodicals, theses, dissertations, project reports, and other technical reports published by government agencies, private businesses, or consulting firms), and NMFS reports including stock assessment reports, recovery plans, and survey reports.

The density estimates that were used in previous Navy environmental documents have been recently updated to provide a compilation of the most recent data and information on the occurrence, distribution, and density of marine mammals. The updated density estimates presented in this assessment are derived from the Navy OPAREA Density Estimates (NODE) for the Southeast OPAREAs report (DoN, 2007). Quantification of marine mammal density and abundance was primarily accomplished by evaluating line-transect survey data which was collected by the NMFS Northeast and Southeast Fisheries Science Centers (NEFSC and SEFSC). The NEFSC and SEFSC are the technical centers within NMFS that are responsible for collecting and analyzing data to assess marine mammal stocks in the U.S. Atlantic Exclusive Economic Zone (EEZ). These data sets were analyzed and evaluated in conjunction with regional subject matter experts, NMFS technical staff, and scientists with the University of St. Andrews, Scotland, Centre for Environmental and Ecological Modelling (CREEM). Methods and results are detailed in NODE Reports covering all U.S. Atlantic coast OPAREAS as well as the Gulf of Mexico.

Density estimates for cetaceans were derived in one of three ways, in order of preference: (1) Through spatial models using line-transect survey data provided by the NMFS (as discussed below); (2) using abundance estimates from Mullin and Fulling (2003); or (3) based on the cetacean abundance estimates found in the NMFS stock assessment reports (SAR; Waring *et al.*, 2007), which can be viewed at *http://www.nmfs.noaa.gov/pr/sars/species.htm*. The following lists how density estimates were derived for each species:

Model-Derived Density Estimates

Fin whale, sperm whale, beaked whales, bottlenose dolphin, Atlantic spotted dolphin, striped dolphin, common dolphin, Risso's dolphin, and pilot whales.

SAR or Literature-Derived Density Estimates

North Atlantic right whale, humpback whale, minke whale, *Kogia* spp., rough-toothed dolphin, pantropical spotted dolphin, and Clymene dolphin.

Species for Which Density Estimates Are Not Available

Blue whale, sei whale, Bryde's whale, killer whale, pygmy killer whale, false killer whale, melon-headed whale, spinner dolphin, Fraser's dolphin, harbor porpoise.

Spatial modeling using Program DISTANCE (RUWPA), a program based on Buckland *et al.* (2001, 2004), is the primary method of density estimation used to produce the updated NODE reports. Together with appropriate line-transect survey data, this method provides the most accurate/up-to-date density information for marine mammals in U.S. Navy OPAREAs. The density estimates in this document were calculated by a team of experts using survey data collected and provided by the NMFS and with expert modeling support provided by CREEM. Researchers at CREEM are recognized as the international authority on density estimation and have been at the forefront in development of new techniques and analysis methods for animal density including spatial modeling techniques. Spatial modeling techniques have an advantage over traditional line-transect/distance sampling techniques in that they can provide relatively fine scale estimates for areas with limited or no available survey effort by creating models based on habitat parameters associated with observations from other surveys with similar spatial or temporal characteristics. Analysis of line-transect data in this manner allows for finer-scale spatial and/or temporal resolution of density estimates, providing indications of regions within the study area where higher and lower concentrations of marine mammals may occur rather than the traditional approach of generating a single estimate covering a broad spatial strata. These generic spatial strata tend to mask the finer scale habitat associations suggested by the specific ecology of an individual species.

For the model-based approach, density estimates were calculated for each species within areas containing survey effort. A relationship between these density estimates and the associated environmental parameters such as depth, slope, distance from the shelf break, sea surface temperature (SST), and chlorophyll *a* concentration was formulated using generalized additive models (GAMs). This relationship was then used to generate a two-dimensional density surface for

the region by predicting densities in areas where no survey data exist. For the Southeast, all analyses for cetaceans were based on sighting data collected through shipboard surveys conducted by the NMFS NEFSC and SEFSC between 1998 and 2005. Species-specific density estimates derived through spatial modeling were compared with abundance estimates found in the SAR (Waring *et al.*, 2007) to ensure consistency and all spatial models and density estimates were reviewed by NMFS technical staff. For a more detailed description of the methodology involved in calculating the density estimates, please refer to the NODE report for the Southeast OPAREAs (DoN, 2007a).

Potential Impacts to Marine Mammal Species

The Navy considers that explosions associated with MISSILEX, FIREX with IMPASS, and MINEX are the activities with the potential to result in Level A or Level B harassment of marine mammals. Vessel strikes were also analyzed for potential effect to marine mammals.

Vessel Strikes

Collisions with commercial and Navy ships can result in serious injury and may occasionally cause fatalities to cetaceans and manatees. Although the most vulnerable marine mammals may be assumed to be slow-moving cetaceans or those that spend extended periods of time at the surface in order to restore oxygen levels within their tissues after deep dives (e.g., sperm whale), fin whales are actually struck most frequently (Laist *et al.*, 2001). Manatees are also particularly susceptible to vessel interactions and collisions with watercraft constitute the leading cause of mortality (USFWS, 2007). Smaller marine mammals such as bottlenose and Atlantic spotted dolphins move more quickly throughout the water column and are often seen riding the bow wave of large ships. Marine mammal responses to vessels may include avoidance and changes in dive pattern (NRC, 2003).

After reviewing historical records and computerized stranding databases for evidence of ship strikes involving baleen and sperm whales, Laist *et al.* (2001) found that accounts of large whale ship strikes involving motorized boats in the area date back to at least the late 1800s. Ship collisions remained infrequent until the 1950s, after which point they increased. Laist *et al.* (2001) report that both the number and speed of motorized vessels have increased over time for trans-Atlantic passenger services, which transit through the area. They concluded that most strikes occur over or near the continental shelf, that ship strikes likely have a negligible effect on the status of most whale populations, but that for small populations or segments of populations the impact of ship strikes may be significant.

Although ship strikes may result in the mortality of a limited number of whales within a population or stock, Laist *et al.* (2001) also concluded that, when considered in combination with other human-related mortalities in the area (e.g., entanglement in fishing gear), these ship strikes may present a concern for whale populations.

Of 11 species known to be hit by ships, fin whales are struck most frequently; followed by right whales, humpback whales, sperm whales, and gray whales (Laist *et al.*, 2001). In some areas, one-third of all fin whale and right whale strandings appear to involve ship strikes. Sperm whales spend long periods (typically up to 10 minutes; Jacquet *et al.*, 1996) ''rafting'' at the surface between deep dives. This could make them exceptionally vulnerable to ship strikes. Berzin (1972) noted that there were ''many'' reports of sperm whales of different age classes being struck by vessels, including passenger ships and tug boats. There were also instances in which sperm whales approached vessels too closely and were cut by the propellers (NMFS, 2006).

The east coast is a principal migratory corridor for North Atlantic right whales that travel between the calving/nursery areas in the Southeastern United States and feeding grounds in the northeast U.S. and Canada. Transit to the Study Area from mid-Atlantic ports requires Navy vessels to cross the migratory route of North Atlantic right whales. Southward right whale migration generally occurs from mid- to late November, although some right whales may arrive off the Florida coast in early November and stay into late March (Kraus *et al.*, 1993). The northbound migration generally takes place between January and late March. Data indicate that during the spring and fall migration, right whales typically occur in shallow water immediately adjacent to the coast, with over half the sightings (63 percent) occurring within 18.5 km (10 NM), and 94.1 percent reported within 55 km (30 NM) of the coast. Given the low abundance of North Atlantic right whales relative to other species, the frequency of occurrence of vessel collisions to right whales suggests that the threat of ship strikes is proportionally greater to this species (Jensen and Silber, 2003). Therefore, in 2008, NMFS published a final rule concerning right whale vessel collision reduction strategy and established operational measures for the shipping industry to reduce the potential for large vessel collisions with North Atlantic right whales while transiting to and from mid-Atlantic ports during right whale migratory periods (73 FR 60173; October 10, 2008). Although NMFS' ship strike rule does not apply to the Navy's activities, the Navy developed its own ship strike avoidance measures to reduce the probability of ship strikes. Recent studies of right whales have shown that these whales tend to lack a response to the sounds of oncoming vessels (Nowacek *et al.*, 2004). Although Navy vessel traffic generally represents only 2–3 percent of overall large vessel traffic, based on this biological characteristic and the presence of critical Navy ports along the whales' mid-Atlantic migratory corridor, the Navy was the first federal agency to proactively adopt additional mitigation measures for transits in the vicinity of mid-Atlantic ports during right whale migration.

Accordingly, the Navy has proposed mitigation measures to reduce the potential for collisions with surfaced marine mammals (for more details refer to Proposed Mitigation Measures below). Based on the implementation of Navy mitigation measures, especially during times of anticipated right whale occurrence, and the relatively low density of Navy ships in the Study Area the likelihood that a vessel collision would occur is very low.

Assessment of Marine Mammal Response to Anthropogenic Sound

Marine mammals respond to various types of anthropogenic sounds introduced in the ocean environment. Responses are typically subtle and can include shorter surfacings, shorter dives, fewer blows per surfacing, longer intervals between blows (breaths), ceasing or increasing vocalizations, shortening or lengthening vocalizations, and changing frequency or intensity of vocalizations (NRC, 2005). However, it is not known how these responses relate to significant effects (e.g., long-term effects or population consequences). The following is an assessment of marine mammal responses and disturbances when exposed to anthropogenic sound.

I. Physiology

Potential impacts to the auditory system are assessed by considering the characteristics of the received sound (e.g., amplitude, frequency, duration) and the sensitivity of the exposed

animals. Some of these assessments can be numerically based (e.g., temporary threshold shift [TTS] of hearing sensitivity, permanent threshold shift [PTS] of hearing sensitivity, perception). Others will be necessarily qualitative, due to a lack of information, or will need to be extrapolated from other species for which information exists.

Potential physiological responses to the sound exposure are ranked in descending order, with the most severe impact (auditory trauma) occurring at the top and the least severe impact occurring at the bottom (the sound is not perceived).

Auditory trauma represents direct mechanical injury to hearing related structures, including tympanic membrane rupture, disarticulation of the middle ear ossicles, and trauma to the inner ear structures such as the organ of Corti and the associated hair cells. Auditory trauma is always injurious that could result in PTS. Auditory trauma is always assumed to result in a stress response.

Auditory fatigue refers to a loss of hearing sensitivity after sound stimulation. The loss of sensitivity persists after, sometimes long after, the cessation of the sound. The mechanisms responsible for auditory fatigue differ from auditory trauma and would primarily consist of metabolic exhaustion of the hair cells and cochlear tissues. The features of the exposure (e.g., amplitude, frequency, duration, temporal pattern) and the individual animal's susceptibility would determine the severity of fatigue and whether the effects were temporary (TTS) or permanent (PTS). Auditory fatigue (PTS or TTS) is always assumed to result in a stress response.

Sounds with sufficient amplitude and duration to be detected among the background ambient noise are considered to be perceived. This category includes sounds from the threshold of audibility through the normal dynamic range of hearing (i.e., not capable of producing fatigue).

To determine whether an animal perceives the sound, the received level, frequency, and duration of the sound are compared to what is known of the species' hearing sensitivity.

Since audible sounds may interfere with an animal's ability to detect other sounds at the same time, perceived sounds have the potential to result in auditory masking. Unlike auditory fatigue, which always results in a stress response because the sensory tissues are being stimulated beyond their normal physiological range, masking may or may not result in a stress response, depending on the degree and duration of the masking effect. Masking may also result in a unique circumstance where an animal's ability to detect other sounds is compromised without the animal's knowledge. This could conceivably result in sensory impairment and subsequent behavior change; in this case, the change in behavior is the lack of a response that would normally be made if sensory impairment did not occur. For this reason, masking also may lead directly to behavior change without first causing a stress response.

The features of perceived sound (e.g., amplitude, duration, temporal pattern) are also used to judge whether the sound exposure is capable of producing a stress response. Factors to consider in this decision include the probability of the animal being naïve or experienced with the sound (i.e., what are the known/unknown consequences of the exposure).

If the received level is not of sufficient amplitude, frequency, and duration to be perceptible by the animal, by extension, this does not result in a stress response (not perceived). Potential impacts to tissues other than those related to the auditory system are assessed by considering the characteristics of the sound (e.g., amplitude, frequency, duration) and the known or estimated response characteristics of non-auditory tissues. Some of these assessments can be numerically based (e.g., exposure required for rectified diffusion). Others will be necessarily qualitative, due to lack of information. Each of the potential responses may or may not result in a stress response.

Direct tissue effects—Direct tissue responses to sound stimulation may range from tissue shearing (injury) to mechanical vibration with no resulting injury.

No tissue effects—The received sound is insufficient to cause either direct (mechanical) or indirect effects to tissues. No stress response occurs.

II. The Stress Response

The acoustic source is considered a potential stressor if, by its action on the animal, via auditory or non-auditory means, it may produce a stress response in the animal. The term ''stress'' has taken on an ambiguous meaning in the scientific literature, but with respect to the later discussions of allostasis and allostatic loading, the stress response will refer to an increase in energetic expenditure that results from exposure to the stressor and which is predominantly characterized by either the stimulation of the sympathetic nervous system (SNS) or the hypothalamic-pituitary-adrenal (HPA) axis (Reeder and Kramer, 2005). The SNS response to a stressor is immediate and acute and is characterized by the release of the catecholamine neurohormones norepinephrine and epinephrine (i.e., adrenaline). These hormones produce elevations in the heart and respiration rate, increase awareness, and increase the availability of glucose and lipids for energy. The HPA response is ultimately defined by increases in the secretion of the glucocorticoid steroid hormones, predominantly cortisol in mammals. The amount of increase in circulating glucocorticoids above baseline may be an indicator of the overall severity of a stress response (Hennessy *et al.*, 1979). Each component of the stress response is variable in time; e.g., adrenalines are released nearly immediately and are used or cleared by the system quickly, whereas cortisol levels may take long periods of time to return to baseline.

The presence and magnitude of a stress response in an animal depends on a number of factors. These include the animal's life history stage (e.g., neonate, juvenile, adult), the environmental conditions, reproductive or developmental state, and experience with the stressor. Not only will these factors be subject to individual variation, but they will also vary within an individual over time. In considering potential stress responses of marine mammals to acoustic stressors, each of these should be considered. For example, is the acoustic stressor in an area where animals engage in breeding activity? Are animals in the region resident and likely to have experience with the stressor (i.e., repeated exposures)? Is the region a foraging ground or are the animals passing through as transients? What is the ratio of young (naive) to old (experienced) animals in the population? It is unlikely that all such questions can be answered from empirical data; however, they should be addressed in any qualitative assessment of a potential stress response as based on the available literature.

The stress response may or may not result in a behavioral change, depending on the characteristics of the exposed animal. However, provided a stress response occurs, we assume that some contribution is made to the animal's allostatic load. Allostasis is the ability of an animal to maintain stability through change by adjusting its physiology in response to both predictable and unpredictable events (McEwen and Wingfield, 2003). The same hormones associated with the stress response vary naturally throughout an animal's life, providing support for particular life

history events (e.g., pregnancy) and predictable environmental conditions (e.g., seasonal changes). The allostatic load is the cumulative cost of allostasis incurred by an animal and is generally characterized with respect to an animal's energetic expenditure. Perturbations to an animal that may occur with the presence of a stressor, either biological (e.g., predator) or anthropogenic (e.g., construction), can contribute to the allostatic load (Wingfield, 2003). Additional costs are cumulative and additions to the allostatic load over time may contribute to reductions in the probability of achieving ultimate life history functions (e.g., survival, maturation, reproductive effort and success) by producing pathophysiological states (the conditions of disease or injury). The contribution to the allostatic load from a stressor requires estimating the magnitude and duration of the stress response, as well as any secondary contributions that might result from a change in behavior.

If the acoustic source does not produce tissue effects, is not perceived by the animal, or does not produce a stress response by any other means, we assume that the exposure does not contribute to the allostatic load. Additionally, without a stress response or auditory masking, it is assumed that there can be no behavioral change. Conversely, any immediate effect of exposure that produces an injury is assumed to also produce a stress response and contribute to the allostatic load.

III. Behavior

Changes in marine mammal behavior are expected to result from an acute stress response. This expectation is based on the idea that some sort of physiological trigger must exist to change any behavior that is already being performed. The exception to this rule is the case of auditory masking. The presence of a masking sound may not produce a stress response, but may interfere with the animal's ability to detect and discriminate biologically relevant signals. The inability to detect and discriminate biologically relevant signals hinders the potential for normal behavioral responses to auditory cues and is thus considered a behavioral change.

Impulsive sounds from explosions have very short durations as compared to other sounds like sonar or ship noise, which are more likely to produce auditory masking. Additionally the explosive sources analyzed in this document are used infrequently and the training events are typically of short duration. Therefore, the potential for auditory masking is unlikely.

Numerous behavioral changes can occur as a result of stress response. For each potential behavioral change, the magnitude in the change and the severity of the response needs to be estimated. Certain conditions, such as stampeding (i.e., flight response) or a response to a predator, might have a probability of resulting in injury. For example, a flight response, if significant enough, could produce a stranding event. Each disruption to a natural behavioral pattern (e.g., breeding or nursing) may need to be classified as Level B harassment. All behavioral disruptions have the potential to contribute to the allostatic load. This secondary potential is signified by the feedback from the collective behaviors to allostatic loading.

IV. Life Function

IV.1. Proximate Life Functions

Proximate life history functions are the functions that the animal is engaged in at the time of acoustic exposure. The disruption of these functions, and the magnitude of the disruption, is something that must be considered in determining how the ultimate life history functions are affected. Consideration of the magnitude of the effect to each of the proximate life history functions is dependent upon the life stage of the animal. For example, an animal on a breeding ground which is sexually immature will suffer relatively little consequence to disruption of breeding behavior when compared to an actively displaying adult of prime reproductive age.

IV.2. Ultimate Life Functions

The ultimate life functions are those that enable an animal to contribute to the population (or stock, or species, etc.). The impact to ultimate life functions will depend on the nature and magnitude of the perturbation to proximate life history functions. Depending on the severity of the response to the stressor, acute perturbations may have nominal to profound impacts on ultimate life functions. For example, unit-level use of sonar by a vessel transiting through an area that is utilized for foraging, but not for breeding, may disrupt feeding by exposed animals for a brief period of time. Because of the brevity of the perturbation, the impact to ultimate life functions may be negligible. By contrast, weekly training over a period of years may have a more substantial impact because the stressor is chronic. Assessment of the magnitude of the stress response from the chronic perturbation would require an understanding of how and whether animals acclimate to a specific, repeated stressor and whether chronic elevations in the stress response (e.g., cortisol levels) produce fitness deficits.

The proximate life functions are loosely ordered in decreasing severity of impact. Mortality (survival) has an immediate effect, in that no future reproductive success is feasible and there is no further addition to the population resulting from reproduction. Severe injuries may also lead to reduced survivorship (longevity) and prolonged alterations in behavior. The latter may further affect an animal's overall reproductive success and reproductive effort. Disruptions of breeding have an immediate impact on reproductive effort and may impact reproductive success. The magnitude of the effect will depend on the duration of the disruption and the type of behavior change that was provoked. Disruptions to feeding and migration can affect all of the ultimate life functions; however, the impacts to reproductive effort and success are not likely to be as severe or immediate as those incurred by mortality and breeding disruptions.

Explosive Ordnance Exposure Analysis

The underwater explosion from a weapon would send a shock wave and blast noise through the water, release gaseous by-products, create an oscillating bubble, and cause a plume of water to shoot up from the water surface. The shock wave and blast noise are of most concern to marine animals. The effects of an underwater explosion on a marine mammal depends on many factors, including the size, type, and depth of both the animal and the explosive charge; the depth of the water column; and the standoff distance between the charge and the animal, as well as the sound propagation properties of the environment. Potential impacts can range from brief effects (such as behavioral disturbance), tactile perception, physical discomfort, slight injury of the internal organs and the auditory system, to death of the animal (Yelverton *et al.*, 1973; O'Keeffe and Young, 1984; DoN, 2001). Non-lethal injury includes slight injury to internal organs and the auditory system; however, delayed lethality can be a result of individual or cumulative sublethal injuries (DoN, 2001). Immediate lethal injury would be a result of massive combined trauma to internal organs as a direct result of proximity to the point of detonation (DoN, 2001). Generally, the higher the level of impulse and pressure level

exposure, the more severe the impact to an individual.

Injuries resulting from a shock wave take place at boundaries between tissues of different density. Different velocities are imparted to tissues of different densities, and this can lead to their physical disruption. Blast effects are greatest at the gas-liquid interface (Landsberg, 2000). Gas-containing organs, particularly the lungs and gastrointestinal tract, are especially susceptible (Goertner, 1982; Hill, 1978; Yelverton *et al.*, 1973). In addition, gas-containing organs including the nasal sacs, larynx, pharynx, trachea, and lungs may be damaged by compression/expansion caused by the oscillations of the blast gas bubble (Reidenberg and Laitman, 2003). Intestinal walls can bruise or rupture, with subsequent hemorrhage and escape of gut contents into the body cavity. Less severe gastrointestinal tract injuries include contusions, petechiae (small red or purple spots caused by bleeding in the skin), and slight hemorrhaging (Yelverton *et al.*, 1973).

Because the ears are the most sensitive to pressure, they are the organs most sensitive to injury (Ketten, 2000). Sound-related damage associated with blast noise can be theoretically distinct from injury from the shock wave, particularly farther from the explosion. If an animal is able to hear a noise, at some level it can damage its hearing by causing decreased sensitivity (Ketten, 1995) (See *Assessment of Marine Mammal Response to Anthropogenic Sound* Section above). Sound-related trauma can be lethal or sublethal. Lethal impacts are those that result in immediate death or serious debilitation in or near an intense source and are not, technically, pure acoustic trauma (Ketten, 1995). Sublethal impacts include hearing loss, which is caused by exposures to perceptible sounds. Severe damage (from the shock wave) to the ears includes tympanic membrane rupture, fracture of the ossicles, damage to the cochlea, hemorrhage, and cerebrospinal fluid leakage into the middle ear. Moderate injury implies partial hearing loss due to tympanic membrane rupture and blood in the middle ear. Permanent hearing loss also can occur when the hair cells are damaged by one very loud event, as well as by prolonged exposure to a loud noise or chronic exposure to noise. The level of impact from blasts depends on both an animal's location and, at outer zones, on its sensitivity to the residual noise (Ketten, 1995).

The exercises that use explosives in this request include: FIREX with IMPASS, MISSILEX, and MINEX. Table 5 summarizes the number of events (per year by season) and specific areas where each occurs for each type of explosive ordnance used. For most of the operations, there is no difference in how many events take place between the different seasons. Fractional values are a result of evenly distributing the annual totals over the four seasons. For example, there are 6 Hellfire events per year that can take place in sub-areas 16 and 17 during any season, so there are 1.5 events modeled for each season.

TABLE 5—NUMBER OF EXPLOSIVE EVENTS WITHIN THE CHERRY POINT RANGE COMPLEX

Sub-area *	Ordnance	Winter	Spring	Summer	Fall	Annual totals
	MISSILEX					22
16 & 17	Hellfire	1.5	1.5	1.5	1.5	
16 & 17	TOW	2	2	2	2	
	FIREX with IMPASS					2
13 & 14	5″ rounds	.25	.25	.25	.25	
4 & 5	5″ rounds	.25	.25	.25	.25	
	MINEX					20
UNDET	20 LB	5	5	5	5	

* See Figure 1 of the LOA application for the location of sub-areas.

Definition of Harassment

As mentioned previously, with respect to military readiness activities, Section 3(18)(B) of the MMPA defines ''harassment'' as: (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].

Level B Harassment

Of the potential effects that were described in the *Assessment of Marine Mammal Response to Anthropogenic Sound* and the *Explosive Ordnance Exposure Analysis* sections, the following are the types of effects that fall into the Level B Harassment category:

Behavioral Harassment—Behavioral disturbance that rises to the level described in the definition above, when resulting from exposures to underwater detonations, is considered Level B Harassment. Some of the lower level physiological stress responses discussed in the *Assessment of Marine Mammal Response to Anthropogenic Sound* section will also likely co-occur with the predicted harassments, although these responses are more difficult to detect and fewer data exist relating these responses to specific received levels of sound. When Level B Harassment is predicted based on estimated behavioral responses, those takes may have a stress-related physiological component as well.

Acoustic Masking and Communication Impairment—Acoustic masking is considered Level B Harassment as it can disrupt natural behavioral patterns by interrupting or limiting the marine mammal's receipt or transmittal of important information or environmental cues.

TTS—As discussed previously, TTS can affect how an animal behaves in response to the environment, including conspecifics, predators, and prey. The following physiological mechanisms are thought to play a role in inducing auditory fatigue: effects to sensory hair cells in the inner ear that reduce their sensitivity, modification of the chemical environment within the sensory cells, residual muscular activity in the middle ear, displacement of certain inner ear membranes, increased blood flow, and post-stimulatory reduction in both efferent and sensory neural output. Ward (1997) suggested that when these effects result in TTS rather than PTS, they are within the normal bounds of physiological variability and tolerance

and do not represent a physical injury. Additionally, Southall *et al.* (2007) indicate that although PTS is a tissue injury, TTS is not because the reduced hearing sensitivity following exposure to intense sound results primarily from fatigue, not loss, of cochlear hair cells and supporting structures and is reversible. Accordingly, NMFS classifies TTS (when resulting from exposure to underwater detonations) as Level B Harassment, not Level A Harassment (injury).

Level A Harassment

Of the potential effects that were described in the *Assessment of Marine Mammal Response to Anthropogenic Sound* section, the following are the types of effects that fall into the Level A Harassment category:

PTS—PTS is irreversible and considered to be an injury. PTS results from exposure to intense sounds that cause a permanent loss of inner or outer cochlear hair cells or exceed the elastic limits of certain tissues and membranes in the middle and inner ears and result in changes in the chemical composition of the inner ear fluids.

Physical Disruption of Tissues Resulting from Explosive Shock Wave—Physical damage of tissues resulting from a shock wave (from an explosive detonation) is classified as an injury. Blast effects are greatest at the gas-liquid interface (Landsberg, 2000) and gas-containing organs, particularly the lungs and gastrointestinal tract, are especially susceptible to damage (Goertner, 1982; Hill 1978; Yelverton *et al.*, 1973). Nasal sacs, larynx, pharynx, trachea, and lungs may be damaged by compression/expansion caused by the oscillations of the blast gas bubble (Reidenberg and Laitman, 2003). Severe damage (from the shock wave) to the ears can include tympanic membrane rupture, fracture of the ossicles, damage to the cochlea, hemorrhage, and cerebrospinal fluid leakage into the middle ear.

Acoustic Take Criteria

For the purposes of an MMPA incidental take authorization, three types of take are identified: Level B Harassment; Level A Harassment; and mortality (or serious injury leading to mortality). The categories of marine mammal responses (physiological and behavioral) that fall into the two harassment categories were described in the previous section.

Because the physiological and behavioral responses of the majority of the marine mammals exposed to underwater detonations cannot be detected or measured, a method is needed to estimate the number of individuals that will be taken, pursuant to the MMPA, based on the proposed action. To this end, NMFS uses an acoustic criteria that estimate at what received level (when exposed to explosive detonations) Level B Harassment, Level A Harassment, and mortality (for explosives) of marine mammals would occur. The acoustic criteria for Underwater Detonations are discussed.

Thresholds and Criteria for Impulsive Sound

Criteria and thresholds for estimating the exposures from a single explosive activity on marine mammals were established for the Seawolf Submarine Shock Test Final Environmental Impact Statement (FEIS) (''Seawolf'') and subsequently used in the USS Winston S. Churchill (DDG–81) Ship Shock FEIS (''Churchill'') (DoN, 1998 and 2001a). NMFS adopted these criteria and thresholds in its final rule on unintentional taking of marine animals occurring incidental to the shock testing (NMFS, 2001a). Since the ship-shock events involve only one large explosive at a time, additional assumptions were made to extend the approach to cover multiple explosions for FIREX (with IMPASS). In addition, this section reflects a revised acoustic criterion for small underwater explosions (i.e., 23 pounds per square inch [psi] instead of previous acoustic criteria of 12 psi for peak pressure over all exposures), which is based on the final rule issued to the Air Force by NMFS (NMFS, 2005c).

I.1. Thresholds and Criteria for Injurious Physiological Impacts

I.1.a. Single Explosion

For injury, NMFS uses dual criteria: eardrum rupture (i.e. tympanic-membrane injury) and onset of slight lung injury. These criteria are considered indicative of the onset of injury. The threshold for tympanic-membrane (TM) rupture corresponds to a 50 percent rate of rupture (i.e. 50 percent of animals exposed to the level are expected to suffer TM rupture). This value is stated in terms of an Energy Flux Density Level (EL) value of 1.17 inch pounds per square inch (in-lb/in2), approximately 205 dB re 1 microPa^2-sec.

The threshold for onset of slight lung injury is calculated for a small animal (a dolphin calf weighing 26.9 lbs), and is given in terms of the ''Goertner modified positive impulse,'' indexed to 13 psi-msec (DoN, 2001). This threshold is conservative since the positive impulse needed to cause injury is proportional to animal mass, and therefore, larger animals require a higher impulse to cause the onset of injury. This analysis assumed the marine species populations were 100 percent small animals. The criterion with the largest potential impact range (most conservative), either TM rupture (energy threshold) or onset of slight lung injury (peak pressure), will be used in the analysis to determine Level A exposures for single explosive events.

For mortality, NMFS uses the criterion corresponding to the onset of extensive lung injury. This is conservative in that it corresponds to a 1 percent chance of mortal injury, and yet any animal experiencing onset severe lung injury is counted as a lethal exposure. For small animals, the threshold is given in terms of the Goertner modified positive impulse, indexed to 30.5 psi-msec. Since the Goertner approach depends on propagation, source/animal depths, and animal mass in a complex way, the actual impulse value corresponding to the 30.5 psi-msec index is a complicated calculation. To be conservative, the analysis used the mass of a calf dolphin (at 26.9 lbs) for 100 percent of the populations.

I.1.b. Multiple Explosions

For this analysis, the use of multiple explosions only applies to FIREX (with IMPASS). Since FIREX require multiple explosions, the Churchill approach had to be extended to cover multiple sound events at the same training site. For multiple exposures, accumulated energy over the entire training time is the natural extension for energy thresholds since energy accumulates with each subsequent shot (detonation); this is consistent with the treatment of multiple arrivals in Churchill. For positive impulse, it is consistent with Churchill to use the maximum value over all impulses received.

I.2. Thresholds and Criteria for Non-Injurious Physiological Effects

The NMFS' criterion for non-injurious harassment is TTS—a slight, recoverable loss of hearing sensitivity (DoN, 2001). For this assessment, there are dual criteria for TTS, an energy threshold and a peak pressure threshold. The criterion with the largest potential impact range (most conservative) either the energy or peak pressure threshold, will be used in the analysis to determine Level B TTS exposures.

I.2.a. Single Explosion—TTS-Energy Threshold

The first threshold is a 182 dB re 1 microPa^2-sec maximum energy flux

density level in any ⅓-octave band at frequencies above 100 Hertz (Hz) for toothed whales and in any ⅓-octave band above 10 Hz for baleen whales. For large explosives, as in the case of the Churchill FEIS, frequency range cutoffs at 10 and 100 Hz make a difference in the range estimates. For small explosives (<1,500 lb NEW), as what was modeled for this analysis, the spectrum of the shot arrival is broad, and there is essentially no difference in impact ranges for toothed whales or baleen whales.

The TTS energy threshold for explosives is derived from the Space and Naval Warfare Systems Center (SSC) pure-tone tests for TTS (Schlundt *et al.*, 2000; Finneran and Schlundt, 2004). The pure-tone threshold (192 dB as the lowest value) is modified for explosives by (a) interpreting it as an energy metric, (b) reducing it by 10 dB to account for the time constant of the mammal ear, and (c) measuring the energy in ⅓-octave bands, the natural filter band of the ear. The resulting threshold is 182 dB re 1 microPa^2-sec in any ⅓-octave band. The energy threshold usually dominates and is used in the analysis to determine potential Level B exposures for single explosion ordnance.

I.2.b. Single Explosion—TTS-Peak Pressure Threshold

The second threshold applies to all species and is stated in terms of peak pressure at 23 psi (about 225 dB re 1 microPa). This criterion was adopted for Precision Strike Weapons (PSW) Testing and Training by Eglin Air Force Base in the Gulf of Mexico (NMFS, 2005b). It is important to note that for small shots near the surface (such as in this analysis), the 23-psi peak pressure threshold generally will produce longer impact ranges than the 182-dB energy metric. Furthermore, it is not unusual for the TTS impact range for the 23-psi pressure metric to actually exceed the without-TTS (behavioral change without onset of TTS) impact range for the 177-dB energy metric.

I.2.c. Multiple Explosions—TTS

For multiple explosions, accumulated energy over the entire training time is the natural extension for energy thresholds since energy accumulates with each subsequent shot/detonation. This is consistent with the energy argument in Churchill. For peak pressure, it is consistent with Churchill to use the maximum value over all impulses received.

I.3. Thresholds and Criteria for Behavioral Effects

I.3.a. Single Explosion

For a single explosion, to be consistent with Churchill, TTS is the criterion for Level B harassment. In other words, because behavioral disturbance for a single explosion is likely to be limited to a short-lived startle reaction, use of the TTS criterion is considered sufficient protection and therefore behavioral effects (Level B behavioral harassment without onset of TTS) are not expected for single explosions.

I.3.b. Multiple Explosions—Without TTS

For this analysis, the use of multiple explosions only applies to FIREX (with IMPASS). Because multiple explosions would occur within a discrete time period, a new acoustic criterion-behavioral disturbance (without TTS)—is used to account for behavioral effects significant enough to be judged as harassment, but occurring at lower noise levels than those that may cause TTS.

The threshold is based on test results published in Schlundt *et al.* (2000), with derivation following the approach of the Churchill FEIS for the energy-based TTS threshold. The original Schlundt *et al.* (2000) data and the report of Finneran and Schlundt (2004) are the basis for thresholds for behavioral disturbance (without TTS). As reported by Schlundt *et al.* (2000), instances of altered behavior generally began at lower exposures than those causing TTS; however, there were many instances when subjects exhibited no altered behavior at levels above the onset-TTS levels. Regardless of reactions at higher or lower levels, all instances of altered behavior were included in the statistical summary.

The behavioral disturbance (without TTS) threshold for tones is derived from the SSC tests, and is found to be 5 dB below the threshold for TTS, or 177 dB re 1 microPa^2-sec maximum energy flux density level in any ⅓-octave band at frequencies above 100 Hz for toothed whales and in any ⅓-octave band above 10 Hz for baleen whales. As stated previously for TTS, for small explosives (<1,500 lb NEW), as what was modeled for this analysis, the spectrum of the shot arrival is broad, and there is essentially no difference in impact ranges for whales. However, the TTS pressure criteria (23 psi) impact range for FIREX with IMPASS can, especially in deeper water, result in a longer impact range than the behavioral disturbance (without TTS) criteria impact range.

II. Summary of Thresholds and Criteria for Impulsive Sounds

Table 6 summarizes the effects, criteria, and thresholds used in the assessment for impulsive sounds. The criteria for behavioral effects without physiological effects used in this analysis are based on use of multiple explosives that only take place during a FIREX (w/IMPASS) event.

TABLE 6—EFFECTS, CRITERIA, AND THRESHOLDS FOR IMPULSIVE SOUNDS

Effect	Criteria	Metric	Threshold	Effect
Mortality	Onset of Extensive Lung Injury.	Goertner modified positive impulse.	indexed to 30.5 psi-msec (assumes 100 percent small animal at 26.9 lbs).	Mortality.
Injurious Physiological	50% Tympanic Membrane Rupture.	Energy flux density	1.17 in-lb/in^2 (about 205 dB re 1 microPa^2-sec).	Level A.
Injurious Physiological	Onset Slight Lung Injury	Goertner modified positive impulse.	indexed to 13 psi-msec (assumes 100 percent small animal at 26.9 lbs).	Level A.
Non-injurious Physiological	TTS	Greatest energy flux density level in any ⅓-octave band (> 100 Hz for toothed whales and > 10 Hz for baleen whales)—for total energy over all exposures.	182 dB re 1 microPa^2-sec	Level B.
Non-injurious Physiological	TTS	Peak pressure over all exposures.	23 psi	Level B.

TABLE 6—EFFECTS, CRITERIA, AND THRESHOLDS FOR IMPULSIVE SOUNDS—Continued

Effect	Criteria	Metric	Threshold	Effect
Non-injurious Behavioral	Multiple Explosions Without TTS.	Greatest energy flux density level in any 1/3-octave (> 100 Hz for toothed whales and > 10 Hz for baleen whales)—for total energy over all exposures (multiple explosions only).	177 dB re 1 microPa^2-sec	Level B.

The criteria for mortality, Level A Harassment, and Level B Harassment resulting from explosive detonations were initially developed for the Navy's Sea Wolf and Churchill ship-shock trials and have not changed since other MMPA authorizations issued for explosive detonations. The criteria, which are applied to cetaceans and pinnipeds are summarized in Table 11. Additional information regarding the derivation of these criteria is available in the Navy's FEIS for the Cherry Point Range Complex and in the Navy's CHURCHILL FEIS (U.S. Department of the Navy, 2001).

Acoustic Environment

Sound propagation (the spreading or attenuation of sound) in the oceans of the world is affected by several environmental factors: water depth, variations in sound speed within the water column, surface roughness, and the geo-acoustic properties of the ocean bottom. These parameters can vary widely with location.

Four types of data are used to define the acoustic environment for each analysis site:

Seasonal Sound Velocity Profiles (SVP)—Plots of propagation speed (velocity) as a function of depth, or SVPs, are a fundamental tool used for predicting how sound will travel. Seasonal SVP averages were obtained for each training area.

Seabed Geo-acoustics—The type of sea floor influences how much sound is absorbed and how much sound is reflected back into the water column.

Wind Speeds—Several environmental inputs, such as wind speed and surface roughness, are necessary to model acoustic propagation in the prospective training areas.

Bathymetry data—Bathymetry data are necessary to model acoustic propagation and were obtained for each of the training areas.

Acoustic Effects Analysis

The acoustic effects analysis presented in the following sections is summarized for each major type of exercise. A more in-depth effects analysis is in Appendix A of the LOA application and the Addendum.

1. FIREX (With IMPASS)

Modeling was completed for a 5-in. round, 8-lb NEW charge exploding at a depth of 1 ft (0.3 m). The analytical approach begins using a high-fidelity acoustic model to estimate energy in each 5-in explosive round. Impact areas are calculated by summing the energy from multiple explosions over a firing exercise (FIREX) mission, and determining the impact area based on the thresholds and criteria. Level B exposures were determined based on the 177 dB re 1 microPa^2-sec (energy) criteria for behavioral disturbance (without TTS) due to the use of multiple explosions.

Impact areas for a full FIREX (with IMPASS) event must account for the time and space distribution of 39 explosions, as well as the movement of animals over the several hours of the exercise. The total impact area for the 39-shot event is calculated as the sum of small impact areas for seven FIREX missions (each with four to six rounds fired) and one pre-FIREX action (with six rounds fired). Table 7 shows the Zone of Influence (ZOI) results of the model estimation.

TABLE 7—ESTIMATED ZOIS (KM^2) FOR A SINGLE FIREX (WITH IMPASS) EVENT

Area *	Estimated ZOI @ 177 dB re 1 μPa^2-sec (multiple detonations only)	Estimated ZOI @ 23 psi	Estimated ZOI @ 205 dB re 1 μPa^2-sec or 13 psi
4 & 5	NA**	3.7387	0.18522
13 & 14	NA**	3.7387	0.18522

* Please see Figure 1 of the LOA application for the locations of these areas.
** In this area, which occurs in deeper water, the 23 psi criteria dominates over the 177 dB re 1 microPa^2-sec behavioral disturbance criteria and therefore was used in the analysis.

The ZOI, when multiplied by the animal densities and the total number of events (Table 5), provides the exposure estimates for that animal species for the nominal exercise case of 39 5-in explosive rounds. The potential effects would occur within a series of small impact areas associated with the pre-calibration rounds and missions spread out over a period of several hours. Additionally, target locations are changed from event to event and because of the time lag between events, it is highly unlikely, even if a marine mammal were present (not accounting for mitigation), that the marine mammal would be within the small exposure zone for more than one event.

FIREX with IMPASS is restricted to two locations in the Cherry Point Range Complex. In addition to other mitigation measures, dedicated lookouts would be onboard the ship monitoring the target area for marine mammals before the exercise, during the deployment of the IMPASS array, and during the return to firing position. Ships will not fire on the target until the area is cleared and will suspend the exercise if any marine mammals enter the buffer area. Due to safety reasons, the buffer zone must remain clear of all types of platforms. During the actual firing of the weapon, the participants involved must be able

to observe the intended ordnance impact area to ensure the area is free of range transients, however, this observation would be conducted from the firing position or other safe distance. Due to the distance between the firing position and the buffer zone, lookouts are only expected to visually detect breaching whales, whale blows, and large pods of dolphins and porpoises. Implementation of mitigation measures like these reduce the likelihood of exposure and potential effects in the ZOI.

2. MINEX

The Comprehensive Acoustic System Simulation/Gaussian Ray Bundle (OAML, 2002) model, modified to account for impulse response, shock-wave waveform, and nonlinear shock-wave effects, was run for acoustic-environmental conditions derived from the Oceanographic and Atmospheric Master Library (OAML) standard databases. The explosive source was modeled with standard similitude formulas, as in the Churchill FEIS. Because all the sites are shallow (less than 50 m), propagation model runs were made for bathymetry in the range from 10 m to 40 m.

Estimated ZOIs varied as much within a single area as from one area to another, which had been the case for the Virtual At Sea Training/IMPASS (DoN, 2003). There was, however, little seasonal dependence. As a result, the ZOIs are stated as mean values with a percentage variation. Generally, in the case of ranges determined from energy metrics, as the depth of water increases, the range shortens. The single explosion TTS-energy criterion (182 dB re 1 microPa^2-sec) was dominant over the pressure criteria and therefore used to determine the ZOI for the Level B exposure analysis. Table 8 shows the ZOI results of the model estimation.

The total ZOI, when multiplied by the animal densities and total number of events (Table 5), provides the exposure estimates for that animal species for each specified charge. Because of the time lag between detonations, it is highly unlikely, even if a marine mammal were present (not accounting for mitigation), that the marine mammal would be within the small exposure zone for more than one detonation. The underwater detonations are restricted to one area (UNDET Area, Onslow Bay) (Figure 1 of the LOA application), observers would survey the target area for marine mammals for 30 minutes prior through 30 minutes post detonation. Detonations will be suspended if a marine mammal enters the Zone of Influence and will only restart after the area has been clear for a full 30 minutes. Implementation of mitigation measures like these reduce the likelihood of exposure and potential effects in the ZOI.

TABLE 8—ESTIMATED ZOIS (KM^2) FOR MINEX

Threshold	ZOIs
	20-lb shot
Level A ZOI @ 13 psi	0.13 km^2 ± 10%
Level B ZOI @ 182 dB re 1 microPa^2-sec.	0.8 km^2 ± 25%

3. MISSILEX (Hellfire and TOW)

Modeling was completed for three explosive missiles involved in MISSILEX: each assumed detonation at 1-m (3.3 ft) depth. The NEW used in simulations of the Hellfire and TOW missiles are 8 lbs and 15.33 lbs, respectively. The single explosion TTS-energy criterion (182 dB re 1 microPa^2-sec) was used to determine the ZOI for the Level B exposure analysis. Table 9 shows the ZOI results of the model estimation. The total ZOI, when multiplied by the animal densities and total number of events (Table 5), provides the exposure estimates for that animal species for each specified missile. Because of the time lag between detonations, it is highly unlikely, even if a marine mammal were present (not accounting for mitigation), that the marine mammal would be within the small exposure zone for more than one detonation. Ships will not fire on the target until the area is clear of marine mammals, and will suspend the exercise if any enter the buffer area. Implementation of mitigation measures like these reduce the likelihood of exposure and potential effects in the ZOI.

TABLE 9—ESTIMATED ZOIS (KM^2) FOR MISSILEX

Area	Ordnance	Estimated ZOI @ 182 dB re 1 microPa2-s or 23 psi				Estimated ZOI @ 205 dB re 1 microPa2-s or 13 psi				Estimated ZOI @ 30.5 psi			
		Win	Spr	Sum	Fall	Win	Spr	Sum	Fall	Win	Spr	Sum	Fall
16 & 17	Hellfire	0.31	0.31	0.31	0.31	0.04	0.04	0.04	0.04	<0.01	<0.01	<0.01	<0.01
16 & 17	TOW	0.39	0.39	0.35	0.39	0.04	0.04	0.04	0.04	<0.01	<0.01	<0.01	<0.01

Summary of Potential Exposures From Explosive Ordnance Use

Explosions that occur in the OPAREA are associated with training exercises that use explosive ordnance, which include missiles (MISSILEX), 5-in. explosive naval gun shells with IMPASS (FIREX), and underwater detonations associated with Mine Neutralization training (MINEX). Explosive ordnance use is limited to specific training areas.

An explosives analysis was conducted to estimate the number of marine mammals that could be exposed to impacts from explosions by the Navy. Table 10 provides a summary of the explosive modeling analysis conducted by the Navy. Fin, humpback whales, and sperm whales will have high detection rates at the surface because of their large body size and pronounced blows. Because of large group sizes, it is likely that lookouts would detect Atlantic spotted dolphins, bottlenose dolphins, Clymene dolphins, common dolphins, pantropical spotted dolphins, Risso's dolphins, rough-toothed dolphins, and striped dolphins.

Exposure estimates could not be calculated for several species (blue whale, sei whale, Bryde's whale, killer whale, pygmy killer whale, false killer whale, melon-headed whale, spinner dolphin, Fraser's dolphin, and harbor porpoise) because density estimates could not be calculated due to the limited available data for these species. Lack of density estimates reflect the paucity of sighting data for these species in the Study Area. It is assumed that fewer or no sightings result from low numbers of animals in the area. Consequently, because these species' presence in the Study Area is rare, NMFS does not expect these animals to be exposed to explosive ordnance. Implementation of mitigation measures will reduce the likelihood of exposure

and potential effects should any of these species occur in the OPAREA.

Although exposure of marine mammals based on the Navy's modeling shows that only two individuals of Atlantic spotted dolphins would be taken by Level B behavioral harassment, because of the relatively high abundance of several other species (Atlantic spotted dolphins, bottlenose dolphins, common dolphins, striped dolphins, and Risso's dolphins) in the proposed action area (Waring *et al.*, 2008) and their aggregation in large groups, NMFS considers that additional takes of these five species by Level B behavioral harassment are possible. Therefore, NMFS proposes to authorize additional takes for these species (see Take Calculations section below).

TABLE 10—SUMMARY OF POTENTIAL EXPOSURES FROM EXPLOSIVE ORDNANCE (PER YEAR) FOR MARINE MAMMALS IN THE CHERRY POINT RANGE COMPLEX BY THE NAVY MODELING

Species/training operation	Potential exposures @ 177 dB re 1 microPa2-s (multiple detonations only)	Potential exposures @ 182 dB re 1 microPa2-s or 23 psi	Potential exposures @ 205 dB re 1 microPa2-s or 13 psi	Potential exposures @ 30.5 psi
Fin whale:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Humpback whale:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
North Atlantic right whale:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Sperm whale:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Atlantic Spotted dolphin:				
MISSILEX training	NA	1	0	0
FIREX training	0	NA	0	0
MINEX training	NA	1	0	0
Total Exposures	0	2	0	0
Beaked whale:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Bottlenose dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Clymene dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Common dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Kogia spp.:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0

TABLE 10—SUMMARY OF POTENTIAL EXPOSURES FROM EXPLOSIVE ORDNANCE (PER YEAR) FOR MARINE MAMMALS IN THE CHERRY POINT RANGE COMPLEX BY THE NAVY MODELING—Continued

Species/training operation	Potential exposures @ 177 dB re 1 microPa2-s (multiple detonations only)	Potential exposures @ 182 dB re 1 microPa2-s or 23 psi	Potential exposures @ 205 dB re 1 microPa2-s or 13 psi	Potential exposures @ 30.5 psi
Total Exposures	0	0	0	0
Minke whale:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Pantropical spotted dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Pilot whales:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Risso's dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Rough-toothed dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0
Striped dolphin:				
MISSILEX training	NA	0	0	0
FIREX training	0	NA	0	0
MINEX training	NA	0	0	0
Total Exposures	0	0	0	0

Note: Events were either modeled for 177 dB re 1 microPa^2-sec due to multiple detonations (FIREX with IMPASS) or modeled for 182 dB re 1 microPa^2-sec or 23 psi due to single detonations (MISSILEX and MINEX). Therefore, for FIREX the NA refers to the criteria that were less dominant and therefore not used in the analysis. For MISSILEX and MINEX the NA refers to the fact that these events are not multiple detonations and therefore not modeled at 177 dB re 1 microPa^2-sec.

VI. Potential Effects of Exposures to Explosives

Effects from exposure to explosives vary depending on the level of exposure. Animals exposed to levels that constitute MMPA Level B harassment may experience a behavioral disruption from the use of explosive ordnance. Behavioral responses can include shorter surfacings, shorter dives, fewer blows per surfacing, longer intervals between blows (breaths), ceasing or increasing vocalizations, shortening or lengthening vocalizations, and changing frequency or intensity of vocalizations (NRC, 2005). However, it is not known how these responses relate to significant effects (e.g., long-term effects or population consequences) (NRC, 2005). In addition, animals exposed to levels that constitute MMPA Level B harassment may experience a temporary threshold shift (TTS), which may result in a slight, recoverable loss of hearing sensitivity (DoN, 2001).

Exposures that reach Level A harassment may result in long-term injuries such as permanent threshold shift (PTS). The resulting injuries may limit an animal's ability to find food, communicate with other animals, and/or interpret the environment around them. Impairment of these abilities can decrease an individual's chance of survival or impact their ability to successfully reproduce. Level A harassment will have a long-term impact on an exposed individual.

Mortality of an animal would remove the animal entirely from the population as well as eliminate any future reproductive potential.

Based on the modeling conducted by the Navy, marine mammals that could be potentially exposed to explosive ordnance as a result of the Cherry Point Range Complex training activities would be limited to Level B behavioral harassment, specifically, two individuals of Atlantic spotted dolphins.

Though the Navy's model has shown that it is unlikely more than two individuals of Atlantic spotted dolphins would be affected by the proposed Range Complex training activities, a further analysis by NMFS revealed that additional species may be taken by the Navy's exercises. For example, due to the higher abundances of Atlantic spotted, bottlenose, common, striped, and Risso's dolphins in the Cherry Point Range Complex Study Area, and the fact

that these species tend to congregate in relatively large groups, there is an increased chance they too, may be taken by the Navy's exercises if not detected in advance by Navy watchstanders or lookouts. Therefore, NMFS proposes to authorize take, by Level B harassment of these species incidental to the Navy's Cherry Point Range Complex training exercises. NMFS preliminarily concludes that takes due to explosive ordnance and underwater detonations could result in short-term behavioral harassment of a limited number (i.e., 20 takes each) of Atlantic spotted, bottlenose, common, striped, and Risso's dolphins annually. There would be no mortality or injury to these marine mammal species; therefore, the proposed Navy training activities would not affect the annual rates of recruitment or survival of these species, or affect the population levels of these species. Moreover, take by Level B behavioral harassment of 20 individuals of each of these species per year would likewise have no effect on annual rates or recruitment or survival or affect their population levels. The population levels of each of these species are healthy and short-term behavioral harassment would result in minor effects, if any, to the individuals and would have no lasting effect on the species (Waring *et al.*, 2008). The mitigation measures presented below would further reduce the potential for exposures.

Proposed Mitigation Measures

In order to issue an incidental take authorization (ITA) under Section 101(a)(5)(A) of the MMPA, NMFS must 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.'' The National Defense Authorization Act (NDAA) of 2004 amended the MMPA as it relates to military-readiness activities and the incidental take authorization 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 Cherry Point Range Complex LOA application are considered military readiness activities.

In addition, any mitigation measure prescribed by NMFS should be known to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

(a) Avoidance or minimization of injury or death of marine mammals wherever possible (goals b, c, and d may contribute to this goal).

(b) A reduction in the numbers of marine mammals (total number or number at a biologically important time or location) exposed to received levels of underwater detonations or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing harassment takes only).

(c) A reduction in the number of times (total number or number at biologically important time or location) individuals would be exposed to received levels of underwater detonations or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing harassment takes only).

(d) A reduction in the intensity of exposures (either total number or number at biologically important time or location) to received levels of underwater detonations or other activities expected to result in the take of marine mammals (this goal may contribute to a, above, or to reducing the severity of harassment takes only).

(e) A reduction in adverse effects to marine mammal habitat, paying special attention to the food base, activities that block or limit passage to or from biologically important areas, permanent destruction of habitat, or temporary destruction/disturbance of habitat during a biologically important time.

(f) For monitoring directly related to mitigation—an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation (shut-down zone, etc.).

NMFS worked with the Navy and identified potential practicable and effective mitigation measures, which included a careful balancing of the likely benefit of any particular measure to the marine mammals with the likely effect of that measure on personnel safety, practicality of implementation, and impact on the ''military-readiness activity''. These mitigation measures are listed below.

General Maritime Measures

The mitigation measures presented below would be taken by Navy personnel on a regular and routine basis. These are routine measures and are considered ''Standard Operating Procedures.''

I. Personnel Training—Lookouts

The use of shipboard lookouts is a critical component of all Navy standard operating procedures. Navy shipboard lookouts (also referred to as ''watchstanders'') are qualified and experienced observers of the marine environment. Their duties require that they report all objects sighted in the water to the Officer of the Deck (OOD) (e.g., trash, a periscope, marine mammals, sea turtles) and all disturbances (e.g., surface disturbance, discoloration) that may be indicative of a threat to the vessel and its crew. There are personnel serving as lookouts on station at all times (day and night) when a ship or surfaced submarine is moving through the water.

For the past few years, the Navy has implemented marine mammal spotter training for its bridge lookout personnel on ships and submarines. This training has been revamped and updated as the Marine Species Awareness Training (MSAT) and is provided to all applicable units. The lookout training program incorporates MSAT, which addresses the lookout's role in environmental protection, laws governing the protection of marine species, Navy stewardship commitments, and general observation information, including more detailed information for spotting marine mammals. MSAT may also be viewed on-line at *https://portal.navfac.navy.mil/go/msat*.

1. All bridge personnel, Commanding Officers, Executive Officers, officers standing watch on the bridge, maritime patrol aircraft aircrews, and Mine Warfare (MIW) helicopter crews will complete MSAT.

2. Navy lookouts would undertake extensive training to qualify as a watchstander in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

3. Lookout training will include on-the-job instruction under the supervision of a qualified, experienced watchstander. Following successful completion of this supervised training period, lookouts will complete the Personal Qualification Standard Program, certifying that they have demonstrated the necessary skills (such as detection and reporting of partially submerged objects).

4. Lookouts will be trained in the most effective means to ensure quick and effective communication within the command structure to facilitate implementation of protective measures if marine species are spotted.

5. Surface lookouts would scan the water from the ship to the horizon and

be responsible for all contacts in their sector. In searching the assigned sector, the lookout would always start at the forward part of the sector and search aft (toward the back). To search and scan, the lookout would hold the binoculars steady so the horizon is in the top third of the field of vision and direct the eyes just below the horizon. The lookout would scan for approximately five seconds in as many small steps as possible across the field seen through the binoculars. They would search the entire sector in approximately five-degree steps, pausing between steps for approximately five seconds to scan the field of view. At the end of the sector search, the glasses would be lowered to allow the eyes to rest for a few seconds, and then the lookout would search back across the sector with the naked eye.

II. Operating Procedures & Collision Avoidance

1. Prior to major exercises, a Letter of Instruction, Mitigation Measures Message or Environmental Annex to the Operational Order will be issued to further disseminate the personnel training requirement and general marine species mitigation measures.

2. Commanding Officers will make use of marine species detection cues and information to limit interaction with marine species to the maximum extent possible consistent with safety of the ship according to the proposed mitigation and monitoring measures.

3. While underway, surface vessels will have at least two lookouts with binoculars; surfaced submarines will have at least one lookout with binoculars. Lookouts already posted for safety of navigation and man-overboard precautions may be used to fill this requirement. As part of their regular duties, lookouts will watch for and report to the OOD the presence of marine mammals.

4. Personnel on lookout will employ visual search procedures employing a scanning method in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

5. After sunset and prior to sunrise, lookouts will employ Night Lookouts Techniques in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

6. While in transit, personnel aboard naval vessels will be alert at all times, use extreme caution, and proceed at a ''safe speed'' (the minimum speed at which mission goals or safety will not be compromised) so that the vessel can take proper and effective action to avoid a collision with any marine animal and can be stopped within a distance appropriate to the prevailing circumstances and conditions.

7. When whales have been sighted in the area, Navy vessels will increase vigilance and shall implement measures to avoid collisions with marine mammals and avoid activities that might result in close interaction of naval assets and marine mammals. Actions shall include changing speed and/or direction and are dictated by environmental and other conditions (e.g., safety, weather).

8. Naval vessels will maneuver to keep at least 500 yds (460 m) away from any observed whale and avoid approaching whales head-on. This requirement does not apply if a vessel's safety is threatened, such as when change of course will create an imminent and serious threat to a person, vessel, or aircraft, and to the extent vessels are restricted in their ability to maneuver. Restricted maneuverability includes, but is not limited to, situations when vessels are engaged in dredging, submerged operations, launching and recovering aircraft or landing craft, minesweeping operations, replenishment while underway and towing operations that severely restrict a vessel's ability to deviate course. Vessels will take reasonable steps to alert other vessels in the vicinity of the whale.

9. Where feasible and consistent with mission and safety, vessels will avoid closing to within 200 yds (183 m) of marine mammals other than whales (whales addressed above).

10. Floating weeds, algal mats, Sargassum rafts, clusters of seabirds, and jellyfish are good indicators of marine mammal presence. Therefore, increased vigilance in watching for marine mammals will be taken where these conditions exist.

11. Navy aircraft participating in exercises at sea will conduct and maintain, when operationally feasible and safe, surveillance for marine species of concern as long as it does not violate safety constraints or interfere with the accomplishment of primary operational duties described in the Navy's LOA application. Marine mammal detections will be immediately reported to assigned Aircraft Control Unit for further dissemination to ships in the vicinity of the marine species as appropriate where it is reasonable to conclude that the course of the ship will likely result in a closing of the distance to the detected marine mammal.

12. All vessels will maintain logs and records documenting training operations should they be required for event reconstruction purposes. Logs and records will be kept for a period of 30 days following completion of a major training exercise.

Coordination and Reporting Requirements

The Navy will coordinate with the local NMFS Stranding Coordinator for any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during training activities or within 24 hours after completion of training activities. Additionally, the Navy will follow internal chain of command reporting procedures as promulgated through Navy instructions and orders.

Mitigation Measures Applicable to Vessel Transits in the Mid-Atlantic During North Atlantic Right Whale Migration

For purposes of these measures, the mid-Atlantic is defined broadly to include ports south and east of Block Island Sound southward to South Carolina. The procedure described below would be established as mitigation measures for Navy vessel transits during North Atlantic right whale migratory seasons near ports located off the western North Atlantic, offshore of the eastern United States. The mitigation measures would apply to all Navy vessel transits, including those vessels that would transit to and from East Coast ports and OPAREAs. Seasonal migration of right whales is generally described by NMFS as occurring from October 15th through April 30th, when right whales migrate between feeding grounds farther north and calving grounds farther south. The Navy mitigation measures have been established in accordance with rolling dates identified by NMFS consistent with these seasonal patterns.

NMFS has identified ports located in the western Atlantic Ocean, offshore of the southeastern United States, where vessel transit during right whale migration is of highest concern for potential ship strike. The ports include the Hampton Roads entrance to the Chesapeake Bay, which includes the concentration of Atlantic Fleet vessels in Norfolk, Virginia. Navy vessels are required to use extreme caution and operate at a slow, safe speed (the minimum speed at which mission goals or safety will not be compromised) consistent with mission and safety during the months indicated in Table 11 below and within a 20 nm (37 km) arc (except as noted) of the specified reference points.

During the indicated months, Navy vessels would practice increased vigilance with respect to avoidance of

vessel-whale interactions along the mid-Atlantic coast, including transits to and from any mid-Atlantic ports not specifically identified above.

TABLE 11—NORTH ATLANTIC RIGHT WHALE MIGRATION PORT REFERENCES

Region	Months	Port reference points
South and East of Block Island	Sep–Oct and Mar–Apr	37 km (20 nm) seaward of line 41°4.49 N, 71°51.15 W and 41°18.58 N, 70°50.23 W.
New York/New Jersey	Sep–Oct and Feb–Apr	40°30.64 N, 73°57.76 W.
Delaware Bay (Philadelphia)	Oct–Dec and Feb–Mar	38°52.13 N, 75°01.93 W.
Chesapeake Bay (Hampton Roads and Baltimore).	Nov–Dec and Feb–Apr	37°01.11 N, 75°57.56 W.
North Carolina	Dec–Apr	34°41.54 N, 76°40.20 W.
South Carolina	Oct–Apr	33°11.84 N, 79°08.99 W and 32°43.39 N, 79°48.72 W.

Proposed Mitigation Measures for Specific At-Sea Training Events

These measures are standard operating procedures that are in place currently and will be used in the future for all activities being analyzed in this LOA request.

I. Firing Exercise (FIREX) Using the Integrated Maritime Portable Acoustic Scoring System (IMPASS) (5-in Explosive Rounds)

FIREX using IMPASS will occur in two areas in the Navy Cherry Point Study Area: Areas of 4/5 & 13/14. The locations were established to be far enough from shore to reduce civilian encounters (e.g., diving and recreational fishing). Surface ships conducting FIREX with IMPASS do not have strict distance from land restrictions like aircraft that embark from shore-based facilities.

The following measures would be implemented for FIREX using IMPASS:

1. This activity would only occur in Areas 4/5 and 13/14.

2. Pre-exercise monitoring of the target area will be conducted with ''Big Eyes'' prior to the event, during deployment of the IMPASS sonobuoy array, and during return to the firing position. Ships will maintain lookouts dedicated to visually searching for marine mammals 180° along the ship track line and 360° at each buoy drop-off location.

3. ''Big Eyes'' on the ship will be used to monitor a 640-yd (585-m) buffer zone for marine mammals during naval-gunfire events.

4. Ships will not fire on the target if any marine mammals are detected within or approaching the 640-yd (585-m) buffer zone until the area is clear of marine mammals. If marine mammals are present, operations would be suspended. Visual observation will occur for approximately 45 minutes, or until the animal has been observed to have vacated the area and is heading away from the buffer zone.

5. Post-exercise monitoring of the entire effect range will take place with ''Big Eyes'' and the naked eye during the retrieval of the IMPASS sonobuoy array following each firing exercise.

6. The naval gunfire will take place during daylight hours only.

7. The naval gunfire utilizing 5-in. rounds will only be used in Beaufort Sea State three or less.

8. The visibility must be such that the fall of shot is visible from the firing ship during the exercise.

9. No firing will occur if marine mammals are detected within 70 yds (64 m) of the vessel.

II. Air-to-Surface Missile Exercises (Explosives)

Marine Corps helicopters launch their Hellfire and TOW missiles in Air 16 and 17 of W–122 in the Navy Cherry Point Study Area. These sub-areas are far enough from shore to reduce civilian encounters (e.g., diving and recreational fishing), while remaining within 60 nm of shore-based facilities, close enough so a helicopter can complete its training mission before needing to return for refueling.

The following measures will be implemented:

1. This activity will only occur in Air 16 and 17 of W–122 for Hellfire and TOW missile launches.

2. Before launching a missile, participant aircraft will visually survey the target area for marine mammals. Visual inspection of the target area will be made by flying at 1,500 ft (457 m) altitude or lower, if safe to do so, and at slowest safe speed (the minimum speed at which mission goals or safety will not be compromised). The aircrew must be able to actually see ordnance impact areas. Explosive ordnance shall not be targeted to impact within 1,800 yards (1,646 m) of sighted marine mammals.

III. Mine Neutralization Training Involving Underwater Detonations (Up to and Including 20-lb Charges)

Mine neutralization involving underwater detonations occurs in shallow water (0–120 ft, or 0–36 m) and is executed by divers using SCUBA. These exercises utilize small boats that deploy from shore based facilities. Often times these small boats are rigid-hulled inflatable boats, which are designed for shallow water and have limited seaworthiness, necessitating a nearshore location. The exercise is a one-day event that occurs only during daylight hours; therefore, the distance from shore is limited.

1. This activity will only occur in the UNDET area of Onslow Bay.

2. Observers will survey the ZOI, a 656-yd (600-m) radius from detonation location, for marine mammals from all participating vessels during the entire operation. A survey of the ZOI (minimum of three parallel tracklines 219 yds [200 m] apart) using support craft will be conducted at the detonation location 30 minutes prior through 30 minutes post detonation.

3. Detonation operations will be conducted during daylight hours.

4. If a marine mammal is sighted within the ZOI, the animal will be allowed to leave of its own volition. The Navy will suspend detonation exercises and ensure the area is clear for a full 30 minutes prior to detonation.

5. Divers placing the charges on mines and dive support vessel personnel will survey the area for marine mammals and will report any sightings to the surface observers. These animals will be allowed to leave of their own volition and the ZOI will be clear for 30 minutes prior to detonation.

6. No detonations will take place within 3.2 nm (6 km) of an estuarine inlet (Bogue, Bear, Browns, New River, Inlets).

7. No detonations will take place within 1.6 nm (3 km) of shoreline.

8. No detonations will take place within 0.5 nm (1 km) of any artificial reef, shipwreck, or live hard-bottom community.

9. Personnel will record any protected species observations during the exercise as well as measures taken if species are detected within the ZOI.

Adaptive Management

NMFS proposes to include an adaptive management component in the final regulations governing the take of marine mammals incidental to Navy training exercises in the Cherry Point Range Complex. The use of adaptive management will provide NMFS the ability to consider new data from different sources to determine (in coordination with the Navy), on an annual basis (or earlier, as warranted), if new or modified mitigation or monitoring measures are appropriate for subsequent annual LOAs. Following are some of the possible sources of applicable data:

- Results from the Navy's monitoring from the previous year (either from the Cherry Point Range Complex or other locations)
- Compiled results of Navy funded research and development (R&D) studies (presented pursuant to the ICMP, which is discussed elsewhere in this document)
- Results from general marine mammal and sound research (funded by the Navy [described below] or otherwise)
- Any information which reveals that marine mammals may have been taken in a manner, extent or number not authorized by these regulations or subsequent Letters of Authorization.

Mitigation measures could be modified or added if new data suggests that such modifications would have a reasonable likelihood of accomplishing the goals of mitigation laid out in this proposed rule and if the measures are practicable. NMFS would also coordinate with the Navy to modify or add to the existing monitoring requirements if the new data suggest that the addition of a particular measure would more effectively accomplish the goals of monitoring laid out in this proposed rule. The reporting requirements associated with this rule are designed to provide NMFS with monitoring data from the previous year to allow NMFS to consider the data in issuing annual LOAs. NMFS and the Navy will meet annually prior to LOA issuance to discuss the monitoring reports, Navy R&D developments, and current science and whether mitigation or monitoring modifications are appropriate.

Monitoring and Reporting Measures

In order to issue an ITA for an activity, Section 101(a)(5)(A) of the MMPA states that NMFS must set forth ''requirements pertaining to the monitoring and reporting of such taking.'' The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for LOAs must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present.

Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals:

a. An increase in the probability of detecting marine mammals, both within the safety zone (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the effects analyses.

b. An increase in our understanding of how many marine mammals are likely to be exposed to levels of explosives or other stimuli that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS.

c. An increase in our understanding of how marine mammals respond (behaviorally or physiologically) to explosives or other stimuli expected to result in take and how anticipated adverse effects on individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival).

d. An increased knowledge of the affected species.

e. An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

f. A better understanding and record of the manner in which the authorized entity complies with the incidental take authorization.

The Navy would be required to cooperate with the NMFS when monitoring the impacts of the activity on marine mammals.

The Navy must notify NMFS immediately (or as soon as clearance procedures allow) if the specified activity is thought to have resulted in the mortality or injury of any marine mammals, or in any take of marine mammals not identified in this document.

The Navy must conduct all monitoring and/or research required under the Letter of Authorization, if issued.

The monitoring methods proposed for use during training events in the Cherry Point Range Complex include a combination of individual elements designed to allow a comprehensive assessment include:

1. Vessel and aerial surveys.

i. Visual surveillance of 1 event per year. If possible, the event surveyed will be one involving multiple detonations. Due to the limited number of events conducted in the Cherry Point Range Complex, there is a potential that it may be impossible to coordinate required surveys to take place during the limited opportunities presented. In any case, any missed annual survey requirement will roll into the subsequent year ensuring that the appropriate number of surveys occur over the 5-year regulations. Likewise, additional surveys may be scheduled in any year where additional opportunities arise, with the number of surveys during the 5-year regulations not to exceed 5.

ii. For surveyed training events, aerial or vessel surveys will be used 1–2 days prior to, during (if safe to do so), and 1–5 days post detonation. The variation in the number of days after allows for the detection of animals that gradually return to an area, if they indeed do change their distribution in response to underwater detonation events.

iii. Surveys will include any specified exclusion zone around a particular detonation point plus 2,000 yards beyond the border of the exclusion zone (i.e., the circumference of the area from the border of the exclusion zone extending 2,000 yards outwards). The survey shall be conducted using a towed array behind the survey vessel in transect lines or grid in the predetermined area outside the exclusion zone and should be conducted in a manner that ensures the entire circumference of the exclusion zone can be observed. For vessel-based surveys a passive acoustic system (hydrophone or towed array) could be used to determine if marine mammals are in the area before and/or after a detonation event. Depending on animals sighted, it may be possible to conduct focal surveys of animals outside of the exclusion zone (detonations could be delayed if marine mammals are observed within the exclusion zone) to record behavioral responses to the detonations.

iv. When conducting a particular survey, the survey team will collect:

A. Species identification and group size;

B. Location and relative distance from the detonation site;

C. The behavior of marine mammals including standard environmental and oceanographic parameters;

D. Date, time and visual conditions associated with each observation;

E. Direction of travel relative to the detonation site; and

F. Duration of the observation.

2. Passive acoustic monitoring.

i. When practicable, a towed hydrophone array should be used whenever shipboard surveys are being conducted. The towed array would be deployed during daylight hours for each of the days the ship is at sea.

ii. A towed hydrophone array is towed from the boat and can detect and localize marine mammals that vocalize and would be used to supplement the ship-based systematic line-transect surveys (particularly for species such as beaked whales that are rarely seen).

iii. The array would need to detect low frequency vocalizations (< 1,000 Hz) for baleen whales and relatively high frequency vocalizations (up to 30 kHz) for odontocetes such as sperm whales. The use of two simultaneously deployed arrays can also allow more accurate localization and determination of diving patterns.

3. Marine mammal observers on Navy platforms

i. Marine mammal observers (MMOs) will be placed on a Navy platform during one of the exercises being monitored per year.

ii. Qualifications must include expertise in species identification of regional marine mammal species and experience collecting behavioral data. Experience as a NMFS marine mammal observer is preferred, but not required. Navy biologists and contracted biologists may also be used; contracted MMOs must have appropriate security clearance to board Navy platforms.

iii. MMOs will not be placed aboard Navy platforms for every Navy training event or major exercise, but during specifically identified opportunities deemed appropriate for data collection efforts. The events selected for MMO participation will take into account safety, logistics, and operational concerns.

iv. MMOs will observe from the same height above water as the lookouts.

v. The MMOs will not be part of the Navy's formal reporting chain of command during their data collection efforts; instead, Navy lookouts will continue to serve as the primary reporting means within the Navy chain of command for marine mammal sightings. The only exception is that if an animal is observed within the shutdown zone that has not been observed by the lookout, the MMO will inform the lookout of the sighting for the lookout to take the appropriate action through the chain of command.

vi. The MMOs will collect species identification, behavior, direction of travel relative to the Navy platform, and distance first observed. All MMO sightings will be conducted according to a standard operating procedure.

The Navy would submit a report annually on September 1 describing the implementation and results (through June 1 of the same year) of the monitoring required above. Standard marine species sighting forms would be provided by the Navy and data collection methods will be standardized across ranges to allow for comparison in different geographic locations.

The Cherry Point Range Complex Comprehensive Report—The Navy will submit to NMFS a draft report that summarizes all of the marine mammal observations and data gathered during explosive exercises through February 1, 2013. This report will be submitted to NMFS at the end of the fourth year of the rule (May 2013).

The Navy will respond to NMFS' comments on the draft comprehensive report if submitted within 3 months of receipt. The report will be considered final after the Navy has addressed NMFS' comments, or three months after the submittal of the draft if NMFS does not comment by then. To implement the aforementioned monitoring measures, the Navy is developing an Integrated Comprehensive Monitoring Program (ICMP) for marine species in order to assess the effects of training activities on marine species and investigate population-level trends in marine species distribution, abundance, and habitat use in various range complexes and geographic locations where Navy training occurs. Although the ICMP is intended to apply to all Navy training, use of mid-frequency active (MFA) sonar in training, testing, and research, development, test, and evaluation (RDT&E) will comprise a major component of the overall program.

The ICMP will establish the overarching structure and coordination that will facilitate the collection and synthesis of monitoring data from Navy training and research and development projects. The Program will compile data from range-specific monitoring efforts as well as research and development (R&D) studies that are fully or partially Navy-funded. Monitoring methods across the ranges will include methods such as vessel and aerial surveys, tagging, and passive acoustic monitoring.

The Navy will coordinate with the local NMFS Stranding Coordinator for any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during or within 24 hours after completion of explosives training activities.

Estimated Take of Marine Mammals

With respect to the MMPA, NMFS' effects assessment serves four primary purposes: (1) To prescribe the permissible methods of taking (i.e., Level B Harassment (behavioral harassment), Level A harassment (injury), or mortality, including an identification of the number and types of take that could occur by Level A or B harassment or mortality) and to prescribe other means of affecting the least practicable adverse impact on such species or stock and its habitat (i.e., mitigation); (2) to determine whether the specified activity will have a negligible impact on the affected species or stocks of marine mammals (based on the likelihood that the activity will adversely affect the species or stock through effects on annual rates of recruitment or survival); (3) to determine whether the specified activity will have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (however, there are no subsistence communities that would be affected in the Cherry Point Range Complex, so this determination is inapplicable for this rulemaking); and (4) to prescribe requirements pertaining to monitoring and reporting.

In the *Assessment of Marine Mammal Response to Anthropogenic Sound* section, NMFS' analysis identified the lethal responses, physical trauma, sensory impairment (permanent and temporary threshold shifts and acoustic masking), physiological responses (particular stress responses), and behavioral responses that could potentially result from explosive ordnance exposures. In this section, we will relate the potential effects to marine mammals from underwater detonation of explosives to the MMPA regulatory definitions of Level A and Level B Harassment and attempt to quantify the effects that might occur from the specific training activities that the Navy is proposing in the Cherry Point Range Complex.

Take Calculations

In estimating the potential for marine mammals to be exposed to an acoustic source, the Navy completed the following actions:

1. Evaluated potential effects within the context of existing and current regulations, thresholds, and criteria;

2. Identified all acoustic sources that will be used during Navy training activities;

3. Identified the location, season, and duration of the action to determine which marine mammal species are likely to be present;

4. Determined the estimated number of marine mammals (i.e., density) of each species that will likely be present in the respective OPAREAs during the Navy training activities;

5. Applied the applicable acoustic threshold criteria to the predicted sound exposures from the proposed activity. The results were then evaluated to determine whether the predicted sound exposures from the acoustic model might be considered harassment; and

6. Considered potential harassment within the context of the affected marine mammal population, stock, and species to assess potential population viability. Particular focus on recruitment and survival are provided to analyze whether the effects of the action can be considered to have a negligible impact on marine mammal species or stocks.

Starting with a sound source, the attenuation of an emitted sound due to propagation loss is determined. Uniform animal distribution is overlaid onto the calculated sound fields to assess if animals are physically present at sufficient received sound levels to be considered ''exposed'' to the sound. If the animal is determined to be exposed, two possible scenarios must be considered with respect to the animal's physiology—effects on the auditory system and effects on non-auditory system tissues. These are not independent pathways and both must be considered since the same sound could affect both auditory and non-auditory tissues. Note that the model does not account for any animal response; rather the animals are considered stationary, accumulating energy until the threshold is tripped.

These modeling results do not take into account the mitigation measures (detailed in the Proposed Mitigation Measure section above) that lower the potential for exposures to occur given standard range clearance procedures and the likelihood that these species can be readily detected (e.g., small animals move quickly throughout the water column and are often seen riding the bow wave of large ships or in large groups). Nevertheless, based on the modeling results, only two individuals of Atlantic spotted dolphins would be taken by Level B behavioral harassment as a result of the Navy training activities in the Cherry Point Range Complex. In addition, NMFS does not believe that there would be any mortality of any marine mammal resulting from the proposed training activities due to the sparse training activities and the implementation of mitigation and monitoring measures described above. Therefore, mortality of marine mammals would not be authorized. With the mitigation and monitoring measures implemented, the estimated take could be further reduced.

Although exposure of marine mammals based on the Navy's modeling shows that only two individuals of Atlantic spotted dolphins would be taken by Level B behavioral harassment, because of the relatively high abundance of several species (Atlantic spotted dolphins, bottlenose dolphins, common dolphins, striped dolphins, and Risso's dolphins) in the proposed action area (Waring et al., 2008) and their aggregation in relatively large groups, NMFS considers that additional takes of these five species by Level B behavioral harassment are possible. Therefore, NMFS proposes to authorize the take of 20 individuals annually from each species over the course of the 5-year regulations.

Effects on Marine Mammal Habitat

Activities from Atlantic Fleet training activities in the Cherry Point Range Complex that may affect marine mammal habitat include changes in water quality, the introduction of sound into the water column, and temporary changes to prey distribution and abundance. However, potential impacts to marine mammal habitat are not anticipated to alter the function of the habitat and, therefore, will have little to no impact of marine mammal species. There is no critical habitat within the Cherry Point Range Complex.

Analysis and Negligible Impact Determination

Pursuant to NMFS' regulations implementing the MMPA, an applicant is required to estimate the number of animals that will be ''taken'' by the specified activities (i.e., takes by harassment only, or takes by harassment, injury, and/or death). This estimate informs the analysis that NMFS must perform to determine whether the activity will have a ''negligible impact'' on the species or stock. Level B (behavioral) harassment occurs at the level of the individual(s) and does not assume any resulting population-level consequences, though there are known avenues through which behavioral disturbance of individuals can result in population-level effects. A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number of Level B harassment takes, alone, is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through behavioral harassment, NMFS must consider other factors, such as the likely nature of any responses (their intensity, duration, etc.), the context of any responses (critical reproductive time or location, migration, etc.), or any of the other variables mentioned in the first paragraph (if known), as well as the number and nature of estimated Level A takes, the number of estimated mortalities, and effects on habitat.

Based on the analyses of the potential impacts from the proposed Navy Cherry Point Range Complex training activities contained herein, NMFS has preliminarily determined that the issuance of 5-year regulations and annual LOAs is appropriate for Navy training exercises utilizing underwater detonations and will have a negligible impact on the marine mammal species and stocks present in the Cherry Point Range Complex.

Subsistence Harvest of Marine Mammals

NMFS has preliminarily determined that the issuance of an LOA for Navy training exercises in the Cherry Point Range Complex would not have an unmitigable adverse impact on the availability of the affected species or stocks for subsistence use, since there are no such uses in the specified area.

ESA

There are six ESA-listed marine mammal species that are listed as endangered under the ESA with confirmed or possible occurrence in the Cherry Point Range Complex: Humpback whale, North Atlantic right whale, fin whale, and sperm whale. The Navy has begun consultation with NMFS pursuant to section 7 of the ESA, and NMFS will also consult internally on the issuance of an LOA under section 101(a)(5)(A) of the MMPA for training exercises in the Cherry Point Range Complex. Consultation will be concluded prior to a determination on the issuance of the final rule and an LOA.

NEPA

The Navy is preparing an Environmental Impact Statement (EIS) for the proposed Cherry Point Range Complex training activities. A draft EIS was released for public comments from September 13–October 27, 2008 and it is

available at *http://www.NavyCherryPointRangeComplexEIS.com*. NMFS is a cooperating agency (as defined by the Council on Environmental Quality (40 CFR 1501.6)) in the preparation of the EIS. NMFS has reviewed the Draft EIS and will be working with the Navy on the Final EIS (FEIS).

NMFS intends to adopt the Navy's FEIS, if adequate and appropriate, and we believe that the Navy's FEIS will allow NMFS to meet its responsibilities under NEPA for the issuance of the 5-year regulation and LOAs for training activities in the Cherry Point Range Complex. If the Navy's FEIS is not adequate, NMFS will supplement the existing analysis and documents to ensure that we comply with NEPA prior to the issuance of the final rule or LOA.

Preliminary Determination

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat and dependent upon the implementation of the mitigation measures, NMFS preliminarily finds that the total taking from Navy training exercises utilizing underwater explosives in the Cherry Point Range Complex will have a negligible impact on the affected marine mammal species or stocks. NMFS has proposed regulations for these exercises that prescribe the means of affecting the least practicable adverse impact on marine mammals and their habitat and set forth requirements pertaining to the monitoring and reporting of that taking.

Classification

This action does not contain a collection of information requirement for purposes of the Paperwork Reduction Act

This proposed rule has been determined to be not significant for purposes of Executive Order 12866.

Pursuant to 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 rule, if adopted, would not have a significant economic impact on a substantial number of small entities. The Regulatory Flexibility Act requires Federal agencies to prepare an analysis of a rule's impact on small entities whenever the agency is required to publish a notice of proposed rulemaking. However, a Federal agency may certify, pursuant to 5 U.S.C. Section 605(b), that the action will not have a significant economic impact on a substantial number of small entities. The Navy is the entity that will be affected by this rulemaking, not a small governmental jurisdiction, small organization or small business, as defined by the Regulatory Flexibility Act. This rulemaking authorizes the take of marine mammals incidental to a specified activity. The specified activity defined in the proposed rule includes the use of underwater detonations during training activities that are only conducted by the U.S. Navy. Additionally, the proposed regulations are specifically written for ''military readiness'' activities, as defined by the NDAA, which means they cannot apply to small businesses. Consequently, any requirements imposed by a Letter of Authorization issued pursuant to these regulations, and any monitoring or reporting requirements imposed by these regulations, will be applicable only to the Navy. Because this action, if adopted, would directly affect the Navy and not a small entity, NMFS concludes the action would not result in a significant economic impact on a substantial number of small entities. As a result, an initial regulatory flexibility analysis is not required and none has been prepared.

Dated: March 9, 2009.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For reasons set forth in the preamble, 50 CFR part 218 is proposed to be amended as follows:

PART 218—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

1. The authority citation for part 218 continues to read as follows:

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

2. Subpart C is added to part 218 to read as follows:

Subpart C—Taking Marine Mammals Incidental to U.S. Navy Training in the Cherry Point Range Complex

Sec.

218.20 Specified activity and specified geographical region.
218.21 Permissible methods of taking.
218.22 Prohibitions.
218.23 Mitigation.
218.24 Requirements for monitoring and reporting.
218.25 Applications for Letters of Authorization.
218.26 Letters of Authorization.
218.27 Renewal of Letters of Authorization.
218.28 Modifications to Letters of Authorization.

Subpart C—Taking Marine Mammals Incidental to U.S. Navy Training in the Cherry Point Range Complex

§ 218.20 Specified activity and specified geographical region.

(a) Regulations in this subpart apply only to the U.S. Navy for the taking of marine mammals that occurs in the area outlined in paragraph (b) of this section and that occur incidental to the activities described in paragraph (c) of this section.

(b) The taking of marine mammals by the Navy is only authorized if it occurs within the Cherry Point Range Complex, which is located along the southern east coast of the U.S., as stated in the Navy's letter of authorization application. The coordinates of the Cherry Point Range Complex Study Area are: 35°30′ N, 75°25′ W; 34°14′ N, 73°57′ W; 32°12′ N, 76°49′ W; 32°20′ N, 77°20′ W; 33°10′ N, 77°31′ W; and 34°23′30″ N, 77°30′ W; then along the 3 nm from and parallel to the shoreline.

(c) The taking of marine mammals by the Navy is only authorized if it occurs incidental to the following activities within the designated amounts of use:

(1) The detonation of the underwater explosives indicated in paragraph (c)(1)(i) of this section conducted as part of the training exercises indicated in paragraph (c)(1)(ii) of this section:

(i) Underwater Explosives:

(A) AGM–114 (Hellfire missile);

(B) Tube-launched Optically tracked Wire-guided (TOW) missile;

(C) Mine Neutralization (20 lb NEW charges); and

(D) 5″ Naval Gunfire.

(ii) Training Exercises:

(A) Mine Neutralization (20 lb NEW charges)—up to 100 exercises over the course of 5 years (an average of 20 per year);

(B) Missile Exercise (MISSILEX) (Air-to-Surface; Hellfire missile)—up to 40 exercises over the course of 5 years (an average of 8 per year);

(C) Missile Exercise (MISSILEX) (Air-to-Surface; TOW)—up to 40 exercises over the course of 5 years (an average of 8 per year); and

(D) FIREX with IMPASS—up to 10 exercises over the course of 5 years (an average of 2 per year).

(2) [Reserved].

§ 218.21 Permissible methods of taking.

(a) Under Letters of Authorization issued pursuant to §§ 216.106 and 218.26, the Holder of the Letter of Authorization may incidentally, but not intentionally, take marine mammals within the area described in § 218.20(b), provided the activity is in compliance with all terms, conditions, and

requirements of this Subpart and the appropriate Letter of Authorization.

(b) The incidental take of marine mammals under the activities identified in § 218.20(c) is limited to the following species, by the indicated method of take and the indicated number of times:

(1) Level B Harassment (annual estimates):

(A) Atlantic spotted dolphin (*Stenella frontalis*)—22;

(B) Striped dolphin (*S. coeruleoalba*)—20;

(C) Bottlenose dolphin (*Tursiops truncatus*)—20;

(D) Common dolphin (*Delphinus delphis*)—20; and

(E) Risso's dolphin (*Grampus griseus*)—20.

(2) [Reserved].

§ 218.22 Prohibitions.

Notwithstanding takings contemplated in § 218.21 and authorized by a Letter of Authorization issued under §§ 216.106 and 218.26, no person in connection with the activities described in § 218.20 may:

(a) Take any marine mammal not specified in § 218.21(b);

(b) Take any marine mammal specified in § 218.21(b) other than by incidental take as specified in § 218.21(b)(1) and (2);

(c) Take a marine mammal specified in § 218.21(b) if 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 218.26.

§ 218.23 Mitigation.

(a) When conducting training activities identified in § 218.20(c), the mitigation measures contained in this subpart and subsequent Letters of Authorization issued under §§ 216.106 and 218.26 must be implemented. These mitigation measures include, but are not limited to:

(1) *General Maritime Measures:* (i) Personnel Training—Lookouts;

(A) All bridge personnel, Commanding Officers, Executive Officers, officers standing watch on the bridge, maritime patrol aircraft aircrews, and Mine Warfare (MIW) helicopter crews shall complete MSAT.

(B) Navy lookouts shall undertake extensive training to qualify as a watchstander in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

(C) Lookout training shall include on-the-job instruction under the supervision of a qualified, experienced watchstander. Following successful completion of this supervised training period, lookouts shall complete the Personal Qualification Standard Program, certifying that they have demonstrated the necessary skills (such as detection and reporting of partially submerged objects).

(D) Lookouts shall be trained in the most effective means to ensure quick and effective communication within the command structure to facilitate implementation of protective measures if marine species are spotted.

(E) Surface lookouts shall scan the water from the ship to the horizon and be responsible for all contacts in their sector. In searching the assigned sector, the lookout shall always start at the forward part of the sector and search aft (toward the back). To search and scan, the lookout shall hold the binoculars steady so the horizon is in the top third of the field of vision and direct the eyes just below the horizon. The lookout shall scan for approximately five seconds in as many small steps as possible across the field seen through the binoculars. They shall search the entire sector in approximately five-degree steps, pausing between steps for approximately five seconds to scan the field of view. At the end of the sector search, the glasses shall be lowered to allow the eyes to rest for a few seconds, and then the lookout shall search back across the sector with the naked eye.

(ii) Operating Procedures & Collision Avoidance:

(A) Prior to major exercises, a Letter of Instruction, Mitigation Measures Message or Environmental Annex to the Operational Order shall be issued to further disseminate the personnel training requirement and general marine species mitigation measures.

(B) Commanding Officers shall make use of marine species detection cues and information to limit interaction with marine species to the maximum extent possible consistent with safety of the ship.

(C) While underway, surface vessels shall have at least two lookouts with binoculars; surfaced submarines shall have at least one lookout with binoculars. Lookouts already posted for safety of navigation and man-overboard precautions may be used to fill this requirement. As part of their regular duties, lookouts shall watch for and report to the OOD the presence of marine mammals.

(D) Personnel on lookout will employ visual search procedures employing a scanning method in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

(E) After sunset and prior to sunrise, lookouts shall employ Night Lookouts Techniques in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D).

(F) While in transit, naval vessels shall be alert at all times, use extreme caution, and proceed at a ''safe speed'' (the minimum speed at which mission goals or safety will not be compromised) so that the vessel can take proper and effective action to avoid a collision with any marine animal and can be stopped within a distance appropriate to the prevailing circumstances and conditions.

(G) When marine mammals have been sighted in the area, Navy vessels shall increase vigilance and implement measures to avoid collisions with marine mammals and avoid activities that might result in close interaction of naval assets and marine mammals. Such measures shall include changing speed and/or course direction and would be dictated by environmental and other conditions (e.g., safety or weather).

(H) Naval vessels shall maneuver to keep at least 500 yds (460 m) away from any observed whale and avoid approaching whales head-on.

(I) Where feasible and consistent with mission and safety, vessels shall avoid closing to within 200-yd (183 m) of marine mammals other than whales.

(J) Navy aircraft participating in exercises at sea shall conduct and maintain, when operationally feasible and safe, surveillance for marine species of concern as long as it does not violate safety constraints or interfere with the accomplishment of primary operational duties under § 218.20. Marine mammal detections shall be immediately reported to assigned Aircraft Control Unit for further dissemination to ships in the vicinity of the marine species as appropriate.

(K) All vessels shall maintain logs and records documenting training operations should they be required for event reconstruction purposes. Logs and records shall be kept for a period of 30 days following completion of a major training exercise.

(2) *Coordination and Reporting Requirements.* (i) The Navy shall coordinate with the local NMFS Stranding Coordinator for any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during training activities or within 24 hours after completion of training activities.

(ii) The Navy shall follow internal chain of command reporting procedures as promulgated through Navy instructions and orders.

(3) *Mitigation Measures Applicable Vessel Transit in the Mid-Atlantic during North Atlantic Right Whale Migration:* (i) Mid-Atlantic, Offshore of the Eastern United States:

(A) All Navy vessels are required to use extreme caution and operate at a slow, safe speed consistent with mission and safety during the months indicated below and within a 37 km (20 nm) arc (except as noted) of the specified associated reference points:

(*1*) South and East of Block Island (37 km (20 NM) seaward of line between 41–4.49 °N. lat. 071–51.15 °W. long. and 41–18.58 °N. lat. 070–50.23 °W. long): Sept-Oct and Mar-Apr

(*2*) New York/New Jersey (40–30.64 °N. lat. 073–57.76 °W. long.): Sep–Oct and Feb-Apr.

(*3*) Delaware Bay (Philadelphia) (38–52.13 °N. lat. 075–1.93 °W. long.): Oct–Dec and Feb–Mar.

(*4*) Chesapeake Bay (Hampton Roads and Baltimore) (37–1.11 °N. lat. 075–57.56 °W. long.): Nov-Dec and Feb–Apr.

(*5*) North Carolina (34–41.54 °N. lat. 076–40.20 °W. long.): Dec-Apr

(*6*) South Carolina (33–11.84 °N. lat. 079–8.99 °W. long. and 32–43.39 °N. lat. 079–48.72 °W. long.): Oct-Apr

(B) During the months indicated in paragraph (a)(3)(i)(A) of this section, Navy vessels shall practice increased vigilance with respect to avoidance of vessel-whale interactions along the mid-Atlantic coast, including transits to and from any mid-Atlantic ports not specifically identified in paragraph (a)(3)(i)(A) of this section.

(C) All surface units transiting within 56 km (30 NM) of the coast in the mid-Atlantic shall ensure at least two watchstanders are posted, including at least one lookout who has completed required MSAT training.

(D) Navy vessels shall not knowingly approach any whale head on and shall maneuver to keep at least 457 m (1,500 ft) away from any observed whale, consistent with vessel safety.

(ii) Southeast Atlantic, Offshore of the Eastern United States—for the purposes of the measures below (paragraph (a)(3)(ii)(A) and (B) of this section), the ''southeast'' encompasses sea space from Charleston, South Carolina, southward to Sebastian Inlet, Florida, and from the coast seaward to 148 km (80 NM) from shore. North Atlantic right whale critical habitat is the area from 31–15 °N. lat. to 30–15 °N. lat. extending from the coast out to 28 km (15 NM), and the area from 28–00 °N. lat. to 30–15 °N. lat. from the coast out to 9 km (5 NM). All mitigation measures described here that apply to the critical habitat apply from November 15—April 15 and also apply to an associated area of concern which extends 9 km (5 NM) seaward of the designated critical habitat boundaries.

(A) Prior to transiting or training in the critical habitat or associated area of concern, ships shall contact Fleet Area Control and Surveillance Facility, Jacksonville, to obtain latest whale sighting and other information needed to make informed decisions regarding safe speed (the minimum speed at which mission goals or safety will not be compromised) and path of intended movement. Subs shall contact Commander, Submarine Group Ten for similar information.

(B) The following specific mitigation measures apply to activities occurring within the North Atlantic right whale critical habitat and an associated area of concern which extends 9 km (5 NM) seaward of the designated critical habitat boundaries:

(*1*) When transiting within the critical habitat or associated area of concern, vessels shall exercise extreme caution and proceed at a slow safe speed. The speed shall be the slowest safe speed that is consistent with mission, training and operations.

(*2*) Speed reductions (adjustments) are required when a whale is sighted by a vessel or when the vessel is within 9 km (5 NM) of a reported new sighting less than 12 hours old. Circumstances could arise where, in order to avoid North Atlantic right whale(s), speed reductions could mean vessels must reduce speed to a minimum at which it can safely keep on course or vessels could come to an all stop.

(*3*) Vessels shall avoid head-on approaches to North Atlantic right whale(s) and shall maneuver to maintain at least 457 m (500 yd) of separation from any observed whale if deemed safe to do so. These requirements do not apply if a vessel's safety is threatened, such as when a change of course would create an imminent and serious threat to a person, vessel, or aircraft, and to the extent vessels are restricted in the ability to maneuver.

(*4*) Ships shall not transit through the critical habitat or associated area of concern in a North-South direction.

(*5*) Ships, surfaced subs, and aircraft shall report any whale sightings to Fleet Area Control and Surveillance Facility, Jacksonville, by the quickest and most practicable means. The sighting report shall include the time, latitude/longitude, direction of movement and number and description of whale (i.e., adult/calf).

(iii) Northeast Atlantic, Offshore of the Eastern United States:

(A) Prior to transiting the Great South Channel or Cape Cod Bay critical habitat areas, ships shall obtain the latest North Atlantic right whale sightings and other information needed to make informed decisions regarding safe speed (the minimum speed at which mission goals or safety will not be compromised). The Great South Channel critical habitat is defined by the following coordinates: 41–00 °N. lat., 69–05 °W. long.; 41–45 °N. lat, 69–45 °W. long; 42–10 °N. lat., 68–31 °W. long.; 41–38 °N. lat., 68–13 °W. long. The Cape Cod Bay critical habitat is defined by the following coordinates: 42–04.8 °N. lat., 70–10 °W. long.; 42–12 °N. lat., 70–15 °W. long.; 42–12 °N. lat., 70–30 °W. long.; 41–46.8 °N. lat., 70–30 °W. long.

(B) Ships, surfaced subs, and aircraft shall report any North Atlantic right whale sightings (if the whale is identifiable as a right whale) off the northeastern U.S. to the Patrol and Reconnaissance Wing (COMPATRECONWING). The report shall include the time of sighting, lat/long, direction of movement (if apparent) and number and description of the whale(s).

(C) Vessels or aircraft that observe whale carcasses shall record the location and time of the sighting and report this information as soon as possible to the cognizant regional environmental coordinator. All whale strikes must be reported. This report shall include the date, time, and location of the strike; vessel course and speed; operations being conducted by the vessel; weather conditions, visibility, and sea state; description of the whale; narrative of incident; and indication of whether photos/videos were taken. Navy personnel are encouraged to take photos whenever possible.

(D) Specific mitigation measures related to activities occurring within the critical habitat include the following:

(*1*) Vessels shall avoid head-on approaches to North Atlantic right whale(s) and shall maneuver to maintain at least 457 m (500 yd) of separation from any observed whale if deemed safe to do so. These requirements do not apply if a vessel's safety is threatened, such as when change of course would create an imminent and serious threat to a person, vessel, or aircraft, and to the extent vessels are restricted in the ability to maneuver.

(*2*) When transiting within the critical habitat or associated area of concern, vessels shall use extreme caution and operate at a safe speed (the minimum speed at which mission goals or safety will not be compromised) so as to be

able to avoid collisions with North Atlantic right whales and other marine mammals, and stop within a distance appropriate to the circumstances and conditions.

(*3*) Speed reductions (adjustments) are required when a whale is sighted by a vessel or when the vessel is within 9 km (5 NM) of a reported new sighting less than one week old.

(*4*) Ships transiting in the Cape Cod Bay and Great South Channel critical habitats shall obtain information on recent whale sightings in the vicinity of the critical habitat. Any vessel operating in the vicinity of a North Atlantic right whale shall consider additional speed reductions as per Rule 6 of International Navigational Rules.

(4) *Proposed Mitigation Measures for Specific At-Sea Training Events*: (i) Firing Exercise (FIREX) Using the Integrated Maritime Portable Acoustic Scoring System (IMPASS) (5-in Explosive Rounds)

(A) This activity shall only occur in Areas 4/5 and 13/14.

(B) Pre-exercise monitoring of the target area shall be conducted with ''Big Eyes'' prior to the event, during deployment of the IMPASS sonobuoy array, and during return to the firing position. Ships shall maintain lookouts dedicated to visually searching for marine mammals 180° along the ship track line and 360° at each buoy drop-off location.

(C) ''Big Eyes'' on the ship shall be used to monitor a 640-yd (585-m) buffer zone for marine mammals during naval-gunfire events.

(D) Ships shall not fire on the target if any marine mammals are detected within or approaching the 640-yd (585-m) buffer zone. If marine mammals are present, operations must be suspended. Visual observation shall occur for approximately 45 min, or until the animal has been observed to have cleared the area and is heading away from the buffer zone. At such time as animals have cleared the area and are heading away from the buffer zone, the Navy may begin or resume operations.

(E) Post-exercise monitoring of the entire effect range shall take place with ''Big Eyes'' and the naked eye during the retrieval of the IMPASS sonobuoy array following each firing exercise.

(F) The naval gunfire shall take place during daylight hours only.

(G) The naval gunfire utilizing 5-in. rounds shall only be used in Beaufort Sea State three or less.

(H) The visibility must be such that the fall of shot is visible from the firing ship during the exercise.

(I) No firing shall occur if marine mammals are detected within 70 yd (64 m) of the vessel.

(ii) Air-to-Surface Missile Exercises (Explosive):

(A) This activity shall only occur in Air 16 and 17 of W–122 for Hellfire and TOW missile launches.

(B) Before launching a missile, participant aircraft shall visually survey the target area for marine mammals. Visual inspection of the target area shall be made by flying at 1,500 ft (457 m) altitude or lower, if safe to do so, and at slowest safe speed. The aircrew must be able to actually see ordnance impact areas. Explosive ordnance shall not be targeted to impact within 1,800 yards (1,646 m) of sighted marine mammals.

(iii) Mine Neutralization Training Involving Underwater Detonations (up to and including 20-lb charges):

(A) Underwater detonations shall only occur in the UNDET area of Onslow Bay.

(B) Observers shall survey the ZOI, a 656-yd (600-m) radius from detonation location, for marine mammals from all participating vessels during the entire operation. A survey of the ZOI (minimum of three parallel tracklines 219 yd [200 m] apart) using support craft shall be conducted at the detonation location 30 minutes prior through 30 minutes post detonation.

(C) Detonation operations shall be conducted during daylight hours.

(D) If a marine mammal is sighted within the ZOI, the animal shall be allowed to leave of its own volition. The Navy shall suspend detonation exercises and ensure the area is clear for a full 30 minutes prior to detonation.

(E) Divers placing the charges on mines and dive support vessel personnel shall survey the area for marine mammals and shall report any sightings to the surface observers. These animals shall be allowed to leave of their own volition and the ZOI shall be clear for 30 min prior to detonation.

(F) Personnel shall record any protected species observations during the exercise as well as measures taken if species are detected within the ZOI.

§ 218.24 Requirements for monitoring and reporting.

(a) The Holder of the Letter of Authorization issued pursuant to §§ 216.106 and 218.26 for activities described in § 218.20(c) is required to cooperate with the NMFS when monitoring the impacts of the activity on marine mammals.

(b) The Holder of the Authorization must notify NMFS immediately (or as soon as clearance procedures allow) if the specified activity identified in § 218.20(c) is thought to have resulted in the mortality or injury of any marine mammals, or in any take of marine mammals not identified or authorized in § 218.21(b).

(c) The Holder of the Letter of Authorization must conduct all monitoring and/or research required under the Letter of Authorization.

(d) The Navy shall complete an Integrated Comprehensive Monitoring Program (ICMP) Plan in 2009. This planning and adaptive management tool shall include:

(1) A method for prioritizing monitoring projects that clearly describes the characteristics of a proposal that factor into its priority.

(2) A method for annually reviewing, with NMFS, monitoring results, Navy R&D, and current science to use for potential modification of mitigation or monitoring methods.

(3) A detailed description of the Monitoring Workshop to be convened in 2011 and how and when Navy/NMFS will subsequently utilize the findings of the Monitoring Workshop to potentially modify subsequent monitoring and mitigation.

(4) An adaptive management plan.

(5) A method for standardizing data collection for Cherry Point Range Complex and across Range Complexes.

(e) The Holder of the Letter of Authorization shall, when conducting training events in the Cherry Point Range Complex, implement the following monitoring methods:

(1) Vessel and aerial surveys:

(i) Visual surveillance of 1 event per year. The event surveyed shall be one involving multiple detonations. If it is impossible to conduct the required surveys due to lack of training exercises, the missed annual survey requirement shall roll into the subsequent year to ensure that the appropriate number of surveys (i.e., total of 5) occurs over the 5-year period of effectiveness of this subpart.

(ii) For surveyed training events, aerial or vessel surveys shall be used 1–2 days prior to, during (if safe to do so), and 1–5 days post detonation.

(iii) Survey effort shall focus on any specified exclusion zone around a particular detonation point plus 2,000 yards beyond the border of the exclusion zone (i.e., the circumference of the area from the border of the exclusion zone extending 2,000 yards outwards). The survey shall be conducted using a towed array behind the survey vessel in transect lines or grid in the predetermined area outside the exclusion zone.

(iv) When conducting a particular survey, the survey team shall collect:

(A) Species identification and group size;

(B) Location and relative distance from the detonation site;

(C) The behavior of marine mammals including standard environmental and oceanographic parameters;

(D) Date, time and visual conditions associated with each observation;

(E) Direction of travel relative to the detonation site; and

(F) Duration of the observation.

(2) Passive acoustic monitoring: When practical, a towed hydrophone array should be used whenever shipboard surveys are being conducted. The towed array shall be deployed during daylight hours for each of the days the ship is at sea.

(3) Marine mammal observers on Navy platforms.

(i) Marine mammal observers (MMOs) shall be placed on a Navy platform during the exercises.

(ii) Qualifications must include expertise in species identification of regional marine mammal species and experience collecting behavioral data. Experience as a NMFS marine mammal observer is preferred, but not required. Navy biologists and contracted biologists shall be used.

(iii) MMOs shall not be placed aboard Navy platforms for every Navy training event or major exercise, but during specifically identified opportunities for data collection efforts. The events selected for MMO participation shall take into account safety, logistics, and operational concerns.

(iv) MMOs shall observe from the same height above water as the lookouts.

(v) The MMOs shall not be part of the Navy's formal reporting chain of command during their data collection efforts; Navy lookouts shall continue to serve as the primary reporting means within the Navy chain of command for marine mammal sightings. The only exception is that if an animal is observed within the shutdown zone that has not been observed by the lookout, the MMO shall inform the lookout of the sighting for the lookout to take the appropriate action through the chain of command.

(vi) The MMOs shall collect species identification, behavior, direction of travel relative to the Navy platform, and distance first observed.

(f) Monitoring Report—The Navy shall submit a report annually on September 1 describing the implementation and results (through June 1 of the same year) of the monitoring required in §218.24(e).

(g) Cherry Point Range Complex Comprehensive Report—The Navy shall submit to NMFS a draft report that analyzes and summarizes *all* of the multi-year marine mammal information gathered during explosive exercises for which individual reports are required in § 218.24(e). This report will be submitted at the end of the fourth year of the rule (May 2013), covering activities that have occurred through February 1, 2013.

(h) The Navy shall respond to NMFS's comments on the draft comprehensive report if submitted within 3 months of receipt. The report will be considered final after the Navy has addressed NMFS's comments, or three months after the submittal of the draft if NMFS does not comment by then.

(i) In 2011, the Navy shall convene a Monitoring Workshop in which the Monitoring Workshop participants will be asked to review the Navy's Monitoring Plans and monitoring results and make individual recommendations (to the Navy and NMFS) of ways of improving the Monitoring Plans. The recommendations shall be reviewed by the Navy, in consultation with NMFS, and modifications to the Monitoring Plan shall be made, as appropriate.

§ 218.25 Applications for Letters of Authorization.

To incidentally take marine mammals pursuant to these regulations, the U.S. citizen (as defined by § 216.103) conducting the activity identified in § 218.20(c) (the U.S. Navy) must apply for and obtain either an initial Letter of Authorization in accordance with § 218.26 or a renewal under § 218.27.

§ 218.26 Letters of Authorization.

(a) A Letter of Authorization, unless suspended or revoked, will be valid for a period of time not to exceed the period of validity of this subpart, but must be renewed annually subject to annual renewal conditions in § 218.27.

(b) Each Letter of Authorization will set forth:

(1) Permissible methods of incidental taking;

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

(3) Requirements for mitigation, monitoring and reporting.

(c) Issuance and renewal of the Letter of Authorization will be based on a determination that the total number of marine mammals taken by the activity as a whole will have no more than a negligible impact on the affected species or stock of marine mammal(s).

§ 218.27 Renewal of Letters of Authorization.

(a) A Letter of Authorization issued under § 216.106 and § 218.26 for the activity identified in § 218.20(c) will be renewed annually upon:

(1) Notification to NMFS that the activity described in the application submitted under § 218.25 will be undertaken and that there will not be a substantial modification to the described work, mitigation or monitoring undertaken during the upcoming 12 months;

(2) Timely receipt of the monitoring reports required under § 218.24(b); and

(3) A determination by the NMFS that the mitigation, monitoring and reporting measures required under § 218.23 and the Letter of Authorization issued under §§ 216.106 and 218.26, were undertaken and will be undertaken during the upcoming annual period of validity of a renewed Letter of Authorization.

(b) If a request for a renewal of a Letter of Authorization issued under §§ 216.106 and 218.27 indicates that a substantial modification to the described work, mitigation or monitoring undertaken during the upcoming season will occur, the NMFS will provide the public a period of 30 days for review and comment on the request. Review and comment on renewals of Letters of Authorization are restricted to:

(1) New cited information and data indicating that the determinations made in this document are in need of reconsideration, and

(2) Proposed changes to the mitigation and monitoring requirements contained in these regulations or in the current Letter of Authorization.

(c) A notice of issuance or denial of a renewal of a Letter of Authorization will be published in the **Federal Register**.

(d) NMFS, in response to new information and in consultation with the Navy, may modify the mitigation or monitoring measures in subsequent LOAs if doing so creates a reasonable likelihood of more effectively accomplishing the goals of mitigation and monitoring set forth in the preamble of these regulations. Below are some of the possible sources of new data that could contribute to the decision to modify the mitigation or monitoring measures:

(1) Results from the Navy's monitoring from the previous year (either from Cherry Point Range Complex Study Area or other locations).

(2) Findings of the Monitoring Workshop that the Navy will convene in 2011 (section 218.24(i)).

(3) Compiled results of Navy funded research and development (R&D) studies (presented pursuant to the ICMP (§ 218.24(d)).

(4) Results from specific stranding investigations (either from the Cherry Point Range Complex Study Area or other locations).

(5) Results from the Long Term Prospective Study described in the preamble to these regulations.

(6) Results from general marine mammal and sound research (funded by the Navy (described below) or otherwise).

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

§ 218.28 Modifications to Letters of Authorization.

(a) Except as provided in paragraph (b) of this section, no substantive modification (including withdrawal or suspension) to the Letter of Authorization by NMFS, issued pursuant to §§ 216.106 and 218.26 and subject to the provisions of this subpart shall be made until after notification and an opportunity for public comment has been provided. For purposes of this paragraph, a renewal of a Letter of Authorization under § 218.27, without modification (except for the period of validity), is not considered a substantive modification.

(b) If the Assistant Administrator determines that an emergency exists that poses a significant risk to the well-being of the species or stocks of marine mammals specified in § 218.20(b), a Letter of Authorization issued pursuant to §§ 216.106 and 218.26 may be substantively modified without prior notification and an opportunity for public comment. Notification will be published in the **Federal Register** within 30 days subsequent to the action.

[FR Doc. E9–5474 Filed 3–13–09; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 300

RIN 0648–AX72

Identification and Certification of Nations Whose Fishing vessels Are Engaged in Illegal, Unreported, or Unregulated Fishing or Bycatch of Protected Living Marine Resources; Correction

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

ACTION: Notice of public hearing; request for comments; correction.

SUMMARY: NMFS published a document in the **Federal Register** of March 3, 2009, announcing five public hearings to discuss and collect comments on issues described in a proposed rule for developing identification and certification procedures to address illegal, unreported, or unregulated fishing activities and bycatch of protected living marine resources pursuant to the High Seas Driftnet Fishing Moratorium Protection Act. This document corrects a hotel name, address, and phone number of an April 6, 2009, meeting.

FOR FURTHER INFORMATION CONTACT: Laura Cimo (ph. 301–713–9090, fax 301–713–9106, e-mail Laura.Cimo@noaa.gov).

SUPPLEMENTARY INFORMATION:

Correction

In the **Federal Register** of March 3, 2009, in FR Doc. E9—4478, on page 9208, in the second column, under the heading ''Dates, Times, and Locations'' correct the hotel name, address, and phone number under ''2'' to read:

''2. Monday, April 6, 2009, 6:30–8:30 p.m., Crowne Plaza, Lincoln Ballroom, 8777 Georgia Avenue, Silver Spring, MD 20910; phone 301–589–0800.''

Dated: March 9, 2009.

Jean-Pierre Ple,

Acting Director, Office of International Affairs, National Marine Fisheries Service.

[FR Doc. E9–5483 Filed 3–13–09; 8:45 am]

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