DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 216

[Docket No. 080724897–81621–02]

RIN 0648–AW90

Taking and Importing Marine Mammals; U.S. Navy's Atlantic Fleet Active Sonar Training (AFAST)

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

ACTION: Final rule.

SUMMARY: NMFS, upon application from the U.S. Navy (Navy), is issuing regulations to govern the unintentional taking of marine mammals incidental to activities conducted off the U.S. Atlantic Coast and in the Gulf of Mexico for the period of January 2009 through January 2014. The Navy's activities are considered military readiness activities pursuant to the Marine Mammal Protection Act (MMPA), as amended by the National Defense Authorization Act for Fiscal Year 2004 (NDAA). These regulations, which allow for the issuance of ''Letters of Authorization'' (LOAs) for the incidental take of marine mammals during the described activities and specified timeframes, prescribe the permissible methods of taking and other means of affecting the least practicable adverse impact on marine mammal species and their habitat, as well as requirements pertaining to the monitoring and reporting of such taking.

DATES: Effective January 22, 2009 through January 22, 2014.

ADDRESSES: A copy of the Navy's application (which contains a list of the references used in this document), NMFS' Record of Decision (ROD), and other documents cited herein may be obtained by writing 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 or by telephone via the contact listed here (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT: Jolie Harrison, Office of Protected Resources, NMFS, (301) 713–2289, ext. 166.

SUPPLEMENTARY INFORMATION: Extensive Supplementary Information was provided in the proposed rule for this activity, which was published in the **Federal Register** on Tuesday, October 14, 2008 (73 FR 60754). This information will not be reprinted here in its entirety; rather, all sections from the proposed rule will be represented herein and will contain either a summary of the material presented in the proposed rule or a note referencing the page(s) in the proposed rule where the information may be found. Any information that has changed since the proposed rule was published will be addressed herein. Additionally, this final rule contains a section that responds to the comments received during the public comment period.

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 and of no more than 1 year, the Secretary shall issue a notice of proposed authorization for public 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 NDAA (Pub. L. 108–136) removed the ''small numbers'' and ''specified geographical region'' limitations and amended the definition of ''harassment'' as it applies to a ''military readiness activity'' to read as follows (Section 3(18)(B) of the MMPA):

> (i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or
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> (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 February 4, 2008, NMFS received an application from the Navy requesting authorization for the take of individuals of 40 species of marine mammals incidental to upcoming Navy training activities, maintenance, and research, development, testing, and evaluation (RDT&E) activities to be conducted within the Atlantic Fleet Active Sonar Training (AFAST) Study Area, which extends east from the Atlantic Coast of the U.S. to 45° W. long. and south from the Atlantic and Gulf of Mexico Coasts to approximately 23° N. lat., but not encompassing the Bahamas (see Figure 1–1 in the Navy's Application), over the course of 5 years. These activities are military readiness activities under the provisions of the NDAA. The Navy states, and NMFS concurs, that these military readiness activities may incidentally take marine mammals present within the AFAST Study Area by exposing them to sound from mid-frequency or high frequency active sonar (MFAS/HFAS) or to employment of the improved extended echo ranging (IEER) system. The IEER consists of an explosive source sonobuoy (AN/SSQ–110A) and an air deployable active receiver (ADAR) sonobuoy (AN/SSQ–101). The Navy requested authorization to take individuals of 40 species of marine mammals by Level B Harassment. Further, though they do not anticipate it to occur, the Navy requests authorization to take, by injury or mortality, up to 10 beaked whales over the course of the 5-yr regulations.

Background of Navy Request

The proposed rule contains a description of the Navy's mission, their responsibilities pursuant to Title 10 of the United States Code, and the specific purpose and need for the activities for which they requested incidental take authorization. The description contained in the proposed rule has not changed (73 FR 60754).

Description of the Specified Activities

The proposed rule contains a complete description of the Navy's specified activities that are covered by these final regulations, and for which the associated incidental take of marine mammals will be authorized in the related LOAs. The proposed rule describes the nature and number of both the anti-submarine warfare (ASW) and mine warfare training (MIW) exercises involving both mid- and high-frequency active sonar (MFAS and HFAS), as well as the IEER exercises involving small explosive detonations. It also describes the sound sources used (73 FR 60754,

pages 60755–60762). The narrative description of the action contained in the proposed rule has not changed, with the exception of the change from IEER to the Advanced Extended Echo Ranging (AEER) discussed below. Tables 1 and 2 summarize the sonar and IEER exercise types used in these training exercises and the hours of sonar.

Navy is developing the AEER system as a replacement to the IEER system. AEER would use a new active sonobuoy (AN/SSQ–125) that utilizes a tonal (or a ping) vice impulsive (or explosive) sound source as a replacement for the AN/SSQ–110A. AEER will still use the ADAR sonobuoy as the systems receiver and will be deployed by Maritime Patrol Aircraft. As AEER is introduced for Fleet use, IEER will be removed. The same total number of buoys will be deployed as were presented in the proposed rule, but a subset of them will be AEER instead of IEER. The small difference in the number of anticipated marine mammal takes that will result from this change is indicated in the take table (Table 6), along with other minor modifications. This small change in the take numbers did not affect NMFS' analysis of and conclusions regarding the proposed action.

BILLING CODE 3510–22–P

System	Center Frequency (kHz)	Source Level (re 1 μPa)	Associated Platform	System Description	Annual Quantity	Unit
AN/SQS-53	3.5	235	DDG and CG hull-mounted sonar (surface ship)	ASW search, detection, & localization; utilized 70% in search mode and 30% track mode	3214	Hours
AN/SQS-56	7.5	225	FFG hull-mounted sonar (surface ship)	ASW search, detection, & localization; Utilized 70% in search mode and 30% track mode	1684	Hours
AN/SQS-53 and AN/SQS-56 (Kingfisher)	MF	Classified	DDG, CG, and FFG hull-mounted sonar (object detection)	Only used when entering and leaving port	216	Hours
AN/BQQ-5 or 10****	MF	Classified	Submarine hull-mounted sonar	ASW search and attack (approximately one ping per two hours when in use)	9976	Pings
AN/AQS-13	10	215	Helicopter dipping sonar	ASW sonar lowered from hovering helicopter (approximately 10 pings/dip, 30 seconds between pings)	1476	Dips
AN/AQS-22*	4.1	217	Helicopter dipping sonar	ASW sonar lowered from hovering helicopter (approximately 10 pings/dip, 30 seconds between pings)	1476	Dips
MK-48 Torpedo	HF	Classified	Submarine fired exercise torpedo	ASW sonar lowered from hovering helicopter (approximately 10 pings/dip, 30 seconds between pings)	32	Torpedoes
MK-46 or 54 Torpedo	HF	Classified	Surface ship and aircraft fired exercise torpedo	Recoverable and non-explosive exercise torpedo; sonar is active approximately 15 min per torpedo run	24	Torpedoes
Tonal sonobuoy (DICASS) (AN/SSQ-62)	8	201	Helicopter and MPA deployed	Remotely commanded expendable sonar-equipped buoy (approximately 12 pings per use, 30 secs between pings)	5853	Buoys
IEER (AN/SSQ-110A)***	Impulsive - Broadband	Classified	MPA deployed	ASW system consists of explosive acoustic source buoy (contains two 4.1 lb charges) and expendable passive receiver sonobuoy	872***	Buoys
AN/SLQ-25 (NIXIE)	MF	Classified	DDG, CG, and FFG towed array (countermeasure)	Towed countermeasure to avert localization and torpedo attacks (approximately 20 mins per use)	332	Hours
AN/SQQ-32	HF	Classified	MCM over the side system (mine-hunting)	Used during MIW training events detect, classify, and localize bottom and moored mines	4474	Hours
AN/BQS-15	HF	Classified	Submarine navigational sonar	Only used when entering and leaving port	450	Hours
ADC MK-1, MK-2, MK-3, and MK-4 ADCs**	MF	Classified	Submarine deployed countermeasure	Expendable acoustic device countermeasure (approximately 20 mins per use)	225	ADCs
Noise Acoustic Emitters (NAE)	MF	Classified	Submarine deployed countermeasure	Expendable acoustic countermeasure (20 mins per use)	127	NAEs
AN/SSQ-125	MF	Classified	MPA deployed	ASW system consists of active sonobuoy and expendable passive receiver sonobuoy	872***	Buoys

Table 1. Acoustic sources used in AFAST exercises that were modeled for effects on marine mammals

*AN/AQS-22 modeling is representative of all helicopter dipping sonar

**MK-3 modeling is representative of all ADCs

ADC – Acoustic Device Countermeasure; CG – Guided Missile Cruiser; DDG – Guided Missile Destroyer; DICASS – Directional Command-Activated Sonobuoy System; DIFAR – Directional Frequency Analysis and Recording; FFG – Fast Frigate; HF – High-Frequency; IEER – Improved Extended Echo Ranging; kHz – Kilohertz; MCM – Mine Countermeasures; MF – Mid-Frequency; MIW – Mine Warfare; MPA – Maritime Patrol Aircraft

***The AN/SSQ-125 System (AEER) is replacing the AN/SSQ-110A (IEER) system, so a total of 872 buoys (IEER or AEER) will be deployed.

****The AN/BQQ-10 was used to model the AN/BQQ-5

Event Name	Training Event Scenarios	Events per Year*	Length of Overall Event	Possible Event Areas***	Typical Event Area Dimensions	Equipment or Action	Equipment Use or Action per Event	Annual Use per Event Type*
INDEPENDENT UNIT LEVEL TRAINING (INCLUDING RDT&E)								
Surface Ship ASW ULT	One or two surface ships (CG, DDG, and FFG) conducting ASW localization and tracking training.	457	2 to 6 hours	VACAPES, CHPT, JAX/CHASN, and GOMEX OPAREAs	5 NM x 10 NM to 30 NM x 40 NM	Surface ship MFA ASW sonar (AN/SQS-53 or AN/SQS-56)	1 to 2 ships (CG, DDG, or FFG) pinging 1 to 3 hours each	1071 hours AN/SQS-53 and 465 hours AN/SQS-56
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-1, MK-2, MK-3, MK-4, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-1, MK-2, MK-3, or MK-4 Noise Acoustic Emitter	158 NIXIE 225 MK-1, MK-2, MK-3, or MK-4 127 Noise Acoustic Emitter
						MK-46 or MK-54 Torpedo	Exercise torpedoes could be used for RDT&E	8 MK-46 or MK-54 exercise torpedoes
						MK-39 EMATT or MK-30 target	1 EMATT or MK-30 (recoverable) per exercise may be used as a target	up to 725 EMATTs expended (total annual use for all exercises)
						Vessel movement	1 to 2 ships maneuvering	Approximately 54 CG, DDG, and FFG surface ships conducting ULT throughout the year
Surface Ship Object Detection ULT	One ship (CG, DDG, and FFG) conducting object detection during transit in/out of port for training and safety during reduced visibility.	108	1 to 2 hours	Sea lanes and Entrance channels to Norfolk, Virginia and Mayport, Florida	5 NM x 10 NM	Surface ship MFA ASW sonar (AN/SQS-53 or AN/SQS-56 Kingfisher) operated in object detection mode	1 ship (CG, DDG, or FFG) pinging for 1 to 2 hours	148 hours AN/SQS-53 and 68 hours AN/SQS-56
						Vessel movement	1 ship maneuvering	Approximately 54 CG, DDG, and FFG surface ships on the East Coast conducting object avoidance twice a year
Helicopter ASW ULT	One helicopter conducting ASW training using dipping sonar or sonobuoys	165	2 to 4 hours	VACAPES, CHPT, and JAX/CHASN OPAREAs	20 NM x 30 NM	Helicopter dipping sonar (AN/AQS-13 or AN/AQS-22)	1 helicopter dipping up to two hours (10 pings per five-minute dip)	160 hours
						Tonal sonobuoy (DICASS) (AN/SSQ-62)	Up to 4 tonal sonobuoys (DICASS)	549 sonobuoys
						Passive sonobuoy (DIFAR) AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)
						MK-46 or MK-54 Torpedo	exercise torpedoes could be used for RDT&E	8 MK-46 or MK-54 exercise torpedoes
						MK-39 EMATT or MK-30 target	1 EMATT or MK-30 (recoverable) per exercise may be used as a target	up to 725 EMATTs expended (total annual use for all exercises)
Submarine ASW ULT	One submarine conducting ASW and SUW training using passive and active sonar.	100	2 to 3 days	Northeast, VACAPES, CHPT, JAX/CHASN, and GOMEX OPAREAs	30 NM x 40 NM	Submarine MFA sonar (AN/BQQ-10)	1 submarine pinging once per two hours (average 36 pings per event)	3600 pings
						MK-48 Torpedo	Number of exercise torpedoes could be used in a single RDT&E event could vary	32 MK-48 exercise torpedoes
						Vessel movement	1 submarine maneuvering	Approximately 25 submarines on the East Coast conducting ULT throughout the year
						MK-39 EMATT or MK-30 target	1 EMATT or MK-30 (recoverable) per exercise may be used as a target	up to 725 EMATTs expended (total annual use for all exercises)
Submarine ASW ULT						Tactical page buoy	1 tactical page buoy may be depoloyed	up to 60 buoys expended
Submarine Navigational	One submarine operating sonar for navigation and object detection during transit in/out of port during reduced visibility.	300	1 to 2 hours	Sea lanes and entrance channels to Norfolk, Virginia; Groton, Connecticut; and Kings Bay, Georgia	5 NM x 10 NM	Submarine MFA object detection sonar (AN/BQQ-10 or AN/BQS-15)	1 submarine pinging 1 to 2 hours	450 hours
						Vessel movement	1 submarine maneuvering	Approximately 30 submarines on the East Coast conducting ULT throughout the year

Event Name	Training Event Scenarios	Events per Year*	Length of Overall Event	Possible Event Areas***	Typical Event Area Dimensions	Equipment or Action	Equipment Use or Action per Event	Annual Use per Event Type*
MPA ASW ULT (tonal sonobuoy)	One MPA conducting ASW submarine localization and tracking training using tonal sonobuoys.	791	2 to 8 hours	Northeast, VACAPES, CHPT, JAX/CHASN, and GOMEX OPAREAs	30 NM x 30 NM to 60 NM x 60 NM	Tonal sonobuoy (DICASS) (AN/SSQ-62)	Up to 10 tonal sonobuoys (DICASS)	3594 sonobuoys
						Passive sonobuoy (DIFAR)_AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)
						MK-46 or MK-54 Torpedo	exercise torpedoes could be used for RDT&E	8 MK-46 or 54 exercise torpedoes
						MK-39 EMATT (repeater) and or MK-30 Target	1 EMATT or MK-30 (recoverable) per exercise may be used as a target	up to 725 EMATTs expended (total annual use for all exercises)
MPA ASW ULT (explosive source sonobuoy [AN/SSQ-110A])	One MPA conducting ASW submarine localization and tracking training using explosive source sonobuoy (AN/SSQ-110A).	169	2 to 8 hours	Northeast, VACAPES, CHPT, JAX/CHASN, and GOMEX OPAREAs	60 NM x 60 NM	explosive source sonobuoy (AN/SSQ 110A)	Up to 14 AN/SQ-110A sonobuoys	676 sonobuoys
						receiver (ADAR) sonobuoy (AN/SSQ-101)	Up to 5 AN/SSQ-101 sonobuoys	239 sonobuoys
Surface Ship MIW ULT	One ship (MCM) conducting mine localization training.	266	Less than 24 hours	GOMEX OPAREA	1 NM x 2 NM	Surface ship HFA MIW sonar (AN/SQQ-32)	1 ship (MCM) pinging for 1 to 15 hours	2074 hours of AN/SQQ-32
						Vessel movement	1 to 2 ships maneuvering	Approximately 19 MIW surface ships conducting ULT throughout the year
COORDINATED UNIT LEVEL TRAINING								
Southeastern Anti-Submarine Warfare Integrated Training Initiative (SEASWITI) and similar RDT&E	An exercise with two DDGs, one FFG with embarked helicopter, two submarines, and one MPA	4 training events and similar RDT&E	5 to 7 days	JAX/CHASN OPAREA	30 NM x 30 NM	Surface ship MFA ASW sonar (AN/SQS-53 or AN/SQS-56)	2 to 3 ships (CG, DDG, or FFG) pinging daily for several hours	440 hours AN/SQS-53 200 hours AN/SQS-56
						Helicopter ASW dipping sonar (AN/AQS-13 or AN/AQS-22)	1 helicopter dipping several times daily (10 pings per five-minute dip)	10 hours
						Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	1 submarine pinging up to four times daily	100 pings
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-2, MK-3, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-2, MK-3, and Noise Acoustic Emitter	ADCs may be used during the event; annual total ADC expenditure shown under ASW Surface ULT
						Tonal sonobuoy (DICASS) (AN/SSQ-62)	1 MPA dropping up to 8 sonobuoys in one day; 24 sonobuoys for entire	120 tonal sonobuoys (DICASS)
						Passive sonobuoy (DIFAR)_AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)
						Vessel movement	3 to 4 ships maneuvering	3 to 4 ships maneuvering over 5-7 days, up to four times a year
Integrated ASW Course (IAC)	An exercise with three DDGs, one CG, one FFG, two to three helicopters, one to two submarines, and one MPA	5	2 to 5 days	VACAPES, CHPT, and JAX/CHASN OPAREAs	120NM X 60NM	Surface ship MFA ASW sonar (AN/SQS-53 or AN/SQS-56)	5 ships pinging for up to 10 hours	285 hours AN/SQS-53 100 hours AN/SQS-56
						Helicopter ASW dipping sonar (AN/AQS-13 or AN/AQS-22)	1 helicopter dipping up to one hour (10 pings per five-minute dip)	5 hours AN/AQS-13 or AN/AQS-22
						Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	1-2 submarines pinging up to 6 times each	60 pings
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-2, MK-3, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-2, MK-3, and Noise Acoustic Emitter	ADCs may be used during the event; annual total ADCs used shown under ASW Surface ULT
						Tonal sonobuoy (DICASS) (AN/SSQ-62)	Helicopters and/or MPA dropping up to 36 sonobuoys	180 sonobuoys
						Passive sonobuoy (DIFAR)_AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)

Event Name	Training Event Scenarios	Events per Year*	Length of Overall Event	Possible Event Areas***	Typical Event Area Dimensions	Equipment or Action	Equipment Use or Action per Event	Annual Use per Event Type*
Group Sail	An exercise with two DDGs with embarked helicopters, and one submarine.	20	2 to 3 days	VACAPES, CHPT, and JAX/CHASN OPAREAs	30 NM x 30 NM	Surface ship MFA ASW sonar (AN/SQS-53 or AN/SQS-56)	2-3 ships pinging for several hours	240 hours AN/SQS-53 120 hours AN/SQS-56
						Helicopter ASW dipping sonar (AN/AQS-13 or AN/AQS-22)	1 helicopter dipping up to 6 hours (10 pings per five-minute dip)	60 hours AN/AQS-13 or AN/AQS-22
						Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	1 submarine pinging up to two times	40 pings
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-2, MK-3, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-2, MK-3, and Noise Acoustic Emitter	ADCs may be used during the event; annual total ADCs used shown under ASW Surface ULT
						Tonal sonobuoy (DICASS) (AN/SSQ-62)	1 helicopter dropping up to 4 sonobuoys	80 sonobuoys
						Passive sonobuoy (DIFAR)_AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)
						Vessel movement	3 ships maneuvering	3 ships maneuvering over 5-7 days, up to 20 times a year
Submarine Command Course (SCC) Operations	Two submarines operating against each other as part of the SCC for prospective submarine Commanding Officers.	2	3 to 5 days	NE and JAX/CHASN OPAREAs	30 NM x 50 NM	Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	2 submarines pinging up to 12 times each	48 pings
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-2, MK-3, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-2, MK-3, and Noise Acoustic Emitter	ADCs may be used during the event; annual total ADCs used shown under ASW Surface ULT
						Vessel movement	2 submarines maneuvering	Maneuvering twice a year for 3-5 days
RONEX and GOMEX MIW Exercises	One to five MCM ships conducting mine localization training.	8	10 to 15 days	GOMEX OPAREA	20 NM x 20 NM	Surface ship HFA MIW sonar (AN/SQQ-32 and AN/SLQ-48**)	1 to 5 ships (MCM) 60-90 hours each	2,400 hours AN/SQQ-32
						Vessel movement	1 to 5 ships (MCM) maneuvering	1 to 5 ships maneuvering up to 100 days a year
STRIKE GROUP TRAINING								
ESG COMPTUEX and CSG COMPTUEX and similar RDT&E	Intermediate level battle group exercise designed to create a cohesive CSG/ ESG prior to deployment or JTFEX. Three DDGs, one FFG, helicopters, one MPA, and two submarines.	5 training events and similar RDT&E	21 days	VACAPES, CHPT, JAX/CHASN, and GOMEX OPAREAs	60 NM x 120 NM	Surface ship MFA ASW sonar (AN/SQS-53 and AN/SQS-56)	4 ships (CG, DDG, or FFG) pinging approximately 60 hours each over 10 days	740 hours AN/SQS-53 250 hours AN/SQS-56
						Helicopter ASW dipping sonar (AN/AQS-13 or AN/AQS-22)	1 to 4 helicopters (10 pings per five-minute dip) during CSG COMPTUEX	9 hours
						Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	2 submarines pinging up to 16 times each	116 pings
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-2, MK-3, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-2, MK-3, and Noise Acoustic Emitter	ADCs may be used during the event; annual total ADCs used shown under ASW Surface ULT
						Tonal sonobuoy (DICASS) (AN/SSQ-62)	MPA and/or helicopter dropping 3 to 10 sonobuoys for a total of up to 218 sonobuoys over duration of event	982 sonobuoys
						Passive sonobuoy (DIFAR)_AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)
						explosive source sonobuoy (AN/SSQ-110A)	2 MPA dropping up to 14 AN/SQ-110A sonobuoys	140 sonobuoys
						receiver (ADAR) sonobuoy (AN/SSQ-101)	Up to 5 AN/SSQ-101 sonobuoys	49 sonobuoys
						Vessel movement	6 ships (CG, DDG, FFG, or submarine) maneuvering	6 ships maneuvering up to 147 days a year

Event Name	Training Event Scenarios	Events per Year*	Length of Overall Event	Possible Event Areas***	Typical Event Area Dimensions	Equipment or Action	Equipment Use or Action per Event	Annual Use per Event Type*
JTFEX	Final fleet exercise prior to deployment of the CSG and ESG. Serves as a ready-to-deploy certification for all units. Four DDGs, two FFGs, one helicopter, one MPA, and three submarines.	2	10 days	JAX/CHASN and GOMEX OPAREAs	60 NM x 80 NM up to 180 NM x 180 NM	Surface ship MFA ASW sonar (AN/SQS-53 or AN/SQS-56)	6 ships (CG, DDG, FFG) pinging up to 25 hours each	200 hours AN/SQS-53 100 hours AN/SQS-56
						Helicopter ASW dipping sonar (AN/AQS-13 or AN/AQS-22)	1 helicopters dipping for up to one hour (10 pings per five-minute dip)	2 hours
						Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	3 submarines pinging twice each	12 pings
						Acoustic countermeasures (AN/SLQ-25 NIXIE, MK-2, MK-3, or Noise Acoustic Emitter)	2 hours per NIXIE 20 minutes per MK-2, MK-3, and Noise Acoustic Emitter	ADCs may be used during the event; annual total ADCs used shown under ASW Surface ULT
						Tonal sonobuoy (DICASS) (AN/SSQ-62)	1 MPA and/or 1 helicopter dropping 3 to 10 sonobuoys for a total of up to 174 sonobuoys over duration of event	348 sonobuoys
						Passive sonobuoy (DIFAR)_AN/SSQ-53D/E	Number of sonobuoys deployed can vary	up to 27,500 sonobuoys expended (total annual use for all exercises)
						explosive source sonobuoy (AN/SSQ-110A)	2 MPA dropping up to 14 AN/SSQ-110A sonobuoys	56 sonobuoys
						receiver (ADAR) sonobuoy (AN/SSQ-101)	Up to 5 AN/SSQ-101 sonobuoys	20 sonobuoys
						Vessel movement	9 ships (CG, DDG, FFG, or submarine) maneuvering	Up to 9 ships maneuvering for up to 40 days a year
MAINTENANCE								
Surface Ship Sonar Maintenance	Pier side and at-sea maintenance to sonar system.	410	.2 to 4 hours	Northeast, VACAPES, CHPT, and JAX/CHASN, OPAREAs		Surface ship MFA ASW sonar (AN/SQS-53 OR AN/SQS-56)	1 ship (CG, DDG, or FFG) pinging	238 hours AN/SQS-53 449 hours AN/SQS-56
Submarine Sonar Maintenance	Pier side and at-sea maintenance to sonar system.	200	1 hour	Northeast, VACAPES, CHPT, and JAX/CHASN, OPAREAs		Submarine MFA sonar (AN/BQQ-5 or AN/BQQ-10)	1 submarine pinging for up to one hour (60 pings per hour)	6000 pings (100 total hours of active sonar)

* COMPTUEX distribution reflects the typical distribtion of COMPTUEX across OPAREA boundaries.
** All events are considered equally likely to occur at any time during the year, except strike group exercises, which would not occur in the GOMEX OPAREA during hurricane season (summer and fall)

ASW - Antisubmarine warfare; CHPT - Cherry Point; COMPTUEX - Composite Training Unit Exercise; CSG - Carrier Strike Group; ESG - Expeditionary Strike Group; GOMEX - Gulf of Mexico; IAC - Integrated ASW Course; Jax/CHASN - Jacksonville/Charleston; JTFEX - Joint Task Force Exercise; MIW - Mine Warfare; MPA - Maritime Patrol Aircraft; NE - Northeast; OPAREA - Operating Area; RONEX - Squadron Exercise; SCC OPS - Submarine Command Course Operations; SEASWITI - Southeastern Antisubmarine Warfare Integrated Training Initiative; TORPEX - torpedo Exercise; ULT - Unit Level Trianing; VACAPES - Virginia Capes

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AFAST Study Area

The AFAST proposed rule contains a description of the AFAST Study Area along with a description of the areas in which certain types of activities will occur. Table 3, included here, summarizes the areas in which certain exercise types will occur. This section also contains a description of the North Atlantic right whale (NARW) critical habitat and the National Marine Sanctuaries (NMS) within the AFAST Study Area. The description of the AFAST Study Area in the proposed rule has not changed, with the exception of the paragraph relating to the NMSs, below (73 FR 60754, pages 60762–60764).

The paragraph related to NMSs in the proposed rule should be replaced with the following paragraph:

The Navy will not conduct active sonar activities within the Stellwagen Bank, Monitor, Gray's Reef, Flower Garden Banks, and Florida Keys National Marine Sanctuaries and will avoid these sanctuaries by observing a 5-km (2.7-NM) buffer. At all times, the Navy will conduct AFAST activities in a manner that avoids to the maximum extent practicable any adverse impacts on sanctuary resources. In the event the Navy determines AFAST activities, due to operational requirements, are likely to destroy, cause the loss of, or injure any sanctuary resource (for Stellwagen Bank National Marine Sanctuary, the threshold is ''may'' destroy, cause the loss of, or injure), the Navy would first consult with the Director, Office of National Marine Sanctuaries in accordance with 16 U.S.C. 1434(d). Although activities in the Sanctuaries are not planned or anticipated, NMFS' analysis, for purposes of the MMPA considers the effects on marine mammals of the Navy's conducting activities in the biologically important areas that occur in or near Sanctuaries.

	OPAREA					
	NE	VACAPES	CHPT	JAX/CHASN	GOMEX	TOTAL
Independent ULT						
Surface Ship ASW		69	91	292	5	457
Surface Ship Object Detection/Navigational Sonar		68		40		108
Helicopter ASW		25	25	115		165
Submarine ASW	30	10	14	45	1	100
Submarine Object Detection/Navigational Sonar	165	78		57		300
MPA ASW (tonal sonobuoy)	238	79	111	356	7	791
MPA ASW (explosive source sonobuoy)	34	34	34	34	34	170
Surface Ship MIW					266	266
Coordinated ULT						
SEASWITI				4		4
IAC		0.2	1.4	2.4	1	5
Group Sail		3	4	13		20
SCC Operations	0.4			1.6		2
RONEX and GOMEX Exercises					8	8
Strike Group Training						
ESG and CSG COMPTUEX*		0.2	1.4	2.4	1**	5
JTFEX		0.2	0.6	1.2	0	2
Maintenance						
Surface Ship Sonar Maintenance		61	82	263	4	410
Submarine Sonar Maintenance	30	10	14	45	1	100

Table 3. Summary of Activities by Operating Area

Description of Marine Mammals in the Area of the Specified Activities

There are 43 marine mammal species with possible or confirmed occurrence in the AFAST Study Area. As indicated in Table 4, there are 36 cetacean species (7 mysticetes and 29 odontocetes), six pinnipeds, and one sirenian (manatee). Six marine mammal species listed as federally endangered under the Endangered Species Act (ESA) and under the jurisdiction of NMFS occur in the AFAST Study Area: The NARW, humpback whale, sei whale, fin whale, blue whale, and sperm whale. Manatees are managed by the U.S. Fish and Wildlife Service and will not be addressed further here. The proposed rule contains a discussion of two species that are not considered further in the analysis (beluga whales and ringed seals) because of their rarity in the AFAST Study Area. The proposed rule also contains a discussion of important areas, including NARW critical habitat, humpback whale feeding grounds in the northeast, and sperm whale calving and nursing grounds in the Mississippi Delta area. Last, the proposed rule includes a discussion of the methods used to estimate marine mammal density in the AFAST Study Area. The Description of Marine Mammals in the Area of the Specified Activities section has not changed from what was in the proposed rule (73 FR 60754, pages 60766–60767).

Common Name	Scientific Name	ESA Status	Possible Location
Suborder Mysticeti (baleen whales)			
Family Balaenidae (right whales)			
North Atlantic Right Whale	*Eubalaena glacialis*	Endangered	East Coast
Family Balaenopteridae (rorquals)			
Humpback whale	*Megaptera novaeangliae*	Endangered	East Coast
Minke whale	*Balaenoptera acutorostrata*		East Coast
Bryde's whale	*Balaenoptera edeni*		East Coast and Gulf of Mexico
Sei whale	*Balaenoptera borealis*	Endangered	East Coast
Fin whale	*Balaenoptera physalus*	Endangered	East Coast and Gulf of Mexico
Blue whale	*Balaenoptera musculus*	Endangered	East Coast
Suborder Odontoceti (toothed whales)			
Family Physeteridae (sperm whale)			
Sperm whale	*Physeter macrocephalus*	Endangered	East Coast and Gulf of Mexico
Family Kogiidae			
Pygmy sperm whale	*Kogia breviceps*		East Coast and Gulf of Mexico
Dwarf sperm whale	*Kogia sima*		East Coast and Gulf of Mexico
Family Monodontidae (beluga and narwhal whales)			
Beluga whale	*Delphinapterus leucas*		East Coast
Family Ziphiidae (beaked whales)			
Cuvier's beaked whale	*Ziphius cavirostris*		East Coast and Gulf of Mexico
True's beaked whale	*Mesoplodon mirus*		East Coast
Gervais' beaked whale	*Mesoplodon europaeus*		East Coast and Gulf of Mexico
Sowerby's beaked whale	*Mesoplodon bidens*		East Coast
Blainville's beaked whale	*Mesoplodon densirostris*		East Coast and Gulf of Mexico
Northern bottlenose whale	*Hyperoodon ampullatus*		East Coast
Family Delphinidae (dolphins)			
Rough-toothed dolphin	*Steno bredanensis*		East Coast and Gulf of Mexico
Common bottlenose dolphin	*Tursiops truncatus*		East Coast and Gulf of Mexico
Pantropical spotted dolphin	*Stenella attenuate*		East Coast and Gulf of Mexico
Atlantic spotted dolphin	*Stenella frontalis*		East Coast and Gulf of Mexico
Spinner dolphin	*Stenella longirostris*		East Coast and Gulf of Mexico
Clymene dolphin	*Stenella clymene*		East Coast and Gulf of Mexico
Striped dolphin	*Stenella coeruleoalba*		East Coast and Gulf of Mexico
Common dolphin	*Delphinus* spp.		East Coast
Fraser's dolphin	*Lagenodelphis hosei*		East Coast and Gulf of Mexico
Risso's dolphin	*Grampus griseus*		East Coast and Gulf of Mexico
Atlantic white-sided dolphin	*Lagenorhynchus acutus*		East Coast and Gulf of Mexico
White-beaked dolphin	*Lagenorhynchus albirostris*		East Coast and Gulf of Mexico
Melon-headed whale	*Peponocephala electra*		East Coast and Gulf of Mexico
Pygmy killer whale	*Feresa attenuate*		East Coast and Gulf of Mexico
False killer whale	*Pseudorca crassidens*		East Coast and Gulf of Mexico
Killer whale	*Orcinus orca*		East Coast and Gulf of Mexico
Long-finned pilot whale	*Globicephala melas*		East Coast and Gulf of Mexico
Short-finned pilot whale	*Globicephala macrorhynchus*		East Coast and Gulf of Mexico
Family Phocoenidae			
Harbor porpoise	*Phocoena phocoena*		East Coast
Order Carnivora			
Suborder Pinnipedia			
Family Phocidae (true seals)			
Hooded seal	*Cystophora cristata*		East Coast
Harp seal	*Pagophilus groenlandica*		East Coast
Gray seal	*Halichoerus grypus*		East Coast
Harbor seal	*Phoca vitulina*		East Coast
Ringed seal	*Pusa hispida*		East Coast
Walrus	*Odobenus rosmarus*		East Coast
Order Sirenia			
Family Trichechidae (manatees)			
West Indian manatee	*Trichechus manatus*	Endangered	East Coast and Gulf of Mexico

Table 4. Species with possible or confirmed occurrence in the AFAST Study Area

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A Brief Background on Sound

The proposed rule contains a section that provides a brief background on the principles of sound that are frequently referred to in this rulemaking (73 FR 60754, pages 60767–60769). This section also includes a discussion of the functional hearing ranges of the different groups of marine mammals (by frequency) as well as a discussion of the two main sound metrics used in NMFS analysis (sound pressure level (SPL) and sound energy level (SEL)). The information contained in the proposed rule has not changed.

Potential Effects of Specified Activities on 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 AFAST Study Area, so this determination is inapplicable for this rulemaking); and (4) to prescribe requirements pertaining to monitoring and reporting.

In the Potential Effects of Specified Activities on Marine Mammals section of the proposed rule, NMFS included a qualitative discussion of the different ways that MFAS/HFAS and underwater explosive detonations (IEER) may potentially affect marine mammals (some of which NMFS would not classify as harassment). See 73 FR 60754, pages 60769–60781. Marine mammals may experience direct physiological effects (such as threshold shift), acoustic masking, impaired communications, stress responses, and behavioral disturbance. This section also included a discussion of some of the suggested explanations for the association between the use of MFAS and marine mammal strandings (such as behaviorally mediated bubble growth) that has been observed a limited number of times in certain circumstances (the specific events are also described). See 73 FR 60754, pages 60777–60781. The information contained in Potential Effects of Specified Activities on Marine Mammals section from the proposed rule has not changed, with the exception of the following sentence. On page 60779, NMFS said ''Other species (*Stenella coeruleoalba, Kogia breviceps* and *Balaenoptera acutorostrata*) have stranded, but in much lower numbers and less consistently than beaked whales.'' As a member of the public pointed out, and as NMFS has previously stated, there was no likely association between the minke whale and spotted dolphin strandings referred to here and the operation of MFAS. Therefore, the sentence should read ''Other species, such as *Kogia breviceps*, have stranded in association with the operation of MFAS, but in much lower numbers and less consistently than beaked whales.''

Later, in the Estimated Take of Marine Mammals section, NMFS relates and quantifies the potential effects to marine mammals from MFAS/HFAS and underwater detonation of explosives discussed here to the MMPA definitions of Level A and Level B Harassment. NMFS has also considered the effects of mortality on these species.

Mitigation

In order to issue an incidental take authorization (ITA) under Section 101(a)(5)(A) of the MMPA, NMFS must prescribe regulations setting forth the ''permissible methods of taking pursuant to such activity, and other means of affecting 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 AFAST activities described in the proposed rule are considered military readiness activities.

NMFS reviewed the Navy's proposed AFAST activities and the proposed AFAST mitigation measures (which the Navy refers to as Protective Measures) presented in the Navy's application to determine whether the activities and mitigation measures were capable of achieving the least practicable adverse effect on marine mammals. NMFS determined that further discussion was necessary regarding: (1) General minimization of marine mammal impacts; (2) minimization of impacts within the southeastern NARW critical habitat; and (3) the potential relationship between the operation of MFAS/HFAS and marine mammal strandings.

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 biologically important time or location) exposed to received levels of MFAS/HFAS, 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 MFAS/HFAS, 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 MFAS/HFAS, 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 to identify potential additional 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.'' NMFS and the Navy developed additional mitigation measures that address the concerns mentioned above, including the development of Planning Awareness Areas (PAAs), additional minimization of impacts in the southeastern NARW critical habitat, and a Stranding Response Plan.

The Navy's proposed mitigation measures, as well as the Planning Awareness Areas (PAAs), additional minimization of impacts in the southeastern NARW critical habitat, and Stranding Response Plan, which are required under these regulations, were described in detail in the proposed rule (73 FR 60754, pages 60781–60789). The Navy's measures address personnel training, lookout and watchstander responsibilities, operating procedures for training activities using both MFAS/HFAS and IEER, additional measures for TORPEXs in the northeastern NARW critical habitat, and mitigation related to vessel traffic and the NARW. No changes have been made to the mitigation measures described in the proposed rule, with the exception of adding that night vision devices shall be available to all ship crews and air crews for use as appropriate and making the IEER mitigation applicable to the newly described AEER system as well. Additionally, the definition for ''Exhibiting Indicators of Distress'', which was originally included in the codified text of the proposed rule, has been removed in the final rule. The definition, which may be found in the AFAST Stranding Response Plan, was not included in the codified text because it could potentially be modified (pursuant to the adaptive management component of the rule) based on new data.

The final AFAST Stranding Response Plan, which includes a shutdown protocol, a stranding investigation plan, and a requirement for Navy and NMFS to implement a memorandum of agreement (MOA) that will establish a framework whereby the Navy can (and provide the Navy examples of how they can best) assist NMFS with stranding investigations in certain circumstances, may be viewed at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*. Additionally, the mitigation measures are included in full in the codified text of the regulations.

NMFS has determined that the Navy's proposed mitigation measures (which include a suite of measures that specifically address vessel transit and the NARW), along with the Planning Awareness Areas (PAAs), additional minimization of impacts in the southeastern NARW critical habitat, and the Stranding Response Plan (and when the Adaptive Management (see Adaptive Management below) component is taken into consideration) are adequate means of effecting the least practicable adverse impacts on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, while also considering personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. The justification for this conclusion is discussed in the Mitigation Conclusion section of the proposed rule (73 FR 60836, pages 60789–60790). The Mitigation Conclusion Section of the proposed rule has not changed.

Research and Conservation Measures for Marine Mammals

The Navy provides a significant amount of funding and support for marine research. The Navy provided $26 million in Fiscal Year 2008 and plans for $22 million in Fiscal Year 2009 to universities, research institutions, Federal laboratories, private companies, and independent researchers around the world to study marine mammals. Over the past five years the Navy has funded over $100 million in marine mammal research. The Navy sponsors seventy percent of all U.S. research concerning the effects of human-generated sound on marine mammals and 50 percent of such research conducted worldwide. Major topics of Navy-supported research include the following:

- Better understanding of marine species distribution and important habitat areas,
- Developing methods to detect and monitor marine species before and during training,
- Understanding the effects of sound on marine mammals, sea turtles, fish, and birds, and
- Developing tools to model and estimate potential effects of sound.

The Navy's Office of Naval Research currently coordinates six programs that examine the marine environment and are devoted solely to studying the effects of noise and/or the implementation of technology tools that will assist the Navy in studying and tracking marine mammals. The six programs are as follows:

- Environmental Consequences of Underwater Sound,
- Non-Auditory Biological Effects of Sound on Marine Mammals,
- Effects of Sound on the Marine Environment,
- Sensors and Models for Marine Environmental Monitoring,
- Effects of Sound on Hearing of Marine Animals, and
- Passive Acoustic Detection, Classification, and Tracking of Marine Mammals.

The Navy has also developed the technical reports referenced within this document and the AFAST EIS, such as the Marine Resource Assessments. Furthermore, research cruises by NMFS and by academic institutions have received funding from the U.S. Navy.

The Navy has sponsored several workshops to evaluate the current state of knowledge and potential for future acoustic monitoring of marine mammals. The workshops brought together acoustic experts and marine biologists from the Navy and other research organizations to present data and information on current acoustic monitoring research efforts and to evaluate the potential for incorporating similar technology and methods on instrumented ranges. However, acoustic detection, identification, localization, and tracking of individual animals still requires a significant amount of research effort to be considered a reliable method for marine mammal monitoring. The Navy supports research efforts on acoustic monitoring and will continue to investigate the feasibility of passive acoustics as a potential mitigation and monitoring tool.

Overall, the Navy will continue to fund ongoing marine mammal research, and is planning to coordinate long term monitoring/studies of marine mammals on various established ranges and operating areas. The Navy will continue to research and contribute to university/external research to improve the state of the science regarding marine species biology and acoustic effects. These efforts include mitigation and monitoring programs; data sharing with NMFS and via the literature for research and development efforts; and future research as described previously.

Long-Term Prospective Study

Apart from this final rule, NMFS, with input and assistance from the Navy and several other agencies and entities, will perform a longitudinal observational study of marine mammal strandings to systematically observe and record the types of pathologies and diseases and investigate the relationship with potential causal factors (*e.g.*, sonar, seismic, weather). The proposed rule contained an outline of the proposed

study (73 FR 60754, pages 60790–60791). No changes have been made to the longitudinal study as described in the proposed rule.

Monitoring

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 MFAS/HFAS (or 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 MFAS/HFAS (at specific received levels), 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.

Proposed Monitoring Plan for AFAST Study Area

As NMFS indicated in the proposed rule, the Navy has (with input from NMFS) fleshed out the details of and made improvements to the AFAST Monitoring Plan. Additionally, NMFS and the Navy have incorporated a recommendation from the public, which recommended the Navy hold a workshop to discuss the Navy's Monitoring Plan (*see* Monitoring Workshop section). The final AFAST Monitoring Plan, which is summarized below, may be viewed at *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*. The Navy plans to implement all of the components of the Monitoring Plan: however, only the marine mammal components (not the sea turtle components) will be required by the MMPA regulations and associated LOAs.

The Monitoring Plan for AFAST has been designed as a collection of focused ''studies'' (described fully in the AFAST Monitoring Plan) to gather data that will allow the Navy to address the following questions:

(a) Are marine mammals exposed to MFAS, especially at levels associated with adverse effects (*i.e.*, based on NMFS'criteria for behavioral harassment, TTS, or PTS)? If so, at what levels are they exposed?

(b) If marine mammals are exposed to MFAS in the AFAST Study Area, do they redistribute geographically as a result of continued exposure? If so, how long does the redistribution last?

(c) If marine mammals are exposed to MFAS, what are their behavioral responses to various received levels?

(d) Is the Navy's suite of mitigation measures for MFAS (*e.g.*, measures agreed to by the Navy through permitting) effective at avoiding TTS, injury, and mortality of marine mammals?

Data gathered in these studies will be collected by qualified, professional marine mammal biologists that are experts in their field. They will use a combination of the following methods to collect data:

- Contracted vessel and aerial surveys.
- Passive acoustics.
- Marine mammal observers on Navy ships.

In the four proposed study designs (all of which cover multiple years), the above methods will be used separately or in combination to monitor marine mammals in different combinations before, during, and after training activities utilizing MFAS/HFAS. Table 7 contains a summary of the Monitoring effort that is planned for each study in each year.

This monitoring plan has been designed to gather data on all species of marine mammals that are observed in the AFAST study area. The Plan recognizes that deep-diving and cryptic species of marine mammals such as beaked whales have a low probability of detection (Barlow and Gisiner, 2006). Therefore, methods will be utilized to attempt to address this issue (*e.g.*, passive acoustic monitoring).

North Atlantic right whales will also be given particular attention during monitoring in the AFAST study area, although monitoring methods will be the same for all species. Within the AFAST study area, the Northwestern Atlantic provides unique breeding and calving habitat for NARW, and as a result, critical habitat has been designated for one calving ground (off Georgia and northern Florida) and two feeding areas (Cape Cod Bay and the Great South Channel). Pursuant to the Monitoring Plan, NARWs will be given particular attention in the form of focal follows (*e.g.* collect behavioral data using the Big Eyes binoculars, and observe the behavior of any animals that are seen) when observed.

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STUDY 1 and 3 (exposures and behavioral responses)	FY08	FY09	FY10	FY11	FY12	FY13
Aerial surveys	Award monitoring contract, develop SOP, obtain permits	SEASWITI, shallow COMPTUEX, or ULT 30 hours of active sonar	SEASWITI, shallow COMPTUEX, or ULT 30 hours of active sonar	SEASWITI, shallow COMPTUEX, or ULT 30 hours of active sonar	SEASWITI, shallow COMPTUEX, or ULT 30 hours of active sonar	SEASWITI, shallow COMPTUEX, or ULT 30 hours of active sonar
Marine Mammal Observers	Opportunistic as staff and SOP developed	SEASWITI or ULT - 60 hours	SEASWITI or ULT - 60 hours	SEASWITI or ULT - 60 hours	SEASWITI or ULT - 60 hours	SEASWITI or ULT - 60 hours
Vessel surveys (study 3 only)	Award monitoring contract, develop SOP	SEASWITI, shallow COMPTUEX, or ULT-100 hours	SEASWITI, shallow COMPTUEX, or ULT-100 hours	SEASWITI, shallow COMPTUEX, or ULT-100 hours	SEASWITI, shallow COMPTUEX, or ULT-100 hours	SEASWITI, shallow COMPTUEX, or ULT 100 hours
STUDY 2 (geographic redistribution)	**FY08**	**FY09**	**FY10**	**FY11**	**FY12**	**FY13**
Aerial surveys before and after training events	SEASWITI, shallow COMPTUEX, or ULT-24 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours
Onslow Bay Aerial surveys	100 hours	100 hours	100 hours	100 hours	100 hours	100 hours
Onslow Bay Shipboard surveys	125 hours	125 hours	125 hours	125 hours	125 hours	125 hours
Jacksonville Aerial surveys		100 hours	100 hours	100 hours	100 hours	100 hours
Jacksonville Shipboard surveys		125 hours	125 hours	125 hours	125 hours	125 hours
Passive Acoustics	Award monitoring contract 1 HARP in place and use of pop-up buoys for exercise monitoring Begin recording	Installation of remaining 3 HARPS (4 total) and use of pop-up buoys for exercise monitoring Begin recording and data analysis	Continue recording and data analysis	Continue recording and data analysis	Continue recording and data analysis	Continue recording and data analysis
Study 4 (mitigation effectiveness)	**FY08**	**FY09**	**FY10**	**FY11**	**FY12**	**FY13**
Marine mammal observers/lookout comparison	SEASWITI or ULT-24 hours	SEASWITI or ULT-40 hours	SEASWITI or ULT-40 hours	SEASWITI or ULT-40 hours	SEASWITI or ULT-40 hours	SEASWITI or ULT-40 hours
Aerial surveys before and after training events	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours	SEASWITI, shallow COMPTUEX, or ULT-40 hours

Table 5. Summary of planned monitoring effort

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Monitoring Workshop

During the public comment period on the AFAST proposed rule (as well as the Hawaii Range Complex and Southern California Range Complex proposed rules), NMFS received a comment which, in consultation with the Navy, we have chosen to incorporate into the final rule (in a modified form). One commenter recommended that a workshop or panel be convened to solicit input on the monitoring plan from researchers, experts, and other interested parties. The AFAST proposed rule included an adaptive management component and both NMFS and the Navy believe that a workshop would provide a means for Navy and NMFS to consider input from participants in determining whether or how to modify monitoring techniques to more effectively accomplish the goals of monitoring set forth earlier in the document. NMFS and the Navy believe that this workshop concept is valuable in relation to all of the Range Complexes and major training exercise rules and LOAs that NMFS is working on with the Navy at this time, and consequently this single Monitoring Workshop will be included as a component of all of the rules and LOAs that NMFS will be processing for the Navy in the next year or so.

The Navy, with guidance and support from NMFS, will convene a Monitoring Workshop, including marine mammal and acoustic experts as well as other interested parties, in 2011. The Monitoring Workshop participants will review the monitoring results from the previous two years of monitoring pursuant to the AFAST rule as well as monitoring results from other Navy rules and LOAs (*e.g.*, the Southern California Range Complex (SOCAL), Hawaii Range Complex (HRC), and other rules). The Monitoring Workshop participants would provide their individual recommendations to the Navy and NMFS on the monitoring plan(s) after also considering the current science (including Navy research and development) and working within the framework of available resources and feasibility of implementation. NMFS and the Navy would then analyze the input from the Monitoring Workshop participants and determine the best way forward from a national perspective. Subsequent to the Monitoring

Workshop, modifications would be applied to monitoring plans as appropriate.

Integrated Comprehensive Monitoring Program

In addition to the Monitoring Plan for AFAST, the Navy will complete the Integrated Comprehensive Monitoring Program (ICMP) Plan by the end of 2009. The ICMP will provide the overarching coordination that will support compilation of data from project-specific monitoring plans (*e.g.*, AFAST Monitoring Plan) as well as Navy funded research and development (R&D) studies. The ICMP will coordinate the monitoring programs progress towards meeting its goals and develop a data management plan. The ICMP will be evaluated annually to provide a matrix for progress and goals for the following year, and will make recommendations on adaptive management for refinement and analysis of the monitoring methods.

The primary objectives of the ICMP are to:

- Monitor and assess the effects of Navy activities on protected species;
- Ensure that data collected at multiple locations is collected in a manner that allows comparison between and among different geographic locations;
- Assess the efficacy and practicality of the monitoring and mitigation techniques;
- Add to the overall knowledge-base of marine species and the effects of Navy activities on marine species.

The ICMP will be used both as: (1) A planning tool to focus Navy monitoring priorities (pursuant to ESA/MMPA requirements) across Navy Range Complexes and Exercises; and (2) an adaptive management tool, through the consolidation and analysis of the Navy's monitoring and watchstander data, as well as new information from other Navy programs (*e.g.*, R&D), and other appropriate newly published information.

In combination with the 2011 Monitoring Workshop and the adaptive management component of the AFAST rule and the other planned Navy rules (*e.g.* SOCAL and HRC), the ICMP could potentially provide a framework for restructuring the monitoring plans and allocating monitoring effort based on the value of particular specific monitoring proposals (in terms of the degree to which results would likely contribute to stated monitoring goals, as well the likely technical success of the monitoring based on a review of past monitoring results) that have been developed through the ICMP framework, instead of allocating based on maintaining an equal (or commensurate to effects) distribution of monitoring effort across Range complexes. For example, if careful prioritization and planning through the ICMP (which would include a review of both past monitoring results and current scientific developments) were to show that a large, intense monitoring effort in Hawaii would likely provide extensive, robust and much-needed data that could be used to understand the effects of sonar throughout different geographical areas, it may be appropriate to have other Range Complexes dedicate money, resources, or staff to the specific monitoring proposal identified as ''high priority'' by the Navy and NMFS, in lieu of focusing on smaller, lower priority projects divided throughout their home Range Complexes.

The ICMP will identify:

- A means by which NMFS and the Navy would jointly consider prior years monitoring results and advancing science to determine if modifications are needed in mitigation or monitoring measures to better effect the goals laid out in the Mitigation and Monitoring sections of the AFAST rule.
- Guidelines for prioritizing monitoring projects.
- If, as a result of the workshop and similar to the example described in the paragraph above, the Navy and NMFS decide it is appropriate to restructure the monitoring plans for multiple ranges such that they are no longer evenly allocated (by rule), but rather focused on priority monitoring projects that are not necessarily tied to the geographic area addressed in the rule, the ICMP will be modified to include a very clear and unclassified recordkeeping system that will allow NMFS and the public to see how each Range Complex/project is contributing to all of the ongoing monitoring (resources, effort, money, etc.).

Past Monitoring in AFAST

The proposed rule contained a detailed review of the previous marine mammal monitoring conducted in the AFAST Study Area, which was conducted in compliance with the terms and conditions of multiple biological opinions issued for MFAS training activities (73 FR 60754, pages 60791–60798). No changes have been made to the discussion contained in the proposed rule.

Adaptive Management

The final regulations governing the take of marine mammals incidental to Navy's AFAST exercises contain an adaptive management component. Our understanding of the effects of MFAS/HFAS and explosives on marine mammals is still in its relative infancy, and yet the science in this field continues to improve. These circumstances make the inclusion of an adaptive management component both valuable and necessary within the context of 5-year regulations for activities that have been associated with marine mammal mortality in certain circumstances and locations (though not off the Atlantic Coast of the U.S.). The use of adaptive management will give NMFS the ability to consider new data from different sources to determine (in coordination with the Navy) on an annual basis if mitigation or monitoring measures should be modified or added (or deleted) if new data suggests that such modifications are appropriate (or are not 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 AFAST or other locations).
- Findings of the Workshop that the Navy will convene in 2011 to analyze monitoring results to date, review current science, and recommend modifications, as appropriate to the monitoring protocols to increase monitoring effectiveness.
- 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 specific stranding investigations (either from AFAST or other locations, and involving coincident MFAS/HFAS of explosives training or not involving coincident use).
- Results from the Long Term Prospective Study described above.
- Results from general marine mammal and sound research (funded by the Navy (described above) or otherwise).

Mitigation measures could be modified or added (or deleted) if new data suggest that such modifications would have (or do not have) a reasonable likelihood of accomplishing the goals of mitigation laid out in this final rule and if the measures are practicable. NMFS would also coordinate with the Navy to modify or add to (or delete) the existing monitoring requirements if the new data suggest that the addition of (or deletion of) a particular measure would more effectively accomplish the goals of monitoring laid out in this final 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 and issue 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.

Reporting

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''. Effective reporting is critical to ensure compliance with the terms and conditions of a LOA, and to provide NMFS and the Navy with data of the highest quality based on the required monitoring.

As NMFS noted in its proposed rule, additional detail has been added to the reporting requirements since they were outlined in the proposed rule. The updated reporting requirements are all included below. A subset of the information provided in the monitoring reports may be classified and not releasable to the public.

NMFS will work with the Navy to develop tables that allow for efficient submission of the information required below.

General Notification of Injured or Dead Marine Mammals

Navy personnel will ensure that NMFS (regional stranding coordinator) is notified immediately (or as soon as operational security allows) if an injured or dead marine mammal is found during or shortly after, and in the vicinity of, any Navy training exercise utilizing MFAS, HFAS, or underwater explosive detonations. The Navy will provide NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). The Stranding Response Plan contains more specific reporting requirements for specific circumstances.

Annual AFAST Monitoring Plan Report

The Navy shall submit a report annually on October 1 describing the implementation and results (through August 1 of the same year) of the AFAST Monitoring Plan, described above. Data collection methods will be standardized across range complexes to allow for comparison in different geographic locations. Although additional information will also be gathered, the marine mammal observers (MMOs) collecting marine mammal data pursuant to the AFAST Monitoring Plan shall, at a minimum, provide the same marine mammal observation data required in the MFAS/HFAS major Training Exercises section of the Annual AFAST Exercise Report referenced below.

The AFAST Monitoring Plan Report may be provided to NMFS within a larger report that includes the required Monitoring Plan Reports from multiple Range Complexes.

Annual AFAST Exercise Report

The Navy will submit an Annual AFAST Exercise Report on October 1 of every year (covering data gathered through August 1). This report shall contain the subsections and information indicated below.

MFAS/HFAS Major Training Exercises

This section shall contain the following information for the following Coordinated and Strike Group exercises, which for simplicity will be referred to as major training exercises for reporting (MTERs): Southeastern ASW Integrated Training Initiative (SEASWITI), Integrated ASW Course (IAC), Composite Training Unit Exercises (COMPTUEX), and Joint Task Force Exercises (JTFEX) conducted in AFAST:

(a) Exercise Information (for each MTER):

(i) Exercise designator.

(ii) Date that exercise began and ended.

(iii) Location.

(iv) Number and types of active sources used in the exercise.

(v) Number and types of passive acoustic sources used in exercise.

(vi) Number and types of vessels, aircraft, etc., participating in exercise.

(vii) Total hours of observation by watchstanders.

(viii) Total hours of all active sonar source operation.

(ix) Total hours of each active sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.)).

(x) Wave height (high, low, and average during exercise).

(b) Individual marine mammal sighting info (for each sighting in each MTER):

(i) Location of sighting.

(ii) Species (if not possible—indication of whale/dolphin/pinniped).

(iii) Number of individuals.

(iv) Calves observed (y/n).

(v) Initial Detection Sensor.

(vi) Indication of specific type of platform observation made from (including, for example, what type of surface vessel, *i.e.*, FFG, DDG, or CG).

(vii) Length of time observers maintained visual contact with marine mammal(s).

(viii) Wave height (in feet).

(ix) Visibility.

(x) Sonar source in use (y/n).

(xi) Indication of whether animal is <200yd, 200–500yd, 500–1000yd, 1000–2000yd, or >2000yd from sonar source in (x) above.

(xiii) Mitigation Implementation—Whether operation of sonar sensor was delayed, or sonar was powered or shut down, and how long the delay was.

(xiv) If source in use (x) is hullmounted, true bearing of animal from ship, true direction of ship's travel, and estimation of animal's motion relative to ship (opening, closing, parallel)

(xv) Observed behavior—Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animals (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming, etc.)

(c) An evaluation (based on data gathered during all of the MTERs) of the effectiveness of mitigation measures designed to avoid exposing marine mammals to MFAS. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation.

ASW Summary

This section shall include the following information as summarized from both MTERs and non-major training exercises:

(i) Total annual hours of each type of sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.))

(iv) *Cumulative Impact Report*—To the extent practicable, the Navy, in coordination with NMFS, shall develop and implement a method of annually reporting non-major (*i.e.*, other than MTERs) training exercises utilizing hull-mounted sonar. The report shall present an annual (and seasonal, where practicable) depiction of non-major training exercises geographically across the AFAST Study Area. To the extent practicable, this report will also include the total number of sonar hours (from helicopter dipping sonar and object detection exercises) conducted within the southern NARW critical habitat plus 5 nm buffer area). The Navy shall include (in the AFAST annual report) a brief annual progress update on the

status of the development of an effective and unclassified method to report this information until an agreed-upon (with NMFS) method has been developed and implemented.

Improved Extended Echo-Ranging System (IEER)/Advanced Extended Echo-Ranging System (AEER) Summary

This section shall include an annual summary of the following IEER and AEER information:

(i) Total number of IEER and AEER events conducted in AFAST Study Area

(ii) Total expended/detonated rounds (buoys).

(iii) Total number of self-scuttled IEER rounds.

Sonar Exercise Notification

The Navy shall submit to the NMFS Office of Protected Resources (specific contact information to be provided in LOA) either an electronic (preferably) or verbal report within fifteen calendar days after the completion of any MTER indicating:

(1) Location of the exercise.

(2) Beginning and end dates of the exercise.

(3) Type of exercise.

AFAST 5-Yr 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 ASW and IEER exercises for which annual reports are required (Annual AFAST Exercise Reports and AFAST Monitoring Plan Reports). This report will be submitted at the end of the fourth year of the rule (November 2012), covering activities that have occurred through June 1, 2012.

Comprehensive National ASW Report

By June 2014, the Navy shall submit a draft National Report that analyzes, compares, and summarizes the active sonar data gathered (through January 1, 2014) from the watchstanders and pursuant to the implementation of the Monitoring Plans for AFAST, SOCAL, the HRC, the Mariana Islands Range Complex, the Northwest Training Range Complex, the Gulf of Alaska, and the East Coast Undersea Warfare Training Range.

The Navy shall respond to NMFS comments and requests for additional information or clarification on the AFAST Comprehensive Report, the Comprehensive National ASW report, the Annual AFAST Exercise Report, or the Annual AFAST Monitoring Plan Report (or the multi-Range Complex Annual Monitoring Plan Report, if that is how the Navy chooses to submit the information) if submitted within 3 months of receipt. These reports will be considered final after the Navy has addressed NMFS' comments or provided the requested information, or three months after the submittal of the draft if NMFS does not comment by then.

Comments and Responses

On October 14, 2008 (73 FR 60754), NMFS published a proposed rule in response to the Navy's request to take marine mammals incidental to military readiness training, maintenance, and RDT&E activities in the AFAST Study Area and requested comments, information and suggestions concerning the request. During the 30-day public comment period, NMFS received comments from 6 private citizens and Senator Benjamin Cardin, comments from the Marine Mammal Commission (MMC), comments from the Maine Department of Marine Resources and the Georgia Department of Natural Resources, and three sets of comments from non-governmental organizations, including, the Natural Resources Defense Council (NRDC) (which commented on behalf of The Humane Society of the United States, the International Fund for Animal Welfare, Whale and Dolphin Conservation Society, Cetacean Society International, Pamlico Tar River Foundation, North Carolinians for Responsible Use of Sonar, League for Coastal Protection, and Ocean Futures Society and its founder Jean-Michel Cousteau), the Cascadia Research Collective (CRC), and the Ocean Mammal and Animal Welfare Institutes. The comments are summarized and sorted into general topic areas and are addressed below. Full copies of the comment letters may be accessed at *http://www.regulations.gov*.

NMFS worked with the Navy to develop MMPA rules and LOAs for the AFAST activities, SOCAL Range Complex, and HRC Range Complex. Many of the issues raised in the public comments for this rule were also raised for SOCAL and the HRC and NMFS considered many of the broader issues in the context of all three of these Navy actions when determining how to address the comments. Responses to public comments on the HRC and SOCAL rules (addressing similar issues identified in the AFAST final rule) were also published in January 2009 and may provide the public with additional detail, if needed.

North Atlantic Right Whales

Comment 1: Several commenters had the following general comments/concerns regarding the way that NMFS' rule analyzed the potential impacts to right whales from sonar:

(a) As the only known calving ground, the southern critical habitat is very important to the survival of the species and commenters were concerned about the level of Navy activity in critical habitat and how it will affect right whales. Some suggested that NMFS should restrict Navy activity within critical habitat.

(b) The specific impacts to and responses of newborn right whale calves and their mothers are unknown and commenters are concerned about the effects of MFAS on this segment of the population. One commenter notes that NMFS has previously indicated that the ''loss of even a single individual right whale may contribute to the extinction of the species,'' and that ''preventing the mortality of one adult female alters the projected outcome.'' 69 FR 30858.

(c) *The waters off of Gulf of Maine:* Cape Cod Bay, Great South Channel, Bay of Fundy, and the Brown's Bank area are primary feeding grounds for the North Atlantic right whale (and other large whale species) and commenters are concerned about impacts. Some commenters recommended minimizing activities in that area.

(d) One commenter stated that although the Navy's DEIS and NMFS' Proposed Rule acknowledge that right whales are expected to occur in the AFAST area, the agencies arbitrarily conclude that no right whales will be injured by the thousands of hours of sonar training exercises per year spanning the entire East Coast and Gulf of Mexico. One commenter further asserts that right whales are hard to detect because they spend the majority of their time below the surface and are often found alone or in pairs, which, combined with rough weather reduces the probability of detection. Also, female right whales with young calves are less mobile than adult whales without young calves and may not be able to avoid sonar sources.

(e) The commenters requested clarification regarding why NMFS believes that ship strikes are unlikely. Commenters further state that the Navy has been involved in ship strikes in the past (specifically, a female NARW and her near-term calf in the mid-Atlantic in 2004.)

Response: Following is NMFS' response to the above comments:

(a) NMFS agrees that the southern critical habitat for the North Atlantic right is very important to the survival of the species. The Navy intends to limit sonar use to a relatively small amount in the southern NARW critical habitat

(see response to comment (1)(e) below). As described in the proposed rule, following are the details of the planned sonar usage in the vicinity of the southern critical habitat:

■ The Navy anticipates conducting approximately 30 helicopter dipping sonar maintenance events (< 1 hr) annually in the NARW critical habitat (and approximately 84 helicopter training exercises in the vicinity of the critical habitat but in deeper waters at least more than 5 nm seaward of the critical habitat boundaries). This means that only a subset of those 30 activities will occur in the critical habitat between Nov 15 and April 15 (approximately 13 if one assumes they are distributed equally throughout the year, for example) and only a subset of the 84 helicopter training exercises would occur near the critical habitat between Nov 15 and April 15 (approximately 34 if one assumes they are distributed equally throughout the year, for example). Note that the source level of a helicopter dipping sonar is approximately 18 dB less than that of a surface sonar source, which means that the ensonified area is on the order of 65 times less (if spherical spreading is assumed). Additionally, the mitigation measures require that the Navy minimize helicopter dipping activities in the critical habitat.

■ The Navy would conduct approximately 40 ship object detection exercises (1–2 hours each) and 57 submarine object detection exercises (1–2 hours each) annually while entering/exiting port (within approximately 1 mile of shore). This means that only a subset of those activities will occur between Nov 15 and April 15, approximately 41 if one assumes they are distributed equally throughout the year, for example. Additionally, mitigation measures indicate that the Navy shall reduce the time spent conducting object detection exercises in the critical habitat, contact FACSFACJAX to obtain latest whale sightings in vicinity of critical habitat, and (to the extent operationally feasible) avoid conducting training in vicinity of recently sighted whales. Ships are required to maneuver to maintain at least 500 yds of separation from any observed whale (consistent with safety of ship).

■ The Navy's model predicted that approximately 20 takes of right whales by behavioral harassment would occur within the southern NARW critical habitat (and no takes by injury or mortality).

Time and area restrictions are one of the most effective ways to reduce impacts to protected species. By planning the limited sonar exercises outlined above and implementing the specific mitigation measures listed, the Navy has minimized, to the extent practicable, the impacts to right whales in the southern critical habitat. NMFS discusses the practicability and benefits of time and area restrictions in the Mitigation EA.

(b) The potential impacts to mother-calf pairs from sonar are specifically discussed in Potential Effects of Specified Activities on Marine Mammals section of the proposed rule. However, as the commenter suggests, the specific effects of MFAS on right whales and their calves are not discussed because NMFS does not possess data to draw any specific conclusions regarding effects. As the commenter suggests, the loss of even one right whale would have serious effects on the population; however, as discussed in the proposed rule and above, 20 instances of right whale harassment are expected to occur within the southern right whale critical habitat (over the entire year, not just from November to April) and none of these are modeled to be at injurious levels. Additionally, this take estimate does not account for the mitigation measures discussed in (a) above, which include not approaching right whales within closer than 500 yds and not conducting training within the vicinity of recently sighted whales, when feasible. For these reasons and others (see Negligible Impact section of proposed rule), NMFS was able to determine that the Navy's AFAST activities would have a negligible impact on the species.

(c) The Navy does not plan to conduct any major ASW training exercises using hull-mounted sonar in the Northeast. All of the exercises in the Northeast will consist of smaller scale unit-level exercises predominantly utilizing submarine sonar, active sonobuoys, and torpedoes (see Table 3). In the Northeast, the submarine object detection exercises would occur primarily in the near-shore submarine transiting lanes exiting Groton, Connecticut and Norfolk, Virginia (neither of which are near the important feeding areas the comment refers to). As indicated in the rule, in the Northeast the Navy is largely avoiding conducting any training in the NARW critical habitat, with one exception: Torpedo exercises (a maximum of 32 MK–48 torpedo runs at 15 minutes each or up to 24 lightweight MK–46 or MK–54 torpedoes) would occur in August through December (when right whales are less likely to be present). However, the Navy included extensive TORPEX mitigation measures that were worked out in a previous section 7 consultation with NMFS (see 216.244(a)(1)(xxviii)). Approximately 2000 sonobuoys (with 12 pings, spaced 30 seconds apart) would be used annually. Time and area restrictions are one of the most effective ways to reduce impacts to protected species. Based on the limited sonar exercises outlined above and because of the specific mitigation measures listed, NMFS believes that impacts to right whales and other large whales feeding in important areas in the Northeast will be minimal. NMFS discusses the practicability and benefits of time and area restrictions in the Mitigation EA.

(d) NMFS' rationale for why right whales will not be injured is not arbitrary. Although the Navy is proposing to conduct thousands of hours (approximately 5,000 of hull-mounted) of MFAS operation (see Table 1), several factors need to be considered. For example, the AFAST Study Area comprises over 2,170,175 square nautical miles, the exercises are spread out over the course of a year, and there are only approximately 350 right whales in the population (the number of whales is germane because at the most basic level the potential for injury is directly based on the likelihood that the ensonified area (above threshold) around the MFAS sound sources will overlap with a right whale in space and time—the fewer right whales there are, the less likely this is to happen.) The model predicts 666 exposures to levels above NMFS' acoustic threshold for behavioral harassment, but less than the level associated with PTS (or injury). Acknowledging that right whales may be somewhat harder to detect than other large whales, the Navy's modeled takes, as discussed in the Negligible Impact Analysis section of the proposed rule, do not take any mitigation measures or any likely marine mammal avoidance into consideration. Navy lookouts are specifically trained to detect anomalies in the water around the ship and both the safety of Navy personnel and success in the training exercise depend on the lookout being able to detect objects (or marine mammals) effectively around the ship. The response to Comment 2, below, explains more specifically why injury is not expected.

(e) Regarding ship strikes, the Navy's EIS concluded that based on the implementation of Navy mitigation measures, especially during times of anticipated NARW occurrence, and the relatively low density of Navy ships in the Study Area, the likelihood that a vessel strike would occur is very low (as NMFS indicated in the above comment, the low abundance of NARWs also supports this prediction). In addition to

the standard operating procedures to reduce the likelihood of collisions, which include: (1) Use of lookouts trained to detect all objects on the surface of the water (including marine mammals); (2) reasonable and prudent actions to avoid the close interactions of Navy assets and marine mammals; and (3) maneuvering to keep away from any observed marine mammal, the Navy has issued extensive North Atlantic right whale protective measures for all Fleet Forces training activities (see 216.244(a)(3)). These measures, which were developed with input from NMFS, include additional training requirements, designated areas of caution (where caution includes speed or direction adjustments and avoidance of known groups of right whales when feasible) and additional reporting requirements. NMFS and the Navy believe that the required measures will allow the Navy to avoid colliding with large whales during their specified activities. The Navy neither requested, nor did NMFS grant, authorization for take of right whales from ship strikes incidental to the specified activities.

Regarding the right whale strike in 2004, the commenter is most likely referring to an event that took place on November 17, 2004. On November 17 at about 10:30 am a Navy amphibious assault ship struck a large whale off the Chesapeake Light House. A few hours later, around noon, a fisherman contacted the Virginia Aquarium stranding hotline and reported a live injured large whale with a fresh wound on the tail where the left fluke lobe was missing. On November 24, a dead right whale was necropsied at Ocean Sands, NC. The right whale was a pregnant female and the cause of death was determined to be blood loss owing to a traumatic wound to the left fluke lobe, which was missing, and damage to surrounding tissue and bone. The wound was consistent with that caused by a ship strike. Neither NMFS, nor the Navy can confirm or deny that the dead right whale necropsied on November 24 was the same whale struck by the Navy on November 17.

The USCG and Navy have standing orders to report sightings or collisions. Although the NMFS ship strike database reflects a disproportionately high number of ship strikes attributable to USCG and Navy vessels over the years, this is likely due to the high reporting rate by those agencies relative to other mariners and vessels, rather than a higher incidence of right whale ship strikes by Federal agency vessels. These two Federal agencies are actively involved in large whale protection programs and reporting struck or dead whales to NMFS is part of their standard operating procedures.

Comment 2: One commenter stated that they disagree with NMFS' conclusion that predicted Level B harassment to right whales will likely not occur because ''many animals will likely avoid sonar sources'' and ''Navy monitors would detect these animals prior to approach and implement sonar power-down or shut-down''

Response: NMFS did not predict that Level B harassment of right whales is not likely to occur. As indicated in the rule, NMFS' LOA may authorize up to 666 Level B harassment takes of right whales. NMFS indicates that Level A Harassment (injury) and TTS (one type of Level B Harassment) are unlikely to occur because of: The distance from the source that an animal would need to approach (approximately 10 m for injury and 275–500 m for TTS) to be exposed to levels associated with injury or TTS; the fact that lookouts would detect them at that close distance; the fact that the Navy model (which does not take mitigation or avoidance into consideration) predicted that 0 right whales would be exposed to injurious levels of sound and 7 right whales would be exposed to levels associated with TTS, and; the fact that many (not all) animals avoid sonar. Additionally, the Navy is capable of effectively monitoring a 1,000-meter safety zone using night vision goggles, infrared cameras, and passive acoustic monitoring.

Monitoring and Reporting

Comment 3: One commenter stated: ''The Navy should establish a long-term research program, perhaps conducted by NMFS or by an independent agent, on the distribution, abundance, and population structuring of protected species in the AFAST Study Area, with the goal of supporting adaptive geographic avoidance of high-value habitat.'' Another commenter suggests that the Navy should conduct research and development of technologies to reduce the impacts of active acoustic sources on marine mammals.

Response: The MMPA does not require that recipients of an incidental take authorization conduct research. However, NMFS has incorporated an adaptive management component into the AFAST rule which allows for yearly review of Navy monitoring and current science that could influence (allow for the potential modification of) monitoring and mitigation measures in subsequent LOAs, if appropriate. NMFS' Mitigation EA specifically addresses NMFS' and the Navy's consideration of geographic avoidance of high-value habitat. Separately, the Navy has voluntarily developed and funded a number of research plans that are designed to address technologies to reduce the impacts of active acoustic sources on marine mammals (see Research section).

Comment 4: One commenter states that the Navy should engage in timely and regular reporting to NOAA, state coastal management authorities, and the public to describe and verify use of mitigation measures during testing and training activities.

Response: The Navy will be required to submit annual reports and the unclassified portions of these reports will be made available to the public through a **Federal Register** document announcing the issuance of subsequent LOAs. The reports will include a description of the mitigation measures implemented during major exercises and will also include an evaluation of the effectiveness of any mitigation measure implemented.

Comment 5: One commenter stated that sighting information and other behavioral data (including records of breeding, feeding, interrupted or unusual behavior) obtained by the Navy should be provided to NMFS and other interested organizations.

Response: Both the watchstanders, who are engaged in the Navy activities and responsible for detecting marine mammals for mitigation implementation, and the marine mammal observers (MMOs) implementing the Monitoring Plan, are responsible for recording their behavioral observations (the MMOs in greater detail) and then submitting them to NMFS in the required annual and comprehensive reports. Upon finalization of the reports, NMFS will make them available to the public via the NMFS Web site and through the **Federal Register**.

Comment 6: Sightings of North Atlantic right whales should be reported regardless of the time of year or location to NMFS immediately.

Response: In the southeast Atlantic, the Navy requires that Ships, surfaced subs, and aircraft shall report any NARW sightings to Fleet Area Control and Surveillance Facility (FACSFACJAX), 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). In the northeast Atlantic, the Navy requires that Ships, surfaced subs, and aircraft shall report any NARW sightings (if the whale is identifiable as a right whale) off the northeastern U.S. to 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). Both FACSFACJAX and COMPATRECONWING then report the information to NMFS. Because there is no NARW critical habitat in the mid-Atlantic region (area is not quite as critical as northeast and southeast) and the whales are less concentrated when migrating through the mid-Atlantic, the Navy does not require NARW reporting in the mid-Atlantic.

Mitigation

Comment 7: One commenter asserts that NMFS' analysis ignores or improperly discounts an array of options that have been considered and imposed by other active sonar users, including avoidance of coastal waters, high-value habitat, and complex topography; the employment of a safety zone more protective than the 1000-yard power-down and 200-yard shutdown accepted by NMFS; general passive acoustic monitoring for whales; special rules for surface ducting and low-visibility conditions; monitoring and shutdown procedures for sea turtles and large schools of fish; and many others. The commenter further provides a detailed list of 31 additional measures that should be considered. Other commenters made additional recommendations of mitigation measures that should be considered, including, especially, time and area closures in right whale calving grounds, feeding grounds, and migration corridors.

Response: NMFS considered a wide range of mitigation options in our analysis, including those listed by the commenters. 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 affecting 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 (which these Navy activities are) 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''. NMFS worked with the Navy to identify 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''. NMFS developed an Environmental Assessment (EA) that analyzes a suite of possible mitigation measures in regard to potential benefits for marine mammals (see goals of mitigation in the Mitigation section of this proposed rule) and practicability for the Navy. That EA, which considered all of the measures recommended by these public comments, is currently available on the NMFS Web site (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*) and has been relied upon to inform NMFS' MMPA decision.

Comment 8: NRDC recommends prescription of specific mitigation requirements for individual categories (or sub-categories) of testing and training activities, in order to maximize mitigation given varying sets of operational needs. Also, the Navy should require that other nations abide by U.S. mitigation measures when training in the AFAST Study Area, except where their own measures are more stringent.

Response: The Navy's standard protective measures include measures that are specific to certain categories of activities. For example, different exclusion zones are utilized for hull-mounted sonar and dipping sonar, and different range clearance procedures are used for IEER sonobuoy exercises. Pursuant to the Navy's 2000 Policy for Environmental Compliance at Sea, the commander or officer in charge of a major exercise shall provide participating foreign units with a description of the measures to protect the environment required of similar U.S. units as early as reasonable in the exercise planning process and shall encourage them to comply. However, foreign sovereign immune vessels may not be compelled to adopt such mitigation measures.

Comment 9: The Marine Mammal Commission recommends that NMFS modify the Navy's mitigation measures by requiring the Navy to delay resumption of full operational sonar use following a power-down or shutdown for 30 minutes if the sighted animal can be identified to the species level and the species is not deep diving and 60 minutes if it cannot be identified or is known to be a member of a deep-diving species such as sperm and beaked whales. They further recommend that NMFS allow resumption of full operations before the end of the 30-minute period (when the species can be identified and is not a deep diver) or 60-minute period (the species cannot be determined or can be determined but is a deep diver) only when the Navy has good evidence that the marine mammal seen outside the safety zone is the same animal originally sighted within the zone.

Response: NMFS does not concur with the MMC that we should expand the delay (until sonar can be restarted after a shutdown due to a marine mammal sighting) to 60 minutes for deep-diving species for the following reasons:

- The ability of an animal to dive longer than 30 minutes does not mean that it will always do so. Therefore, the 60-minute delay would only potentially add value in instances when animals had remained under water for more than 30 minutes.
- Navy vessels typically move at 10–12 knots (5–6 m/sec) when operating active sonar and potentially much faster when not. Fish *et al.* (2006) measured speeds of 7 species of odontocetes and found that they ranged from 1.4–7.30 m/sec. Even if a vessel was moving at the slower typical speed associated with active sonar use, an animal would need to be swimming near sustained maximum speed for an hour in the direction of the vessel's course to stay within the safety zone of the vessel. Increasing the typical speed associated with active sonar use would further narrow the circumstances in which the 60-minute delay would add value.
- Additionally, the times when marine mammals are deep-diving (*i.e.*, the times when they are under the water for longer periods of time) are the same times that a large portion of their motion is in the vertical direction, which means that they are far less likely to keep pace with a horizontally moving vessel.
- Given that, the animal would need to have stayed in the immediate vicinity of the sound source for an hour and considering the maximum area that both the vessel and the animal could cover in an hour, it is improbable that this would randomly occur. Moreover, considering that many animals have been shown to avoid both acoustic sources and ships without acoustic sources, it is improbable that a deep-diving cetacean (as opposed to a dolphin that might bow ride) would choose to remain in the immediate vicinity of the source. NMFS believes that it is unlikely that a single cetacean would remain in the safety zone of a Navy sound source for more than 30 minutes.

• Last, in many cases, the lookouts are not able to differentiate species to the degree that would be necessary to implement this measure. Plus, Navy operators have indicated that increasing the number of mitigation decisions that need to be made based on biological information is more difficult for the lookouts (because it is not their area of expertise).

Comment 10: The MMC recommends that NMFS work with the Navy to validate the performance of Navy lookouts, to conduct similar testing to validate passive acoustic monitoring methods, and to complete such tests before the Navy proceeds with its AFAST training operations.

Response: Navy lookouts are specifically trained to detect anomalies in the water around the ship and both the safety of Navy personnel and success in the training exercise depend on the lookout being able to detect objects (or marine mammals) effectively around the ship. NMFS has reviewed the Navy's After Action Reports from previous exercises and they show that lookouts are detecting marine mammals, and implementing sonar shutdowns as required. That said, the AFAST Monitoring Plan contains a study in which Navy lookouts will be on watch simultaneously with non-Navy marine mammal observers and their detection rates will be compared. NMFS and the Navy have developed (since the proposed rule) more rigorous reporting requirements that should allow for more meaningful comparisons between Navy lookouts, Navy MMOs, and peer-reviewed data, as well as meaningful comparisons between both occurrence and behavior of marine mammals in the presence and absence of sonar operation. NMFS agrees that the review of post-exercise reports is critical, and through the implementation of the more rigorous reporting requirements that have been laid out in the final rule (versus the proposed rule) we should be able to reach well-supported conclusions regarding the effects of MFAS on marine mammals. Additionally, the regulations and subsequent authorization would require the Navy to provide ''an evaluation (based on data gathered during all of the major training exercises) of the effectiveness of mitigation measures designed to minimize the exposure of marine mammals to mid-frequency sonar. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation included in the authorization.'' Last, the rule contains an adaptive management component that specifies that NMFS and the Navy will meet on an annual basis to evaluate the Navy Reports (on both Navy lookout observations as well as Monitoring Plan reporting) and other new information (such as Navy R & D developments or new science) to ascertain whether mitigation or monitoring modifications are appropriate.

The MMOs conducting the Monitoring pursuant to the Monitoring Plan are professional marine mammal scientists and NMFS does not believe that it is necessary to validate the methods that they use for passive acoustic monitoring. Currently, passive acoustics are used by Navy operators to increase awareness of nearby marine mammals, but are not used to directly trigger mitigation measures. Therefore, NMFS does not believe that a validation of those methods is necessary. Additionally, any systems used in the detection of marine mammals are the same systems used for enemy detection and NMFS is confidant that they are fully operational. NMFS acknowledges the opportunity for improvement via the use of dedicated passive or active sonar to detect marine mammals for mitigation implementation. However, current technology does not allow the Navy to detect, identify, and localize marine mammals and transmit this information to operators real-time while also not substantially reducing the effectiveness of the fast-paced and complicated exercises that the Navy must conduct. The Navy is committed, however, to technological development in the area of marine mammal protection and is currently funding multiple research projects towards this goal (see Research section).

Comment 11: One commenter stated: The Navy's proposed mitigation methods are woefully inadequate. If a marine mammal is spotted and reported within 1,000 yards of the sonar dome the sonar will not be stopped but will be turned down by a mere 6 decibels (from the normal operating level of 235 db) to 229 decibels—still over 10 million times more intense than the Navy's human diver standard of 145 decibels and over a million times more than the noise level received by the animals in the Bahamas incident of 2000.

Response: In order to analyze potential effects to marine mammals from sound it is important to understand the difference between source level (the sound level about 1 meter from the sound source) and received level (the level that an animal hears, which is largely based on how far it is from the source). The commenter is comparing source levels (235 and 229 dB) to a diver standard that is based on received level (as are all of the levels that are referenced by scientists in relation to marine mammal responses). Of note, many odontocete species vocalizations have been recorded in the field and the source levels estimated at above 210 dB, including sperm whales (up to 236 dB), Blainville's and Cuvier's beaked whales, bottlenose dolphins and pantropical and Atlantic spotted dolphins. The ability of the Navy's mitigation measures to avoid injury is discussed in the response to comment #2.

Additionally, the reference to 145 dB is incorrect. The Naval Sea Systems Command Instruction (NAVSEAINST) 3150.2, ''Safe Diving Distances from Transmitting Sonar,'' is the Navy's governing document for human divers in relation to mid-frequency active sonar systems. That instruction provides procedures for calculating safe distances from active sonars. Such procedures are derived from experimental and theoretical research conducted at the Naval Submarine Medical Research Laboratory and the Naval Experimental Diving Unit. Inputs to those procedures include diver dress, type of sonar, and distance from the sonar. The output is represented as a permissible exposure limits (*i.e.*, how long the diver can safely stay at that exposure level). For example, a diver wearing a wetsuit without a hood has a permissible exposure limit of 71 minutes at a distance of 1000 yds from the AN/SQS–53 sonar. That same instruction advises that if the type of sonar is unknown, divers should start 1000 yds from the source and move closer (as needed) to the limits of diver comfort. If an interaction did occur, it is unlikely the active sonar activity would not be conducted close enough to a diver to trigger the permissible exposure limit. Assuming spherical spreading, the 1000 yd distance equates to a receive level of approximately 175 dB.

Of note, if spherical spreading is assumed, turning down the sonar by 6 dB reduces the radial distance to any particular received level by half, which means that the ensonified area is decreased by approximately 75 percent.

Comment 12: One commenter stated: ''According to the Navy's proposed mitigation measures, the sonar will only be shut down when an animal is spotted within 200 yards of the sonar dome. By the time the sonar has traveled that far, it will already have been ensonified for many minutes with noise equivalent to that which caused the Bahamas whales to strand and die. To shut off the sonar when an animal is observed and

reported at 200 yards will already be too late.''

Response: The required powerdown and shutdown zones, if properly implemented, will avoid exposing marine mammals to levels associated with injury and minimize the number of marine mammals exposed to levels associated with TTS (see Mitigation conclusion section of proposed rule). Sonar is not shutdown until or unless an animal approaches within 200 yds, However, if it is sighted at distances greater than 200 yds, the sound will already have been reduced as a result of either a 6-dB (1000 yds) or 10-dB (500 yds) powerdown, which will have notably reduced the levels an animal is exposed to prior to entering the 200-yd safety zone. Separately, as discussed in NMFS' response to comment #13, there is no way to know the levels that the whales in the Bahamas were exposed to that caused them to respond the way that they did.

Comment 13: Several commenters were concerned that visual observation by lookouts would not be effective to detect marine mammals (especially beaked whales, which are only at surface 8 percent of the time and for which the chance of sighting has been calculated at about 2 percent, and especially in anything but calm weather). They were further concerned that, therefore, mitigation would not be effectively implemented and the Navy would not be able to avoid injuring marine mammals, as asserted by NMFS.

Response: As explained in the proposed rule, injury of marine mammals is unlikely to occur because an animal would need to approach to within approximately 10 m of the source to be exposed to levels associated with injury (and animals are likely avoiding both vessels and sound sources at that close distance) combined with the fact that lookouts would likely detect most marine mammals at that close distance. NMFS acknowledges that beaked whales are notably more difficult to detect: however, the Navy model (which does not take mitigation or avoidance into consideration) predicted that 0 beaked whales would be exposed to injurious levels of sound.

Nonetheless, NMFS acknowledges the opportunity for improvement via the use of dedicated passive or active sonar to detect marine mammals for mitigation implementation. However, current technology does not allow the Navy to detect, identify, and localize marine mammals and transmit this information to operators real-time while also not substantially reducing the effectiveness of the fast-paced and complicated exercises that the Navy must conduct. The Navy is committed, however, to technological development in the area of marine mammal protection and is currently funding multiple research projects towards this goal (*see* Research section).

Acoustic Thresholds for TTS and PTS

Comment 14: One commenter asserts that NMFS disregards data gained from actual whale mortalities. The commenter cites to peer-reviewed literature that indicates that sound levels at the most likely locations of beaked whales beached in the Bahamas strandings run far lower than the Navy's threshold for injury here: approximately 150–160 dB re 1 μPa for 50–150 seconds, over the course of the transit. A further modeling effort, undertaken in part by the Office of Naval Research, the commenter states, suggests that the mean exposure level of beaked whales, given their likely distribution in the Bahamas' Providence Channels and averaging results from various assumptions, may have been lower than 140 dB re 1 μPa. Last the commenter suggests that when duration is factored in, evidence would support a maximum energy level (''EL'') threshold for serious injury on the order of 182 dB re 1 μPa2•s, at least for beaked whales.

Response: No one knows where the beaked whales were when they were first exposed to MFAS in the Bahamas or the duration of exposure for individuals (in regards to maximum EL) and, therefore, we cannot accurately estimate the received level that triggered the response that ultimately led to the stranding. Therefore, NMFS is unable to quantitatively utilize any data from this event in the mathematical model utilized to estimate the number of animals that will be ''taken'' incidental to the Navy's proposed action. However, NMFS does not disregard the data. The proposed rule includes a qualitative discussion of the Bahamas stranding and four other strandings that NMFS and the Navy agree were likely attributable to MFAS. These data illustrate a ''worst case scenario'' of the range of potential effects from sonar and the analysis of these strandings supports the Navy's request for authorization to take 10 individuals of several species by mortality over the 5-yr period.

Comment 15: One commenter notes that in the SOCAL proposed rule, NMFS sets its threshold for temporary hearing loss and behavioral effects, or ''temporary threshold shift'' (''TTS''), at 183 dB re 1 μPa^2•s for harbor seals, 204 dB re 1 μPa^2•s for northern elephant seals, and 206 dB re 1 FPa^2•s for California sea lions (73 FR. 60878). However, the commenter notes, in the proposed rule for AFAST, NMFS indicates that the TTS threshold for pinnipeds is 183 dB re 1 μPa^2•s for pinnipeds. NMFS does not explain the difference in thresholds. The commenter makes the same comment for the PTS thresholds (which are 20 dB higher than the TTS thresholds).

Response: As noted in the SOCAL proposed rule, the TTS thresholds are 183 dB re 1 FPa^2•s for harbor seals (and closely related species), 204 dB re 1 μPa2•s for northern elephant seals (and closely related species), and 206 dB re 1 μPa^2•s for California sea lions (and closely related species) (73 FR 60878). The commenter is correct, in the AFAST proposed rule, NMFS did not fully explain that all of the pinniped species that might be exposed to MFAS are ''closely related'' to harbor seals (the thresholds for northern elephant seals and California sea lions are not applicable because these species are not present in the AFAST Study Area). Therefore, the 183 dB SEL is the pinniped threshold applied in AFAST. Accordingly, the AFAST final rule has been amended to clarify this issue and be consistent with the SOCAL final rule. The same answer applies to the comment about PTS thresholds.

Comment 16: The Navy's exclusive reliance on energy flux density as its unit of analysis does not take other potentially relevant acoustic characteristics into account. Reflecting this uncertainty, the Navy should establish a dual threshold for marine mammal injury.

Response: NMFS currently uses the injury threshold recommended by Southall *et al.* (2007) for MFAS. Specifically, NMFS uses the 215-dB SEL sound exposure level threshold (the commenter refers to it as energy flux density level). Southall *et al.* (2007) presents a dual threshold for injury, which also includes a 230-dB peak pressure level threshold. NMFS discussed this issue with the Navy early in the MMPA process and determined that the 215-dB SEL injury threshold was the more conservative of the two thresholds (*i.e.*, the 230-dB peak pressure threshold occurs much closer to the source than the 215-dB SEL threshold) and therefore it was not necessary to consider the 230-dB peak pressure threshold further. For example, an animal will be within the 215-dB SEL threshold and counted as a take before it is exposed to the 230-dB threshold. NMFS concurs with Southall *et al.* (2007), which asserts that for an exposed individual, whichever criterion is exceeded first, the more precautionary of the two measures

should be used as the operative injury criterion.

Comment 17: One commenter states that the calculation of PTS (which is equated to the onset on injury) is based on studies of TTS that, as discussed below, are significantly limited.

Response: NMFS addressed this issue in response to comments 13 through 15.

Behavioral Harassment Threshold

Comment 18: The NRDC submitted a comprehensive critique of the risk function (authored by Dr. David Bain), which NMFS has posted on our Web site (*http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*). NRDC summarized some general limitations of the risk function and included a fairly detailed critique of the specific structure of and parameters chosen for use in the model. Following are some of the general topics addressed in the letter:

- Factors that Dr. Bain thinks should be addressed by the model, such as social interactions and multiple sources.
- Critique of the datasets that NMFS used to populate the risk function (described Level B Harasssment—Risk Function section of the proposed rule): (1) Controlled Laboratory Experiments with Odontocetes (SSC Dataset); (2) Mysticete Field Study (Nowacek *et al.*, 2004), and (3) Odontocet Field Data (Haro Strait—USS Shoup).
- Consideration of some datasets that were considered by NMFS, but not used in the risk function.
- A critique of the parameters (A, B, and K) used in the risk function.
- A sensitivity analysis of the parameters (*i.e.*, takes were modeled while applying variable values for the A, B, and K values).

Dr. Bain included a summary of his concerns and an abbreviated version is included below. Additionally (and not included in the summary), Dr. Bain suggested that the effect of multiple sources may be both different and greater than the effects of fewer sources and provided supporting examples. (comments that were in Dr. Bain's summary, but have been addressed elsewhere in this Comment Response section are not included below):

- In summary, development of a function that recognizes individual variation is a step in the right direction.
- The selected equation is likely to produce underestimates of takes due to asymmetries in the number of individuals affected if parameters are either underestimated or overestimated due to uncertainty. Thus it will be important to use the risk function in a precautionary manner.
- The sensitivity analysis reveals the importance of using as many datasets as possible. First, for historical reasons, there has been an emphasis on high energy noise sources and the species tolerant enough of noise to be observed near them. Exclusion of the rarer datasets demonstrating responses to low levels of noise biases the average parameter values, and hence underestimates effects on sensitive species.
- A similar mistake was made with the right whale data. The level at which 100 percent of individuals responded was used as the value at which 50 percent of individuals responded (B+K). Likewise, the level at which 100 percent of killer whales responded to mid-frequency sonar is less than the value derived for B+K in the HRC SDEIS (Dept. Navy 2008b).
- It is likely that biological B values should be in the range from just detectable above ambient noise to 120 dB re 1 μPa. The resulting mathematical B value could be tens of dB lower, not the 120 dB re 1 μPa proposed. For many species, risk may approach 100 percent in the range from 120–135 dB re 1 μPa, putting K in the 15–45 dB range.
- The A values do not seem well supported by the data, and in any case, are likely to be misleading in social species as the risk function is likely to be asymmetrical with a disproportionate number of individuals responding at low noise levels. Rather than one equation fitting all species well, parameters are likely to be species typical.
- As realistic parameter values are lower than those employed in the HRC SDEIS (Dept. Navy 2008b), AFAST DEIS (Dept. Navy 2008a) and related DEIS's, take numbers should be recalculated to reflect the larger numbers of individuals likely to be taken. The difference between the parameter values estimated here and those used in the SDEIS suggests takes were underestimated by two orders of magnitude.

Response: Many of the limitations outlined in Dr. Bain's document were raised by other commenters and are addressed elsewhere in this Comment and Response Section and will not be addressed again here. Below, NMFS responds to the specific points summarized above.

- *The effects of multiple sources:* Mathematically, the Navy's exposure model has already accounted for takes of animals exposed to multiple sources in the number of estimated takes. NMFS concurs with the commenter, however, in noting that the severity of responses of the small subset of animals that are actually exposed to multiple sources simultaneously could potentially be greater than animals exposed to a single source due to the fact that received level, both SPL and SEL, would be slightly higher and because contextually it could be perceived as more threatening to an animal to receive multiple stimuli coming from potentially multiple directions at once (for example, marine mammals have been shown to respond more severely to sources coming directly towards them, vs. obliquely (Wartzok, 2004)). However, it is also worth noting that according to information provided by the Navy, surface vessels do not typically operate closer than 10–20 miles from another surface vessel (and greater distance is ideal), and other sonar sources, such as dipping sonar and sonobuoys, are almost always used 20 or more miles away from the surface vessel. This means that if the two most powerful sources were operating at the closest distance they are likely to (10 miles), in the worst case scenario, animals that would have been exposed to 150 dB SPL or less (taken from table 16 of the proposed rule) may be exposed to slightly higher levels or to similar levels or less coming from multiple directions.
- *Underestimates of takes due to asymmetries in the number of individuals affected when parameters are underestimated and overestimated due to uncertainty:* The commenter's point is acknowledged. When a sensitivity analysis is conducted and parameters are varied (both higher and lower values used)—the degree of difference in take estimates is much greater when the parameter is adjusted in one direction than in the other, which suggests the way that this generalized model incorporates uncertainty may not be conservative. However, in all cases when the adjustment of the parameter in a certain direction results in a disproportionately (as compared to an adjustment in the other direction) large increase in the number of takes, it is because the model is now estimating that a larger percentage of animals will be taken at greater distances from the source. This risk function is based completely on the received level of sound. As discussed in the proposed rule, there are other contextual variables that are very important to the way that an animal responds to a sound, such as nearness of the source, relative movement (approaching or retreating), or the animals familiarity with the source. Southall *et al.* (2007) indicates that the presence of high-frequency components and a lack of reverberation (which are

indicative of nearness) may be more relevant acoustic cues of spatial relationship than simply exposure level alone. In the AFAST activities, an animal exposed to between 120 and 130 dB may be more than 75 nm from the sonar source. NMFS is not aware of any data that describe the response of any marine mammals to sounds at that distance, much less data that indicate that an animal responded in a way we would classify as harassment at that distance. Because of this, NMFS does not believe it is currently possible or appropriate to modify the model to further address uncertainty if doing so results in the model predicting that much larger numbers of animals will be taken at great distances from the source when we have no data to suggest that that would occur.

• *Using many datasets:* NMFS has explained both in the rule, and then again elsewhere in these comments, why we chose the three datasets we did to define the risk function. As Dr. Bain points out, there are datasets that report marine mammal responses to lower levels of received sound. However, because of the structure of the curve NMFS is using and what it predicts (Level B Harassment), we need datasets that show a response that we have determined qualifies as harassment (in addition to needing a source that is adequately representative of MFAS and reliable specific received level information), which many of the lower level examples do not.

• *50 percent vs. 100 percent response:* Dr. Bain asserts that two of the three datasets (Nowacek *et al.*, 2004 and Haro Strait—USS SHOUP) that NMFS uses to derive the 50 percent response probability in the risk function actually report a 100 percent response at the indicated received levels. For the Haro Strait dataset, a range of estimated received levels at the closest approach to the J Pod were estimated. Given that neither the number of individual exposures or responses were available, the mean of this range was used as a surrogate for the 50 percent response probability in the development of the risk function. For the Nowacek data, NMFS used 139.2 dB, which is the mean of the received levels at which 5 of 6 animals showed a significant response to the signal. However, viewed another way, of 6 animals, one animal did not respond to the signal and the other five responded at received levels of 133 dB, 135 dB, 137 dB, 143 dB, and 148 dB, which means that 3 of the 6 animals (50 percent) showed a significant response at 139.2 dB or less.

• *120 dB basement value:* When the broad array of data reported from exposures across taxa and to varied sources are reviewed, NMFS believes that 120 dB is an appropriate B value for a curve designed to predict responses that rise to the level of an MMPA harassment (not just any response). The available data do not support the commenter's assertion that risk may approach 100 percent in the range from 120–135 dB for many species. For example, the Southall *et al.* (2007) summary of behavioral response data clearly shows, in almost every table (for all sound types), reports of events in which animals showed no observable response, or low-level responses NMFS would not likely consider harassment, in the 120 to 135-dB range. For the species (the harbor porpoise) for which the data do support that assertion, which the Southall *et al.* (2007) paper considers ''particularly sensitive'', NMFS has implemented the use of a species-specific step function threshold of 120 dB SPL.

• *The A value:* Please see the second bullet of this response for the first part of the answer. NMFS concurs with the commenter that species-specific parameters would likely be ideal, however there are not currently enough applicable data to support separate curves for each species. We note, though, that even with species-specific parameters, the context of the exposure will still likely result in a substantive variability of behavioral responses to the same received level by the same species.

• *Recalculation:* For the reasons described in the bullets above in this response, NMFS disagrees with the commenter's assertion that the parameters used in the proposed rule and the EIS are unrealistic and that they result in take estimates that are too small by two orders of magnitude. We do not believe that a recalculation is necessary.

The science in the field of marine mammals and underwater sound is evolving relatively rapidly. NMFS is in the process of revisiting our acoustic criteria with the goal of developing a framework (Acoustic Guidelines) that allows for the regular and scientifically valid incorporation of new data into our acoustic criteria. We acknowledge that this model has limitations, however, the limitations are primarily based on the lack of applicable quantitative data. We believe that the best available science has been used in the development of the criteria used in this and other concurrent Navy rules and that this behavioral harassment threshold far more accurately represents the number of marine mammals that will be taken than the criteria used in the RIMPAC 2006 authorization. We appreciate the input from the public and intend to consider it further as we move forward and develop the Acoustic Guidelines.

Comment 19: One commenter expressed the concern that NMFS blindly relies on TTS studies conducted on 7 captive animals of two species (to the exclusion of copious data on animals in the wild) as a primary source of data for the behavioral harassment threshold. The commenter further asserts that these studies (on highly trained animals that do not represent a normal range of variation within their own species, as they have been housed in a noisy bay for most of their lives) have major deficiencies, which NMFS ignores by using the data.

Response: As mentioned in comment #18, the SSC Dataset (Controlled Laboratory Experiments with Odontocetes) is not the primary source of data for the behavioral harassment threshold; rather, it is one of three datasets (other two datasets are from wild species exposed to noise in the field) treated equally in the determination of the K value (equates to midpoint) of the behavioral risk function. NMFS recognizes that certain limitations may exist when one develops and applies a risk function to animals in the field based on captive animal behavioral data. However, we note that for the SSC Dataset: (1) Researchers had superior control over and ability to quantify noise exposure conditions; (2) behavioral patterns of exposed marine mammals were readily observable and definable; and, (3) fatiguing noise consisted of tonal noise exposures with frequencies contained in the tactical mid-frequency sonar bandwidth. NMFS does not ignore the deficiencies of these data, rather we weighed them against the value of the data and compared the dataset to the other available datasets and decided that the SSC dataset was one of the three appropriate datasets to use in the development of the risk function.

Comment 20: One commenter stated ''NMFS excludes a substantial body of research on wild animals (and some research on other experimental animals as well, within a behavioral experimental protocol). Perhaps most glaringly, while the related DEIS prepared for the Navy's AFAST activities appears to acknowledge the strong sensitivity of harbor porpoises by setting an absolute take threshold of 120 dB (SPL)—a sensitivity that, as NMFS has noted, is reflected in numerous wild and captive animal studies—the agencies improperly fail to include any of these studies in their data set. The result is clear bias, for even if one assumes (for argument's sake) that the

SPAWAR data has value, NMFS has included a relatively insensitive species in setting its general standard for marine mammals while excluding a relatively sensitive one.''

Response: As explained in the Level B Harassment (Risk Function) section of the proposed rule the risk function is based primarily on three datasets (SSC dataset, Nowacek *et al.* (2004), and Haro Strait—USS SHOUP) in which marine mammals exposed to mid-frequency sound sources were reported to respond in a manner that NMFS would classify as Level B Harassment. NMFS considered the ''substantial body of research'' that the commenter refers to but was unable to find other datasets that were suitable in terms of all of the following: The equivalency of the sound source to MFAS, a reported behavioral response that NMFS would definitively consider Level B Harassment, and a received level reported with high confidence. The SSC dataset is only one of three used and, in fact, the other 2 datasets (which are from wild animals—killer whales and North Atlantic right whales) both report behavioral responses at substantively lower levels (*i.e.*, the ''relatively insensitive'' species is not driving the values in the function).

Comment 21: The risk function must take into account the social ecology of some marine mammal species. For species that travel in tight-knit groups, an effect on certain individuals can adversely influence the behavior of the whole. Should those individuals fall on the more sensitive end of the spectrum, the entire group or pod can suffer significant harm at levels below what the Navy would use as the mean. In developing its ''K'' parameter, NMFS must take into account the potential for indirect effects.

Response: The risk function is intended to define the received level of MFAS at which exposed marine mammals will experience behavioral harassment. The issue the commenter raises is related to the Navy's exposure model—not the risk function. However, because of a lack of related data there is no way to numerically address this issue in the model. Although the point the commenter raises could potentially apply, one could also assert that if certain animals in a tight knit group were less sensitive it would have the opposite effect on the group. Additionally, the modeling is based on uniform marine mammal density (distributed evenly over the entire area of potential effect), which does not consider the fact that marine mammals appearing in pods will be easier to detect and therefore the Navy will be more likely to implement mitigation measures that avoid exposing the animals to the higher levels received within 1000 m of the source.

Comment 22: One commenter stated ''NMFS appears to have misused data garnered from the Haro Strait incident—one of only three data sets it considers—by including only those levels of sound received by the ''J'' pod of killer whales when the USS Shoup was at its closest approach. These numbers represent the maximum level at which the pod was harassed; in fact, the whales were reported to have broken off their foraging and to have engaged in significant avoidance behavior at far greater distances from the ship, where received levels would have been orders of magnitude lower. We must insist that NMFS provide the public with the Navy's propagation analysis for the Haro Strait event, which it used in preparing its 2005 Assessment of the incident.''

Response: For the specific application in the risk function for behavioral harassment, NMFS used the levels of sound received by the ''J'' pod when the USS Shoup was at its closest approach because a review of the videotapes and other materials by NMFS detailing the behavior of the animals in relation to the location of the Navy vessels showed that it was after the closest approach of the vessel that the whales were observed responding in a manner that NMFS would classify as ''harassed''. Though animals were observed potentially responding to the source at greater distances, NMFS scientists believed that the responses observed at greater distances were notably less severe and would not rise to the level of MMPA harassment. Though the received levels observed in relation to the lesser responses could be used in some types of analytical tools, the risk continuum specifically requires that we use received sound levels that are representative of when MMPA harassment likely occurred. The Navy's report may be viewed at: *http://www.acousticecology.org/docs/SHOUPNavyReport0204.pdf.*

Comment 23: One commenter asserts that NMFS' threshold is applied in such a way as to preclude any assessment of long-term behavioral impacts on marine mammals. It does not account, to any degree, for the problem of repetition: the way that apparently insignificant impacts, such as subtle changes in dive times or vocalization patterns, can become significant if experienced repeatedly or over time.

Response: NMFS' threshold does not preclude any assessment of long-term behavioral impacts on marine mammals. The threshold is a quantitative tool that NMFS uses to estimate individual behavioral harassment events. Quantitative data relating to long-term behavioral impacts are limited, and therefore NMFS' assessment of long-term behavioral impacts is qualitative in nature (*see* Diel Cycle section in Negligible Impact Analysis section). NMFS' analysis discusses the potential significance of impacts that continue more than 24 hours and/or are repeated on subsequent days and, though it does not quantify those impacts, further indicates that these types of impacts are not likely to occur because of the nature of the Navy's training activities and the large area over which they are conducted.

Effects Analysis

Comment 24: One commenter stated: ''NMFS does not properly account for reasonably foreseeable reverberation effects (as in the Haro Strait incident), giving no indication that its modeling sufficiently represents areas in which the risk of reverberation is greatest.''

Response: The model does indirectly incorporate surface-ducting (surface reverberation), as conditions in the model are based on nominal conditions calculated from a generalized digitalized monthly average. Though the model does not directly consider reverberations, these effects are generally at received levels many orders of magnitude below those of direct exposures (as demonstrated in the Haro Strait analysis associated with bottom reverberation) and thus contribute essentially nothing to the cumulative SEL exposure and would not result in the exposure of an animal to a higher SPL than the direct exposure, which is already considered by the model.

Comment 25: One commenter states that though the numbers of animals that the Navy predicts its proposal will impact are worryingly high, they believe them to be gross underestimates of the real numbers of animals potentially at risk because of the thresholds the Navy is using to predict behavioral disturbance and levels of deafness. The Navy is using 215 dB (re 1 μPa^2-s) as the threshold above which it says permanent deafness (PTS) will occur and 195 dB (re 1 μPa^2-s) as the threshold above which it says temporary deafness (TTS) will occur. Behavioral impacts are predicted based on a dose response function.

Response: Contrary to what the commenter states, in the Model Overestmation section of the proposed rule NMFS clearly explains why the authorized take numbers are likely notably higher than the takes that will actually occur.

To clarify, PTS is not permanent deafness, rather it is permanent threshold shift, which means that the hearing sensitivity has been permanently reduced by a certain amount, which could be a small amount or a larger amount (the longer and higher level the exposure to the sound, the more likely PTS will be of a larger amount). Of note, reduced hearing sensitivity as a simple function of development and aging has been observed in marine mammals, as well as humans and other taxa (Southall *et al.*, 2007), so we can infer that strategies exist for coping with this condition to some degree, though likely not without cost. There is no empirical evidence that exposure to MFAS/HFAS can cause PTS in any marine mammals; instead the probability of PTS has been inferred from studies of TTS. Similarly, TTS is not temporary deafness, rather a temporary reduction in hearing sensitivity.

Comment 26: NMFS fails to include data from the July 2004 Hanalei Bay event, in which 150–200 melon-headed whales were embayed for more than 24 hours during the Navy's Rim of the Pacific exercise. According to the Navy's analysis, predicted mean received levels (from mid-frequency sonar) inside and at the mouth of Hanalei Bay ranged from 137.9 dB to 149.2 dB. NMFS' failure to incorporate these numbers into its methodology as another data set is not justifiable.

Response: NMFS' investigation of the Hanalei event concluded that there was insufficient evidence to determine causality. There are a number of uncertainties about sonar exposure and other potential contributing factors and assumptions inherent to a reconstruction of events in which sonar was the causative agent that simply preclude this determination. Because of this, NMFS did not use the numbers (137.9–149.2 dB) in our methodology. Additionally, even if NMFS had concluded that MFAS were the causative agent, insufficient evidence exists regarding the received level when the animals responded (there is no information regarding where they were when they would have first heard the sound).

Comment 27: Two commenters noted that little is known about most species of beaked whales and most of that knowledge has come from carcasses, as sightings of live animals are generally rare. With few exceptions, there is almost nothing known about beaked whale population structure, sizes, or trends in the waters off the east coast of the U.S, so determining the impact of the loss of a few individuals to the population is impossible. Since most species are pelagic, there is also no way to know the real number killed in a particular event: not all injured animals strand, and not all carcasses find their way to a beach. There is even less known about non-lethal impacts, such as disruption of mother-calf bonds.

Response: The commenter is correct that relatively little is known about beaked whale population structure, sizes, and trends off the east coast of the U.S. However, we do know that the Navy's ASW exercises are spread throughout the AFAST Study Area (as opposed to focused in an area of known particular importance) and that the Navy is utilizing Planning Awareness Areas (in both exercise planning and implementation, where practicable) to limit takes of marine mammals (including beaked whales) in designated areas of high productivity and steep bathymetric contours, which are frequented by deep diving marine mammals like beaked whales (see Planning Awareness Areas in proposed rule). Comment responses 12 and 36 discuss the likelihood of beaked whales being injured by MFAS. Though not all dead or injured animals are expected to end up on the shore (some may be eaten or float out to sea), we would expect that if marine mammals were being harmed by active sonar with any regularity, more evidence would have been detected over the 40-yr period that the Navy has been conducting sonar in the area (30 of which, people have actively been collecting stranding data). Of note also, the MFAS use covered by this rule is not an increase in the amount of sonar conducted off the east coast and in the Gulf of Mexico (*i.e.*, the amount of use is consistent with historic effort). Last, the potential impacts to cetacean mother-calf pairs from sonar are specifically discussed in Potential Effects of Specified Activities on Marine Mammals section of the proposed rule. However, as the commenter suggests, the specific effects of MFAS on beaked whales and their calves are not discussed because specific data do not exist. For the reasons listed here and described in the Negligible Impact Analysis section of the proposed rule, NMFS has determined that the Navy's action will have a negligible impact on beaked whales.

Comment 28: One commenter noted that the Navy states that it is helping to fund (with NMFS) a series of controlled exposure experiments on wild whales, the first of which took place in the Bahamas in 2007. Yet preliminary results from this experiment support a much lower threshold for behavioral impacts than the Navy is using. In the experiment, only one successful playback experiment on a beaked whale was achieved and in it a tagged Blainville's beaked whale displayed a probable behavioral response at a received level of MFA sonar of 145 dB re 1μPa [rms]. The precautionary principle should be applied and the Navy should, at a minimum, curb its activities around known areas of high marine mammal density and at times when marine animals are expected to be present.

Response: As the commenter notes, the results from the first in the series of behavioral response studies conducted by NMFS and other scientists did show one beaked whale (Mesoplodon densirostris) responding to an MFAS playback. The BRS–07 Cruise report indicates that the playback began when the tagged beaked whale was vocalizing at depth (at the deepest part of a typical feeding dive), following a previous control with no sound exposure. The whale appeared to stop clicking significantly earlier than usual, when exposed to mid-frequency signals in the 130–140 dB (rms) range. After a few more minutes of the playback, when the received level reached a maximum of 140–150 dB, the whale ascended on the slow side of normal ascent rates with a longer than normal ascent, at which point the exposure was terminated. As the commenter noted, the whale displayed a behavioral response: However, further consideration by NMFS is necessary to determine if this behavioral response qualifies as a behavioral harassment pursuant to the MMPA, and if so, how the information should be factored into NMFS' analysis.

The advanced modeling tool that the Navy uses to predict the take of marine mammals incidental to any particular activity takes weeks and sometimes months to produce the take estimates. NMFS worked at length, with input from the Navy and from a panel of marine mammal scientists, to develop and finalize the risk continuum for behavioral harassment. It took months for NMFS to finalize the risk continuum and months for the Navy to calculate the estimated takes based on the current continuum. NMFS and the Navy are working together to bring the Navy's AFAST activities into compliance under the MMPA in advance of the expiration of the MMPA National Defense Exemption, and it was necessary for NMFS to continue moving forward (not wait for new data) in the MMPA process in order to complete the final rule in the needed timeframe to accomplish this. This is not to definitively say that this new information will change the way that NMFS quantitatively analyzes

effects. The interpretation of data presented in the report notes that the results are from a single experiment and that a greater sample size is needed before robust conclusions can be drawn. Also, the results from this study fall under the curve that NMFS is using for behavioral effects (though the low end of the curve). That said, NMFS will carefully consider these results and subsequent BRS results in future analyses.

This final rule contains an adaptive management component that requires a yearly review of monitoring reports and new science and allows for the modification of mitigation and monitoring measures, when appropriate. As noted in the response to comment #30, the Navy currently uses the Planning Awareness Areas (designated based on high productivity and steep bathymetric contour areas) to limit marine mammal impacts during both exercise planning and implementation. Additional detail regarding the potential use of other specific mitigation measures can be found in the Mitigation EA.

Comment 29: NMFS' and the Navy's assessment glosses over stranding events associated with active sonar. Although NMFS briefly discusses stranding events (73 FR 60776–80), the Marine Mammal Protection Act requires NMFS to fully consider the impacts of sonar on marine mammals to determine there is no more than a negligible impact before issuing an incidental take authorization.

Response: NMFS disagrees. The proposed rule contains a detailed discussion of stranding events (those that were merely coincident with MFAS use, as well as those for which the evidence suggests that MFAS exposure was a contributing factor), a detailed discussion of the multiple hypotheses that describe how acoustically-mediated or behaviorally-mediated bubble growth can lead to marine mammal strandings, as well as a comprehensive discussion of the more general potential effects to marine mammals of MFAS exposure. NMFS analyses fully considered the impacts of MFAS use and other naval exercises on marine mammals, which allowed us to determine that the total taking during the five-year period from the specified activities will have a negligible impact on the affected species or stocks.

Comment 30: One commenter states: ''NMFS fails to take proper account of published research on bubble growth in marine mammals, which separately indicates the potential for injury and death at lower [received sound] levels. According to the best available scientific evidence, gas bubble growth is the causal mechanism most consistent with the observed injuries. NMFS' argument to the contrary simply misrepresents the available literature.''

Response: The proposed rule contained a detailed discussion of the many hypotheses involving both acoustically-mediated and behaviorally-mediated bubble growth. NMFS concluded that there is not sufficient evidence to definitively say that any of these hypotheses accurately describe the exact mechanism that leads from sonar exposure to a stranding. Despite the many theories involving bubble formation (both as a direct cause of injury and an indirect cause of stranding), Southall *et al.*, (2007) summarizes that scientific disagreement or complete lack of information exists regarding the following important points: (1) Received acoustical exposure conditions for animals involved in stranding events; (2) pathological interpretation of observed lesions in stranded marine mammals; (3) acoustic exposure conditions required to induce such physical trauma directly; (4) whether noise exposure may cause behavioral reactions (such as atypical diving behavior) that secondarily cause bubble formation and tissue damage; and (5) the extent the post mortem artifacts introduced by decomposition before sampling, handling, freezing, or necropsy procedures affect interpretation of observed lesions.

Comment 31: One commenter stated that NMFS' take estimates do not reflect other non-auditory physiological impacts, such as from chronic exposure during development, stress, and exposure to toxic chemicals.

Response: The commenter is correct that the NMFS' estimated take numbers do not reflect non-auditory physiological impacts because the quantitative data necessary to address those factors in the Navy's exposure model do not exist. However, NMFS acknowledges that a subset of the animals that are taken by harassment will also likely experience non-auditory physiological effects (stress, etc.) and these effects are addressed in the proposed rule (see Stress Responses section). Regarding toxins, the Navy did not expect AFAST activities to result in the production of any toxic chemicals that would affect marine mammals, although the EIS did analyze the potential impacts from torpedo guidance wires, torpedo flex hoses, and parachutes and find that no significant impacts to marine mammals were likely to result from those expended materials. Therefore, the Navy determined that marine mammals would not be taken via the ingestion of toxins or interaction with the aforementioned expended materials and they did not request (nor did NMFS grant) authorization for take of marine mammals via these methods.

Comment 32: The MMC recommends that the Service work with the Navy to prepare a more thorough analysis of potential cumulative effects, the measures that will be taken to avoid or minimize them, and the basis for concluding that those effects will be negligible. They further note that the DEIS, request for a letter of authorization, and proposed rule, do not describe how the effects of the Navy's operations and the effects of other human activities (*e.g.*, ship traffic, commercial fishing) will be assessed and minimized to the extent necessary to avoid an excessive cumulative impact on marine mammals.

Response: NMFS participated as a cooperating agency in the development of the Navy's AFAST EIS and has adopted it to support our issuance of incidental take regulations and LOAs. The FEIS contains a thorough analysis of potential cumulative effects. Throughout the FEIS, within the separate resource sections, the Navy addresses different ways that they will minimize adverse effects. As an agency, NMFS understands the importance of cumulative effects, and we continually look for ways to both better understand and more effectively reduce cumulative effects/impacts on marine mammals and other marine resources through statute implementation (ESA, NEPA, MSA, CZMA, etc.) and more directly through policy and other decisions, such as the implementation of the Right Whale Ship Strike Reduction rule or the convening of the Potential Application of Vessel-Quieting Technology on Large Commercial Vessels meeting in May 2007. However, the MMPA does not require that cumulative effects be factored into NMFS' determination whether to issue an incidental take authorization under the MMPA. Rather, the MMPA states that NMFS ''shall allow * * * the incidental taking * * * if the Secretary * * * finds that the total taking [meaning the taking NMFS authorizes] during each five-year (or less) period concerned will have a negligible impact.''

Comment 33: One commenter felt that the rule discounts the potential impacts on beaked whales from AFAST based on assumptions that are unfounded. The first is that strandings are unlikely to occur because events are not planned ''in a location having a constricted channel less than 35 miles wide or with limited egress similar to the Bahamas (because none exist in the AFAST Study

Area)''. The commenter notes that sonar-associated beaked whale mortalities have occurred in other areas (*e.g.* the Canary Islands in 2002 and 2004) where such bathymetry was not present, suggesting this as not a requisite characteristic for sonar-influenced strandings. The second is the observation that unusual strandings have not been recorded to date in the region is not an indication that mortalities have not occurred. Given that most species of cetaceans sink upon death, and that most beaked whales occur in very deep water which would prevent decomposing carcasses from eventually refloating, it is highly unlikely that whales suffering mortal injury at sea would have been detected. This is especially true in offshore/island regions, where there is limited shoreline throughout much of the operational area, and much of it is steep or rocky and not conducive to holding moribund individuals or carcasses.

Response: The rule does not discount the potential impacts on beaked whales from sonar. NMFS specifically addresses the potential impacts to beaked whales in the ''Acoustically Mediated Bubble Growth'', ''Behaviorally Mediated Responses to MFAS That May Lead to Stranding'', ''Stranding and Mortality'', and ''Association Between Mass Stranding Events and Exposure to MFAS'' sections of the proposed rule. Specifically, in recognition of potential impacts to beaked whales and the scientific uncertainty surrounding the exact mechanisms that lead to strandings, the Navy requested, and NMFS has authorized, the mortality of 10 beaked whales over the course of 5 years in the unlikely event that a stranding occurs as a result of Navy training exercises. Additionally, the commenter is misrepresenting a piece of text from the proposed rule—though NMFS points out that the five factors that contributed to the stranding in the Bahamas are not all present in the AFAST Study Area, we do not say that that alone means strandings are unlikely to occur. We also further suggest that caution is recommended when any of the three environmental factors are present (constricted channels, steep bathymetry, or surface ducts) in the presence of MFAS and beaked whales. Also, NMFS does not ever say that the fact that strandings have not been recorded to date in the region is an indication that mortalities have not occurred. Rather, we say that though not all dead or injured animals are expected to end up on the shore (some may be eaten or float out to sea), one might expect that if marine mammals were being harmed by active sonar with any regularity, more evidence would have been detected over the 40-yr period that the Navy has been conducting sonar in the area (30 of which, people have actively been collecting stranding data).

Comment 34: The MMC recommended that NMFS work with the Navy to provide in the final rule and EIS a side-by-side comparison of the methods each agency used to generate the sound exposure estimates so that reviewers can understand the process by which they were derived and the uncertainties associated with that process, and use that information to assess the risks to marine mammal species and the adequacy of mitigation measures. The MMC also requested an explanation of how NMFS ''revised take estimates and proposed take authorization'' ''depict a more realistic scenario than those adopted directly from the Navy's acoustic analysis.'' Last, MMC notes that they have requested in the past that the Navy submit its sonar exposure model for peer-review.

Response: As indicated in the Estimates of Potential Marine Mammal Exposures and Takes section of the proposed rule, Appendix F of the Navy's AFAST EIS clearly describes the analytical procedures and provides the data used to estimate the number of marine mammal exposures to NMFS acoustic threshold levels in sufficient detail that the reviewers can understand and verify the estimated risks. However, reviewers would not be able to reconstruct the process exactly because inherent to the overall exposure model is the CASS/GRAB submodel, the specific details of which cannot be included in the EIS because the model is a Navy owned, restricted distribution model available only to U.S. Government Agencies and their contractors. This high fidelity acoustic propagation model (CASS/GRAB) used for marine mammal effects analysis is the same model used for the operational use of tactical sonar, and it is included in the Navy's Oceanographic and Atmospheric Master Library (OAML), which has a rigorous acceptance process for all databases, models and algorithms prior to being accepted into OAML.

The Navy provides the numbers of estimated marine mammal exposures to NMFS. These numbers (presented in the ''Navy Modeled Exposure Estimates'' columns of Table 6) do not take into consideration any avoidance of vessels or sound sources by marine mammals or the implementation of mitigation measures. As described in the Mitigation Conclusion section of the proposed rule, when the distance from the sonar source within which an animal would need to approach to be exposed to injurious levels (10 m), the small number of modeled exposures to injurious levels to a few species (of relatively good detectibility: dolphins and pilot whales), the implementation of mitigation measures, and the likelihood that most marine mammals would avoid approaching the source at this distance are taken into consideration, NMFS and the Navy believe that marine mammals will not be injured by sonar exposure. Therefore, NMFS has not authorized any Level A Harassment, with the exception of the 10 beaked whales (by injury or mortality) over the course of the 5-yr regulations, the reasons for which are explained in the Mortality section of the proposed rule. These are the only quantitative adjustments NMFS has made to the authorized takes from the Navy's modeled exposure results. NMFS has directly adopted the Navy's Level B Harassment exposures as modeled, though we qualitatively explain in the proposed rule why we believe these numbers may be an overestimate (see Overestimation section). Additionally, although NMFS is not required to identify the number of animals that will be taken specifically by TTS versus behavioral harassment (Level B Harassment takes include both), we have attempted to make more realistic estimates by quantitatively refining the Navy's TTS estimates based on the same factors listed above for refining the injury estimates (see the Species-specific analysis section). The authorized number of Level B harassment takes remains the same as the number of exposures estimated by the Navy's model.

Last, NMFS' Office of Protected Resources has funded a peer-review of the Navy's exposure model to be conducted by the Center for Independent Experts. The results of this review are scheduled to be available at the end of January, 2009.

Comment 35: One commenter asserts that the Navy's exposure model fails to consider the following important points:

- Possible synergistic effects of using multiple sources in the same exercise, or the combined effects of multiple exercises.
- Indirect effects, such as the potential for mother-calf separation, that can result from short-term disturbance.
- In assuming animals are evenly distributed—the magnifying effects of social structure, whereby impacts on a single animal within a pod, herd, or other unit may affect the entire group.
- In assuming that every whale encountered during subsequent

exercises is essentially a new whale—the cumulative impacts on the breeding, feeding, and other activities of species and stocks.

Response: Though the Navy's model does not quantitatively consider the points listed above (because the quantitative data necessary to include those concepts in a mathematical model do not currently exist), NMFS and the Navy have qualitatively addressed those concerns in their effects analyses in the rule and in the Navy's EIS.

Comment 36: NMFS' (and the Navy's) analysis of marine mammal distribution, habitat abundance, population structure and ecology contains false, misleading or outdated assumptions that tend to both underestimate impacts on species and to impede consideration of reasonable alternatives and mitigation measures. For example, outdated stock assessment data are used as the basis for most density estimates. It also appears that NMFS and the Navy do not consider other sources of published literature. For a number of species, uniform distribution was assumed when calculating density and risk. Although the Navy and NMFS made repeated assurances that this is a conservative approach, it is not. Marine mammals often concentrate in areas with greater density of prey or more favorable topography or currents for migration; thus, assuming a uniform distribution will overestimate presence in some areas and dramatically underestimate it in others.

Another commenter notes that the Navy's analysis of acoustic impacts to marine mammals is through modeling based on abundance estimates which were largely determined from aerial surveys, a difficult way to count marine mammals, especially relatively small animals and those that dive for prolonged periods such as beaked whales—the very animals thought to be most susceptible to anthropogenic ocean noise.

Response: The most current stock assessment reports (Waring *et al.*, 2007) were used to calculate density estimates. As summarized in the proposed rule and described more fully in the Navy's FEIS, the Navy used the best data and methods available to calculate density, including other literature as well as habitat modeling that considered bathymetry, distance from shelf break, sea surface temperature, and Chlorophyll A concentration. All spatial models and density estimates were reviewed by NMFS technical staff. The Navy's model utilizes uniform density, but it also divides the east coast into meaningful sections, such as on-shelf and off-shelf and the different OPAREAS. Using a uniform density is a form of averaging and the commenter has provided no support for why the model would ''overestimate'' sometimes and ''dramatically underestimate'' in others (all else being equal, a uniform distribution should do these two things in equal amounts).

Beaked whale densities in the SE (and seaward of the shelf break in the NE) were derived through the spatial model approach which took environmental and habitat parameters into consideration. These models were built using only shipboard survey data from 1998 through 2005 collected and provided by NMFS. For areas in the NE shoreward of the shelf break, beaked whale density was actually calculated by Palka (Palka, 2005) based on geographic strata provided by Navy. These estimates were developed using data from both shipboard and aerial surveys conducted by the NEFSC. Density data provided by Palka incorporated estimates of g(0) (correction factor that incorporates sightability) as discussed in Palka 2005.

Comment 37: One commenter states that NMFS does not consider the potential for acute synergistic [indirect] effects from sonar training. For example, the agency does not consider the greater susceptibility to vessel strike of animals that have been temporarily harassed or disoriented. The absence of analysis is particularly glaring in light of the 2004 Nowacek *et al.* study, which indicates that mid-frequency sources provoke surfacing and other behavior in North Atlantic right whales that increases the risk of vessel strike.

Response: In the proposed rule, NMFS refers the reader to a conceptual framework that illustrates the variety of avenues of effects that can result from sonar exposure, to include ''risk prone behavior'' resulting somewhat indirectly from attempting to avoid certain received levels. Though we consider the potential for this type of interaction, NMFS does not include detailed analysis of potential indirect effects that have not been empirically demonstrated. Though Nowacek showed that right whales responded to a signal with mid-frequency components (not an actual MFAS signal) in a way that appeared likely to put them at greater risk for ship strike, we do not have evidence that the hypothesized sequence of behaviors has actually led to a ship strike. Additionally, in general and if affected, marine mammals may be affected by (or respond to) sonar in more than one single way when exposed. However, when analyzing impacts, NMFS ''counts'' the most severe response. In the example given by the commenter, NMFS considers the overall possibility of ship strikes resulting from Navy activities, regardless of whether or not they would be preceded by a lesser response.

General Opposition and Other

Comment 38: The Navy should avoid fish spawning grounds and important fish habitat. It should also avoid high-value sea turtle habitat.

Response: These concerns are outside of the purview of the MMPA. Impacts to fish spawning grounds and habitat are dealt with pursuant to the Magnusson Stevens Act (MSA) as it relates to Essential Fish Habitat (EFH). The Navy determined that their activities would not adversely impact EFH; therefore, the Navy determined that a consultation under the MSA was not necessary. Measures to reduce impacts to sea turtles are included in the terms and conditions of the biological opinion that NMFS issued to the Navy (view at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications*).

Comment 39: One commenter suggested that no sonar testing should be done in the waters of the Gulf and Atlantic because dead marine life from these tests would go ashore and endanger the tourism industry for the state.

Response: NMFS is aware of 5 cases, worldwide, where science supports the determination that MFAS was a contributing factor in a marine mammal stranding. None of these strandings occurred on the Atlantic coast of the U.S. or in the Gulf of Mexico. Separately, potential adverse effects to the tourism industry are not required to be addressed under the MMPA.

Comment 40: The NRDC urged NMFS to withdraw its proposed rule on AFAST and to revise the document prior to its recirculation for public comment. They suggested NMFS revisit its profoundly flawed analysis of environmental impacts and prescribe mitigation measures that truly result in the least practicable adverse impact on marine species.

Response: NMFS has addressed specific comments related to the effects analysis here and the mitigation measures in the Mitigation Environmental Assessment. We do not believe that the analysis is flawed and we believe that the prescribed measures will result in the least practicable adverse impacts on the affected species or stock. Therefore, NMFS does not intend to withdraw its AFAST rule.

Comment 41: A few commenters expressed general opposition to Navy

activities and NMFS' issuance of an MMPA authorization, because of the danger to marine mammals, and presented several reasons why MFAS was not necessary.

Response: NMFS appreciates the commenters' concern for the marine mammals that live in the area of the proposed activities. However, the MMPA directs NMFS to issue an incidental take authorization if certain findings can be made. Under the MMPA, NMFS must make the decision of whether or not to issue an authorization based on the proposed action that the applicant submits—the MMPA does not contain a mechanism for NMFS to question the need for the action that the applicant has proposed (unless the action is illegal). Similarly, any U.S. citizen (including the Navy) can request and receive an MMPA authorization as long as all of the necessary findings can be made. NMFS has determined that the Navy's AFAST training activities will have a negligible impact on the affected species or stocks and, therefore, we plan to issue the requested MMPA authorization.

Estimated Take of Marine Mammals

As mentioned previously, with respect to the MMPA, NMFS' effects assessments serve four primary purposes: (1) To put forth 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 effecting 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 AFAST Study Area, so this determination is inapplicable for AFAST); and (4) to prescribe requirements pertaining to monitoring and reporting.

In the Estimated Take of Marine Mammals section of the proposed rule, NMFS related the potential effects to marine mammals from MFAS/HFAS and underwater detonation of explosives, *i.e.*, IEER (discussed in the Potential Effects of Specified Activities on Marine Mammals section) to the MMPA regulatory definitions of Level A and Level B Harassment and quantified (estimated) the effects on marine mammals that could result from the specific activities that the Navy intends to conduct. The subsections of this analysis are discussed individually below.

Definition of Harassment

The Definition of Harassment section of the proposed rule contained the definitions of Level A and Level B Harassments, and a discussion of which of the previously discussed potential effects of MFAS/HFAS or explosive detonations fall into the categories of Level A Harassment (permanent threshold shift (PTS), acoustically mediated bubble growth, behaviorally mediated bubble growth, and physical disruption of tissues resulting from explosive shock wave) or Level B Harassment (temporary threshold shift (TTS), acoustic masking and communication impairment, and behavioral disturbance rising to the level of harassment). See 73 FR 60754, pages 60800–60801. No changes have been made to the discussion contained in this section of the proposed rule.

Acoustic Take Criteria

In the Acoustic Take Criteria section of the proposed rule, NMFS described the development and application of the acoustic criteria for both MFAS/HFAS and explosive detonations (73 FR 60754, pages 60801–60807). No changes have been made to the discussion contained in this section of the proposed rule, with the exception of the issue discussed below.

NMFS received one public comment in which the commenter noted that the acoustic thresholds for TTS and PTS for pinnipeds presented in NMFS' AFAST proposed rule were different from those presented in NMFS' Southern California Range Complex proposed rule. As noted in the updated summary of acoustic thresholds for TTS and PTS below, NMFS has established three separate TTS and PTS thresholds for pinnipeds based on which species are being considered. All of the pinnipeds that are expected to be exposed to MFAS/HFAS in the AFAST Study Area are more closely related to harbor seals (*see* below) and, therefore, only one of the three pinniped criteria is applicable in AFAST.

In the proposed rule, NMFS only listed the single applicable threshold without explaining that two other pinniped TTS and PTS thresholds are used for different taxa (that are present in southern California, but not in the AFAST Study Area). These paragraphs and the summary below serve as a clarification and response to the commenter's comment.

NMFS' TTS criteria (which indicate the received level at which onset TTS (>6dB) is induced) for MFAS/HFAS are as follows:

- Cetaceans—195 dB re 1 μPa²-s (based on mid-frequency cetaceans—no published data exist on auditory effects of noise in low or high frequency cetaceans (Southall *et al.* (2007))
- Harbor Seals (and closely related species, which include all of the species present in the AFAST Study Area)—183 dB re 1 μPa²-s
- Northern Elephant Seals (and closely related species)—204 dB re 1 μPa²-s
- California Sea Lions (and closely related species)—206 dB re 1 μPa²-s

NMFS uses the following acoustic criteria for injury (Level A Harassment):

- Cetaceans—215 dB re 1 μPa²-s (based on mid-frequency cetaceans—no published data exist on auditory effects of noise in low or high frequency cetaceans (Southall *et al.* (2007))
- Harbor Seals (and closely related species)—203 dB re 1 μPa²-s
- Northern Elephant Seals (and closely related species)—224 dB re 1 μPa²-s
- California Sea Lions (and closely related species)—226 dB re 1 μPa²-s

For the behavioral harassment criteria (for all species except harbor porpoises, below), NMFS uses acoustic risk functions developed by NMFS, with input from the Navy, to estimate the probability of behavioral responses to MFAS/HFAS (interpreted as the percentage of the exposed population) that NMFS would classify as harassment for the purposes of the MMPA given exposure to specific received levels of MFA sonar. For harbor porpoises, currently available information suggests a lower threshold level of response for both captive and wild animals and, therefore, NMFS uses a separate 120 dB re 1 μPa step function to estimate take by behavioral harassment (3 FR 60754, pages 60802–60806).

Table 13 in the proposed rule summarizes the acoustic criteria for explosive detonations (73 FR 60754, page 60807).

Estimates of Potential Marine Mammal Exposures and Authorized Take

Information regarding the models used, the assumptions used in the models, and the process of estimating take is available in the Navy's EIS/OEIS for AFAST. Estimating the take that will

result from the proposed activities entails the following general steps:

(1) In order to quantify the types of take described in previous sections that are predicted to result from the Navy's specified activities, the Navy first uses a sound propagation model that predicts the volume of water that will be ensonified to a range of levels of pressure and energy (of the metrics used in the criteria) from MFAS/HFAS and explosive detonations based on several important pieces of information, including:

- Characteristics of the sound sources;
- Sonar source characteristics; include: source level (with horizontal and vertical directivity corrections), source depth, center frequency, source directivity (horizontal/vertical beam width and horizontal/vertical steer direction), and ping spacing;
- Explosive source characteristics include: The net explosive weight, the type of explosive, and the detonation depth;
- Transmission loss (in 36 representative environmental provinces) based on: Seasonal sound speed profiles; seabed geoacoustics; wind speed; and acoustics.

(2) The accumulated energy and maximum received sound pressure level within the waters in which the sonar is operating is sampled over a two dimensional grid. The zone of influence (ZOI) for a given threshold is estimated by summing the areas represented by each grid point for which the threshold is exceeded. For behavioral response, the percentage of animals likely to respond corresponding to the maximum received level is found, and the area of the grid point is multiplied by that percentage to find the adjusted area. Those adjusted area are summed across all grid points to find the overall ZOI for a particular source.

(3) The densities of each marine mammal species, which are specific to certain geographic areas and seasons if data are available, are applied to the summed ZOIs for a particular training event to determine how many times individuals of each species are exposed to levels that exceed the applicable criteria for injury or harassment.

(4) Next, the criteria discussed in the previous section are applied to the estimated exposures to predict the number of exposures that exceed the criteria, *i.e.*, the number of takes by Level B Harassment, Level A Harassment, and mortality.

(5) Last, NMFS and the Navy consider the mitigation measures and model-calculated estimates may be adjusted based on a post-model assessment. For example, in some cases the raw modeled numbers of exposures to levels predicted to result in Level A Harassment from exposure to sonar might indicate that 1 fin whale would be exposed to levels of sonar anticipated to result in PTS—however, a fin whale would need to be within approximately 10 m of the source vessel in order to be exposed to these levels. Because of the mitigation measures (watchstanders and shutdown zone), size of fin whales, and nature of fin whale behavior, it is highly unlikely that a fin whale would be exposed to those levels, and therefore the Navy would not request authorization for Level A Harassment of 1 fin whale. Table 11 contains the Navy's estimated take estimates. The ''takes'' reported in the take table and proposed to be authorized are based on estimates of marine mammal exposures to levels above those indicated in the criteria. Every separate take does not necessarily represent a different individual because some individual marine mammals may be exposed more than once, either within one day and one exercise, or on different days from different exercise types.

(6) Last, the Navy's specified activities have been described based on best estimates of the number of MFAS/HFAS hours that the Navy will conduct. The exact number of hours may vary from year to year, but will not exceed the 5-year total indicated in Table 1 (by multiplying the yearly estimate by 5) by more than 10 percent. NMFS estimates that a 10-percent increase in sonar hours would result in approximately a 10-percent increase in the number of takes (described in Table 6), and we have considered this possibility and the effect of this additional sonar use in our analysis.

Table 6 remains unchanged from Table 11 in the proposed rule (73 FR 60753, page 608090) with the exception of minor modifications and one correction. The number of estimated and authorized Level B behavioral takes of beaked whales increased by a total of 2238 (no increase in modeled TTS takes) because the Navy corrected a calculation related to submarine maintenance. When submarine sonar is used in exercises, the source emits a ping approximately once every 2 hours. However, when maintenance is being conducted, the source emits approximately 60 pings an hour, which will result in more modeled takes than the sub used in an exercise. The Navy originally calculated the submarine sonar takes using the number of pings from an exercise—this has since been corrected. Of note, all of the indicated take increase will occur during sub maintenance, which occurs approximately 50% inshore (potentially at a dock) and 50% at sea, but all of which occurs with a single submarine, not a group of sonar sources such as in the large scale training exercises that have been associated with strandings in certain circumstances in approximately 5 cases outside of U.S. waters. This change in the take numbers did not change NMFS' conclusions regarding the effects of the proposed action.

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	NAVY MODELED EXPOSURE ESTIMATES																		NMFS' Proposed Annual Take Authorization		
	Atlantic Ocean, Offshore of the Southeastern United States									Northeast			Gulf of Mexico			TOTAL					
	VACAPES OPAREA			Cherry Pt OPAREA			Jax/CHASN OPAR			Northeast OPAREA			GOMEX			TOTAL					
Species	PTS	TTS	Dose-Function	PTS	TTS	Dose-Function	PTS	TTS	Dose-Function	PTS	TTS	Dose-Function	PTS	TTS	Dose-Function	PTS	TTS	Dose-Function	Mortality	Level A Harassment	Level B Harassment
North Atlantic right whale*	0	1	45	0	0	30	0	3	363	0	0	224	X	X	X	0	4	662	0	0	666 (0)
Humpback whale*	0	4	403	0	6	686	0	19	2371	0	0	702	0†	1†	10†	0	30	4172	0	0	4202 (0)
Minke whale	0	0	21	0	0	36	0	1	129	0	0	228	X	X	X	0	1	414	0	0	415 (1)
Bryde's whale	X	X	X	X	X	X	0†	1†	10†	X	X	X	0	0	25	0	1	35	0	0	36 (0)
Sei whale*	0†	1†	10†	0†	1†	10†	X	X	X	0	0	1035	X	X	X	0	2	1055	0	0	1057 (0)
Fin whale*	0	1	68	0†	1†	10†	X	X	X	0	0	802	X	X	X	0	2	880	0	0	882 (0)
Blue whale*	X	X	X	X	X	X	X	X	X	0	0	801	X	X	X	0	0	801	0	0	801 (0)
Sperm whale*	0	36	3087	0	4	317	0	17	1517	0	1	4404	0	5	370	0	63	9695	0	0	9758 (0-32)
Kogia spp.	0	5	408	0	8	703	0	26	2476	0	0	423	0	5	330	0	44	4340	0	0	4384 (22 to 44)
Beaked whale	0	8	771	0	5	423	0	19	1731	0	0	1787	0	2	161	0	34	4873	10 over 5 yrs		4907 (17 to 34)
Rough-toothed dolphin	0	2	194	0	4	334	0	13	1177	X	X	X	0	10	974	0	29	2679	0	0	2708 (0-15)
Bottlenose dolphin	3	405	32657	7	738	66340	35	4722	461586	0	2	16113	2	225	24014	47	6092	600710	0	0	606802 (0-3039)
Pantropical spotted dolp.	1	108	8998	2	183	15491	5	580	54555	0	1	9250	5	695	49445	13	1567	137739	0	0	139306 (0-778)
Atlantic spotted dolphin	10	1287	97900	3	551	41887	11	2176	202708	0	4	15141	3	124	14583	27	4142	372219	0	0	376361 (0-2071)
Spinner dolphin	0†	1†	10†	0†	10†	100†	0†	10†	100†	0†	1†	10†	2	289	20624	2	311	20844	0	0	21155 (0-156)
Clymene dolphin	0	51	4299	1	87	7401	2	277	26064	0	0	0	1	114	8145	4	529	45909	0	0	46438 (0-261)
Striped dolphin	8	839	75409	0	1	61	X	X	X	2	10	94213	0	58	4133	10	908	173816	0	0	174724 (0-454)
Common dolphin	4	850	47499	0	1	111	X	X	X	1	10	47989	X	X	X	5	861	95599	0	0	96460 (0-431)
Fraser's dolphin	X	X	X	X	X	X	X	X	X	X	X	X	0	5	341	0	5	341	0	0	346 (0-2)
Risso's dolphin	1	92	7276	1	100	8639	5	585	57169	0	2	18726	0	21	1465	7	800	93275	0	0	94075 (0-400)
Atlantic white-sided dolp.	0†	1†	10†	X	X	X	X	X	X	0	1	20639	X	X	X	0	2	20649	0	0	20651 (0-1)
White-beaked dolphin	X	X	X	X	X	X	X	X	X	0	1	3449	X	X	X	0	1	3449	0	0	3450 (1)
Melon-headed whale	X	X	X	X	X	X	0†	1†	10†	X	X	X	0	23	1620	0	24	1630	0	0	1654 (0)
Pygmy killer whale	0†	1†	10†	0†	1†	10†	0†	1†	10†	0†	1†	10†	0	3	233	0	7	273	0	0	280 (0)
False killer whale	0†	1†	10†	0†	1†	10†	0†	1†	10†	0†	1†	10†	0	7	487	0	11	527	0	0	538 (0)
Killer whale	0†	10†	100†	0†	10†	100†	0†	10†	100†	0†	0†	100†	0	1	62	0	41	462	0	0	503 (0)
Pilot whales	1	159	13220	1	134	12249	7	796	77082	0	12	22604	0	16	1121	9	1117	126276	0	0	127393 (0)
Harbor porpoise	0†	10†	1000†	0†	1†	100†	X	X	X	0	0	152370	X	X	X	0	11	153470	0	0	153481 (0)
Gray Seal	X	X	X	X	X	X	X	X	X	0	31	7828	X	X	X	0	31	7828	0	0	7859 (16-31)
Harbor Seal	X	X	X	X	X	X	X	X	X	0	29	12630	X	X	X	0	29	12630	0	0	12659 (15-29)
Hooded Seal	X	X	X	X	X	X	X	X	X	0	62	15656	X	X	X	0	62	15656	0	0	15718 (31-62)
Harp Seal	X	X	X	X	X	X	X	X	X	0	43	10959	X	X	X	0	43	10959	0	0	11002 (22-43)

Table 6. Navy's estimated exposures to indicated criteria and NMFS proposed take authorization. Though exposures are predicted by the model, NMFS does not anticipate any injury/PTS to occur because of the mitigation measures (as related to certain characteristics of animals, such as size, gregariousness, or group size) and likely avoidance behavior of marine mammals. As discussed in the Estimated Take of Marine Mammals Section, NMFS also anticipates fewer takes by TTS will actually occur than were modeled.

Anticipated TTS occurences are indicated in parentheses in the last column (and are already counted within the broad Level B harassment number that NMFS proposes to authorize)

X - Species is not present or extremely rare in this region, therefore Navy is not requesting takes of this species in this region.

† - Species may be present in small numbers but insufficient data exists to generate density and therefore exposures could not be modeled. In this case the Navy estimated a number of takes to request based on qualitative assessment.

‡ - In the Atlantic pilot whales are often grouped in sighting records due to difficulty of distinguishing between the species. Therefore, in the Atlantic long-finned and short-finned pilot whale takes are combined. There are no confirmed sightings of long-finned pilot whales in the Gulf of Mexico, therefore take numbers are only for short finned pilot whales.

Blue whale: Used fin whale densities to predict exposures in the Northeast.

White-beaked dolphin: Used fall bottlenose estimates in the Northeast as a year-round white-beaked dolphin estimate.

* Threatened or endangered species

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Mortality

Evidence from five beaked whale strandings, all of which have taken place outside of the AFAST Study Area, and have occurred over approximately a decade, suggests that the exposure of beaked whales to MFAS in the presence of certain conditions (*e.g.*, multiple units using tactical sonar, steep bathymetry, constricted channels, strong surface ducts, etc.) may result in strandings, potentially leading to mortality. Although these physical factors believed to contribute to the likelihood of beaked whale strandings are not present on the Atlantic Coast of the U.S. or in the Gulf of Mexico in the aggregate, scientific uncertainty exists regarding what other factors, or combination of factors, may contribute to beaked whale strandings. Accordingly, to allow for scientific uncertainty regarding contributing causes of beaked whale strandings and the exact behavioral or physiological mechanisms that can lead to the ultimate physical effects (stranding and/or death), the Navy has requested authorization for (and NMFS is authorizing) take, by injury or mortality of 10 beaked whales over the course of the 5-yr regulations. Neither NMFS nor the Navy anticipates that marine mammal strandings or mortality will result from the operation of MFAS during Navy exercises within the AFAST Study Area.

Effects on Marine Mammal Habitat

NMFS' AFAST proposed rule included a section that addressed the effects of the Navy's activities on Marine Mammal Habitat (73 FR 60754, page 60810). The analysis preliminarily concluded that the Navy's activities would have minimal effects on marine mammal habitat. No changes have been made to the discussion contained in this section of the proposed rule.

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 (for example: pink-footed geese (*Anser brachyrhynchus*) in undisturbed habitat gained body mass and had about a 46-percent reproductive success compared with geese in disturbed habitat (being consistently scared off the fields on which they were foraging) which did not gain mass and had a 17-percent reproductive success). 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. Generally speaking, and especially with other factors being equal, the Navy and NMFS anticipate more severe effects from takes resulting from exposure to higher received levels (though this is in no way a strictly linear relationship throughout species, individuals, or circumstances) and less severe effects from takes resulting from exposure to lower received levels.

In the Analysis and Negligible Impact Determination section of the proposed rule, NMFS addressed the issues identified in the preceding paragraph in combination with additional detailed analysis regarding the severity of the anticipated effects, and including species (or group)-specific discussions, to determine that Navy training, maintenance, and RDT&E activities utilizing MFAS/HFAS and underwater detonations (IEER) will have a negligible impact on the marine mammal species and stocks present in the AFAST Study Area. No changes have been made to the discussion contained in this section of the proposed rule (73 FR 60754, pages 60811–60823).

Subsistence Harvest of Marine Mammals

NMFS has determined that the issuance of these regulations and subsequent LOAs for Navy AFAST exercises would not have an unmitigable adverse impact on the availability of the affected species or stocks for taking for subsistence uses, since there are no such uses in the specified area.

ESA

There are six marine mammal species and six sea turtle species listed as threatened or endangered under the ESA with confirmed or possible occurrence in the study area: Humpback whale, NARW, sei whale, fin whale, blue whale, sperm whale, loggerhead sea turtle, the green sea turtle, hawksbill sea turtle, leatherback sea turtle, olive ridley sea turtle and the Kemp's ridley sea turtle. Pursuant to Section 7 of the ESA, the Navy has consulted with NMFS on this action. NMFS has also consulted internally on the issuance of regulations under section 101(a)(5)(A) of the MMPA for this activity. In a Biological Opinion (BiOp), NMFS concluded that the Navy's activities in the AFAST Study Area and NMFS' issuance of these regulations are not likely to jeopardize the continued existence of threatened or endangered species or destroy or adversely modify any designated critical habitat.

NMFS (the Endangered Species Division) will also issue BiOps and associated incidental take statements (ITSs) to NMFS (the Permits, Conservation, and Recreation Division) to exempt the take (under the ESA) that NMFS authorizes in the LOAs under the MMPA. Because of the difference between the statutes, it is possible that ESA analysis of the applicant's action could produce a take estimate that is different from the takes requested by the applicant (and analyzed for authorization by NMFS under the MMPA process), despite the fact that the same proposed action (*i.e.,* number of sonar hours and explosive detonations) was being analyzed under each statute. When this occurs, NMFS staff coordinate to ensure that the most conservative (lowest) number of takes is authorized. For the Navy's proposed AFAST training, coordination with the Endangered Species Division indicates that they will likely allow for a lower level of take of ESA-listed marine mammals than was requested by the applicant (because their analysis indicates that fewer will be taken than estimated by the applicant). Therefore, the number of authorized takes in NMFS' LOA(s) will reflect the lower take numbers from the ESA consultation, though the specified activities (*i.e.*, number of sonar hours, etc.) will remain the same. Alternately, these regulations indicate the maximum number of takes that may be authorized under the MMPA.

The ITS(s) issued for each LOA will contain implementing terms and conditions to minimize the effect of the marine mammal take authorized through the 2009 LOA (and subsequent LOAs in 2010, 2011, 2012, and 2013). With respect to listed marine mammals, the terms and conditions of the ITSs will be incorporated into the LOAs.

NEPA

NMFS participated as a cooperating agency on the Navy's Final Environmental Impact Statement (FEIS) for AFAST. NMFS subsequently adopted the Navy's EIS for the purpose of complying with the MMPA. Additionally, NMFS prepared an Environmental Assessment (EA) that tiered off the Navy's FEIS. The EA analyzed the environmental effects of several different mitigation alternatives for the issuance of the AFAST rule and subsequent LOAs. A finding of no significant impact was issued for the mitigation EA on January 15, 2009.

Determination

Based on the analysis contained herein and in the proposed rule (and other related documents) of the likely effects of the specified activity on marine mammals and their habitat and dependent upon the implementation of the mitigation measures, NMFS finds that the total taking from Navy AFAST training exercises utilizing MFAS/HFAS and underwater explosives (IEER) over the 5 year period will have a negligible impact on the affected species or stocks and will not result in an unmitigable adverse impact on the availability of marine mammal species or stocks for taking for subsistence uses because no subsistence uses exist in the AFAST Study Area. NMFS has issued regulations for these exercises that prescribe the means of effecting 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.

Pursuant to the procedures established to implement section 6 of Executive Order 12866, the Office of Management and Budget has determined that this final rule is significant.

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 final 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. 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.

The Assistant Administrator for Fisheries has determined that there is good cause under the Administrative Procedure Act (5 U.S.C. 553(d)(3)) to waive the 30-day delay in effective date of the measures contained in the final rule. Since January 23, 2007, the Navy has been conducting military readiness activities employing mid-frequency active sonar (MFAS) pursuant to a 2-year MMPA National Defense Exemption (NDE). The NDE serves as a bridge to long-term compliance with the MMPA while the Navy prepared its Environmental Impact Statement and pursued the necessary MMPA incidental take authorization for the AFAST exercises. The NDE will expire on January 23, 2009, by which time it is imperative that the regulations and the measures identified in a subsequent LOA become effective. Any delay of these measures would result in either: (1) A suspension of ongoing or planned naval exercises, which would disrupt vital sequential training and certification processes essential to national security; or (2) the Navy's non-compliance with the MMPA (should the Navy conduct exercises without an LOA), thereby resulting in the potential for unauthorized takes of marine mammals upon expiration of the NDE. National security and NMFS' and Navy's preference that the Navy be in compliance with the MMPA after January 23, 2009, dictate that these measures go into effect immediately. The Navy is the entity subject to the regulations and has informed NMFS that it is imperative that these measures be effective on or before January 23, 2009. Finally, as recognized by the President and the United States Supreme Court, the AFAST exercises proposed to be conducted are of paramount interest to the United States. Any delay in the implementation of these measures would raise serious national security implications. Therefore, these measures will become effective upon filing.

List of Subjects in 50 CFR Part 216

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

Dated: January 16, 2009.

James Balsiger,

Acting Assistant Administrator for Fisheries, National Marine Fisheries Service.

■ For reasons set forth in the preamble, 50 CFR Part 216 is amended as follows:

PART 216—REGULATIONS GOVERNING THE TAKING AND IMPORTING OF MARINE MAMMALS

■ 1. The authority citation for part 216 continues to read as follows:

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

■ 2. Subpart V is added to part 216 to read as follows:

Subpart V—Taking and Importing Marine Mammals; U.S. Navy's Atlantic Fleet Active Sonar Training (AFAST)

Sec.

216.240 Specified activity and specified geographical region.
216.241 Effective dates and definitions.
216.242 Permissible methods of taking.
216.243 Prohibitions.
216.244 Mitigation.
216.245 Requirements for monitoring and reporting.
216.246 Applications for Letters of Authorization.
216.247 Letters of Authorization.
216.248 Renewal of Letters of Authorization and Adaptive Management.
216.249 Modifications to Letters of Authorization.

Subpart V—Taking and Importing Marine Mammals; U.S. Navy's Atlantic Fleet Active Sonar Training (AFAST)

§ 216.240 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 occurs 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 AFAST Study Area, which extends east from the Atlantic Coast of the U.S. to 45° W. long. and south from the Atlantic and Gulf of Mexico Coasts to approximately 23° N. lat., excluding the Bahamas (see Figure 1–1 in the Navy's Application).

(c) The taking of marine mammals by the Navy is only authorized if it occurs incidental to the use of the following mid-frequency active sonar (MFAS) sources, high frequency active sonar (HFAS) sources, or explosive sonobuoys for U.S. Navy anti-submarine warfare (ASW), mine warfare (MIW) training, maintenance, or research, development, testing, and evaluation (RDT&E) in the amounts indicated below (+/ − 10 percent):

(1) AN/SQS–53 (hull-mounted sonar)—up to 16070 hours over the course of 5 years (an average of 3214 hours per year).

(2) AN/SQS–56 (hull-mounted sonar)—up to 8420 hours over the course of 5 years (an average of 1684 hours per year).

(3) AN/SQS–56 or 53 (hull mounted sonar in object detection mode)—up to 1080 hours over the course of 5 years (an average of 216 hours per year).

(4) AN/BQQ–10 or 5 (submarine sonar)—up to 49880 pings over the course of 5 years (an average of 9976 pings per year) (an average of 1 ping per two hours during training events, 60 pings per hour for maintenance).

(5) AN/AQS–22 or 13 (helicopter dipping sonar)—up to 14760 dips over the course of 5 years (an average of 2952 dips per year—10 pings per five-minute dip).

(6) SSQ–62 (Directional Command Activated Sonobuoy System (DICASS) sonobuoys)—up to 29265 sonobuoys over the course of 5 years (an average of 5853 sonobuoys per year).

(7) MK–48 (heavyweight torpedoes)—up to 160 torpedoes over the course of 5 years (an average of 32 torpedoes per year).

(8) MK–46 or 54 (lightweight torpedoes)—up to 120 torpedoes over the course of 5 years (an average of 24 torpedoes per year).

(9) AN/SSQ–110A (IEER explosive sonobuoy) and AN/SSQ–125 (AEER sonar sonobuoy)—up to 4360 sonobuoys, between these 2 sources, over the course of 5 years (an average of 872 buoys per year).

(10) AN/SQQ–32 (over the side mine-hunting sonar)—up to 22370 hours over the course of 5 years (an average of 4474 hours per year).

(11) AN/SLQ–25 (NIXIE—towed countermeasure)—up to 1660 hours over the course of 5 years (an average of 332 hours per year).

(12) AN/BQS–15 (submarine navigation)—up to 2250 hours over the course of 5 years (an average of 450 hours per year).

(13) MK–1 or 2 or 3 or 4 (Submarine-fired Acoustic Device Countermeasure (ADC))—up to 1125 ADCs over the course of 5 years (an average of 225 ADCs per year).

(14) Noise Acoustic Emitters (NAE—Sub-fired countermeasure)—up to 635 NAEs over the course of 5 years (an average of 127 NAEs per year).

§ 216.241 Effective dates and definitions.

(a) Regulations are effective January 22, 2009 through January 22, 2014.

(b) The following definitions are utilized in these regulations:

(1) *Uncommon Stranding Event (USE)*—A stranding event that takes place during a major training exercise (MTE) and involves any one of the following:

(i) Two or more individuals of any cetacean species (not including mother/calf pairs), unless of species of concern listed in § 216.241(b)(1)(ii) found dead or live on shore within a 2-day period and occurring within 30 miles of one another.

(ii) A single individual or mother/calf pair of any of the following marine mammals of concern: beaked whale of any species, dwarf or pygmy sperm whales, melon-headed whales, pilot whales, right whales, humpback whales, sperm whales, blue whales, fin whales, or sei whales.

(iii) A group of 2 or more cetaceans of any species exhibiting indicators of distress as defined in § 216.241(b)(3).

(2) *Shutdown*—The cessation of MFAS/HFAS operation or detonation of explosives within 14 nm nm (Atlantic Ocean) or 17 nm (Gulf of Mexico) of any live, in the water, animal involved in a USE.

§ 216.242 Permissible methods of taking.

(a) Under Letters of Authorization issued pursuant to §§ 216.106 and 216.247, the Holder of the Letter of Authorization may incidentally, but not intentionally, take marine mammals within the area described in § 216.240(b), provided the activity is in compliance with all terms, conditions, and requirements of these regulations and the appropriate Letter of Authorization.

(b) The activities identified in § 216.240(c) must be conducted in a manner that minimizes, to the greatest extent practicable, any adverse impacts on marine mammals and their habitat.

(c) The incidental take of marine mammals under the activities identified in § 216.240(c) is limited to the following species, by the identified method of take and the indicated number of times:

(1) Level B Harassment (+/ − 10 percent of the number of takes indicated below):

(i) *Mysticetes:*

(A) North Atlantic right whale (*Eubalaena glacialis*)—3330 (an average of 666 annually).

(B) Humpback whale (*Megaptera novaeangliae*)—21010 (an average of 4202 annually).

(C) Minke whale (*Balaenoptera acutorostrata*)—2075 (an average of 415 annually).

(D) Sei whale (*Balaenoptera borealis*)—5285 (an average of 1057 annually).

(E) Fin whale (*Balaenoptera physalus*)—4410 (an average of 882 annually).

(F) Bryde's whale (*Balaenoptera edeni*)—180 (an average of 36 annually).

(G) Blue whale (*Balaenoptera musculus*)—4005 (an average of 801 annually).

(ii) *Odontocetes:*

(A) Sperm whales (*Physeter macrocephalus*)—48790 (an average of 9758 annually).

(B) Pygmy or dwarf sperm whales (*Kogia breviceps* or *Kogia sima*)—21920 (an average of 4384 annually).

(C) Beaked Whales (Cuvier's, True's, Gervais', Sowerby's, Blainville's, Northern bottlenose whale) (*Ziphius cavirostris, Mesoplodon mirus, M. europaeus, M. bidens, M. densirostris*, Hyperoodon ampullatus)—24535 (an average of 4907 annually).

(D) Rough-toothed dolphin (*Steno bredanensis*)—13540 (an average of 2708 annually).

(E) Bottlenose dolphin (*Tursiops truncatus*)—3034010 (an average of 606802 annually).

(F) Pan-tropical dolphin (*Stenella attenuata*)—696530 (an average of 139306 annually).

(G) Atlantic spotted dolphin (*Stenella frontalis*)—1881805 (an average of 376361 annually).

(H) Spinner dolphin (*Stenella longirostris*)—105775 (an average of 21155 annually).

(I) Clymene dolphin (*Stenella clymene*)—232190 (an average of 46438 annually).

(J) Striped dolphin (*Stenella coeruleoalba*)—873620 (an average of 174274 annually).

(K) Common dolphin (*Delphinus spp.*)—482300 (an average of 96460 annually).

(L) Fraser's dolphin (*Lagenodelphis hosei*)—1730 (an average of 346 annually).

(M) Risso's dolphin (*Grampus griseus*)—470375 (an average of 94075 annually).

(N) Atlantic white-sided dolphin (*Lagenorhynchus acutus*)—103255 (an average of 20651 annually).

(O) White-beaked dophin (*Lagenorhynchus albirostris*)—17250 (an average of 3450 annually).

(P) Melon-headed whale (*Peponocephala electra*)—8270 (an average of 1654 annually).

(Q) Pygmy killer whale (*Feresa attenuata*)—1400 (an average of 280 annually).

(R) False killer whale (*Pseudorca crassidens*)—2690 (an average of 538 annually).

(S) Killer whale (*Orcinus orca*)—2515 (an average of 503 annually).

(T) Pilot whales (Short-finned pilot or long-finned) (*Globicephala macrorynchus* or *G. melas*)—636965 (an average of 127393 annually).

(U) Harbor porpoise (*Phocoena phocoena*)—767405 (an average of 153481 annually).

(iii) *Pinnipeds:*

(A) Gray seal (*Halichoerus grypus*)—39295 (an average of 7859 annually).

(B) Harbor seal (*Phoca vitulina*)—63295 (an average of 12659 annually).

(C) Hooded seal (*Cystophora cristata*)—78590 (an average of 15718 annually).

(D) Harp seal (*Pagophilus groenlandica*)—55010 (an average of 11002 annually).

(2) Level A Harassment and/or mortality of no more than 10 beaked whales (total), of any of the species listed in § 216.242(c)(1)(ii)(C) over the course of the 5-year regulations.

§ 216.243 Prohibitions.

Notwithstanding takings contemplated in § 218.92 and authorized by a Letter of Authorization issued under §§ 216.106 and 216.247, no person in connection with the activities described in § 216.240 may:

(a) Take any marine mammal not specified in § 216.242(c);

(b) Take any marine mammal specified in § 216.242(c) other than by incidental take as specified in § 216.242(c)(1) and (2);

(c) Take a marine mammal specified in § 216.242(c) 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 these regulations or a Letter of Authorization issued under §§ 216.106 and 216.247.

§ 216.244 Mitigation.

(a) When conducting training activities identified in § 216.240(c), the mitigation measures contained in the Letter of Authorization issued under §§ 216.106 and 216.247 must be implemented. These mitigation measures include, but are not limited to:

(1) Mitigation Measures for ASW and MIW training:

(i) All lookouts onboard platforms involved in ASW training events shall review the NMFS-approved Marine Species Awareness Training (MSAT) material prior to use of mid-frequency active sonar.

(ii) All Commanding Officers, Executive Officers, and officers standing watch on the Bridge shall review the MSAT material prior to a training event employing the use of mid- or high-frequency active sonar.

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

(iv) 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).

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

(vi) On the bridge of surface ships, there shall always be at least three people on watch whose duties include observing the water surface around the vessel.

(vii) All surface ships participating in ASW exercises shall, in addition to the three personnel on watch noted previously, have at all times during the exercise at least two additional personnel on watch as lookouts.

(viii) Personnel on lookout and officers on watch on the bridge shall have at least one set of binoculars available for each person to aid in the detection of marine mammals.

(ix) On surface vessels equipped with MFAS, pedestal mounted ''Big Eye'' (20 × 110) binoculars shall be present and in good working order.

(x) Personnel on lookout shall employ visual search procedures employing a scanning methodology in accordance with the Lookout Training Handbook (NAVEDTRA 12968–D). Surface lookouts should 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 should always start at the forward part of the sector and search aft (toward the back). To search and scan, the lookout should 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 should scan for approximately five seconds in as many small steps as possible across the field seen through the binoculars. They should 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 should be lowered to allow the eyes to rest for a few seconds, and then the lookout should search back across the sector with the naked eye.

(xi) After sunset and prior to sunrise, lookouts shall employ Night Lookouts Techniques in accordance with the Lookout Training Handbook. At night, lookouts should not sweep the horizon with their eyes because this method is not effective when the vessel is moving. Lookouts should scan the horizon in a series of movements that should allow their eyes to come to periodic rests as they scan the sector. When visually searching at night, they should look a little to one side and out of the corners of their eyes, paying attention to the things on the outer edges of their field of vision.

(xii) Personnel on lookout shall be responsible for informing the Officer of the Deck all objects or anomalies sighted in the water (regardless of the distance from the vessel) to the Officer of the Deck, since any object or disturbance (*e.g.*, trash, periscope, surface disturbance, discoloration) in the water may be indicative of a threat to the vessel and its crew or indicative of a marine species that may need to be avoided as warranted.

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

(xiv) All personnel engaged in passive acoustic sonar operation (including aircraft, surface ships, or submarines) shall monitor for marine mammal vocalizations and report the detection of any marine mammal to the appropriate watch station for dissemination and appropriate action.

(xv) Units shall use training lookouts to survey for marine mammals prior to commencement and during the use of active sonar.

(xvi) During operations involving sonar, personnel shall utilize all available sensor and optical systems (such as Night Vision Goggles) to aid in the detection of marine mammals.

(xvii) Navy aircraft participating in exercises at sea shall conduct and maintain, when operationally feasible and safe, surveillance for marine mammals as long as it does not violate safety constraints or interfere with the accomplishment of primary operational duties.

(xviii) Aircraft with deployed sonobuoys shall use only the passive capability of sonobuoys when marine mammals are detected within 200 yards (182 m) of the sonobuoy.

(xix) Marine mammal detections shall be reported immediately to assigned Aircraft Control Unit (if participating) for further dissemination to ships in the vicinity of the marine mammals. This action shall occur when it is reasonable to conclude that the course of the ship will likely close the distance between the ship and the detected marine mammal.

(xx) Safety Zones—When marine mammals are detected by any means (aircraft, shipboard lookout, or acoustically) the Navy shall ensure that sonar transmission levels are limited to at least 6 dB below normal operating levels if any detected marine mammals are within 1000 yards (914 m) of the sonar dome (the bow).

(A) Ships and submarines shall continue to limit maximum transmission levels by this 6-dB factor until the marine mammal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards (1828 m) beyond the location of the last detection.

(B) Should a marine mammal be detected within or closing to inside 457 m (500 yd) of the sonar dome, active sonar transmissions shall be limited to at least 10 dB below the equipment's normal operating level. Ships and submarines shall continue to limit maximum ping levels by this 10-dB factor until the marine mammal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2000 yards (1828 m) beyond the location of the last detection.

(C) Should the marine mammal be detected within or closing to inside 183 m (200 yd) of the sonar dome, active sonar transmissions shall cease. Sonar shall not resume until the marine mammal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards (1828 m) beyond the location of the last detection.

(D) If the need for power-down should arise as detailed in ''Safety Zones'' in paragraph (a)(1)(xx) of this section, Navy shall follow the requirements as though they were operating at 235 dB—the normal operating level (*i.e.*, the first power-down shall be to 229 dB, regardless of at what level above 235 sonar was being operated).

(xxi) Prior to startup or restart of active sonar, operators shall check that the Safety Zone radius around the sound source is clear of marine mammals.

(xxii) Sonar levels (generally)—The Navy shall operate sonar at the lowest practicable level, not to exceed 235 dB, except as required to meet tactical training objectives.

(xxiii) Helicopters shall observe/survey the vicinity of an ASW Operation for 10 minutes before the first deployment of active (dipping) sonar in the water.

(xxiv) Helicopters shall not dip their sonar within 200 yards (183 m) of a marine mammal and shall cease pinging if a marine mammal closes within 200 yards of the helicopter dipping sonar (183 m) after pinging has begun.

(xxv) Submarine sonar operators shall review detection indicators of close-aboard marine mammals prior to the commencement of ASW training activities involving active sonar.

(xxvi) Night vision devices shall be available to all ships and air crews, for use as appropriate.

(xxvii) Dolphin bowriding—If, after conducting an initial maneuver to avoid close quarters with dolphins, the ship concludes that dolphins are deliberately closing in on the ship to ride the vessel's bow wave, no further mitigation actions would be necessary because dolphins are out of the main transmission axis of the active sonar while in the shallow-wave area of the vessel bow.

(xxviii) TORPEXs conducted in the northeast North Atlantic right whale critical habitat (as designated in 50 CFR Part 226) shall implement the following measures.

(A) All torpedo-firing operations shall take place during daylight hours.

(B) During the conduct of each test, visual surveys of the test area shall be conducted by all vessels and aircraft involved in the exercise to detect the presence of marine mammals. Additionally, trained observers shall be placed on the submarine, spotter aircraft, and the surface support vessel. All participants shall report sightings of any marine mammals, including negative reports, prior to torpedo firings. Reporting requirements shall be outlined in the test plans and procedures written for each individual exercise, and shall be emphasized as part of pre-exercise briefings conducted with all participants.

(C) Observers shall receive NMFS-approved training in field identification, distribution, and relevant behaviors of marine mammals of the western north Atlantic. Observers shall fill out Standard Sighting Forms and the data shall be housed at the Naval Undersea Warfare Center Division Newport (NUWCDIVNPT). Any sightings of North Atlantic right whales shall be immediately communicated to the Sighting Advisory System (SAS). All platforms shall have onboard a copy of:

(*1*) The Guide to Marine Mammals and Turtles of the U.S. Atlantic and Gulf of Mexico (Wynne and Schwartz 1999);

(*2*) The NMFS Critical Sightings Program placard;

(*3*) Right Whales, Guidelines to Mariners placard.

(D) In addition to the visual surveillance discussed above, dedicated aerial surveys shall be conducted utilizing a fixed-wing aircraft. An aircraft with an overhead wing (*i.e.*, Cessna Skymaster or similar) shall be used to facilitate a clear view of the test area. Two trained observers, in addition to the pilot, shall be embarked on the aircraft. Surveys shall be conducted at an approximate altitude of 1000 ft (305 m) flying parallel track lines at a separation of 1 nmi (1.85 km), or as necessary to facilitate good visual coverage of the sea surface. While conducting surveillance, the aircraft shall maintain an approximate speed of 100 knots (185 km/hr). Since factors that affect visibility are highly dependent on the specific time of day of the survey, the flight operator will have the flexibility to adjust the flight pattern to reduce glare and improve visibility. The entire test site shall be surveyed initially, but once preparations are being made for an actual test launch, survey effort shall be concentrated over the vicinity of the individual test location. Further, for approximately ten minutes immediately prior to launch, the aircraft shall racetrack back and forth between the launch vessel and the target vessel.

(E) Commencement of an individual torpedo test scenario shall not occur until observers from all vessels and aircraft involved in the exercise have reported to the Officer in Tactical Command (OTC) and the OTC has declared that the range is clear of marine mammals. Should marine mammals be present within or seen moving toward the test area, the test shall be either delayed or moved as

required to avoid interference with the animals.

(F) The TORPEX shall be suspended if the Beaufort Sea State exceeds 3 or if visibility precludes safe operations.

(G) Vessel speeds:

(*1*) During transit through the northeastern North Atlantic right whale critical habitat, surface vessels and submarines shall maintain a speed of no more than 10 knots (19 km/hr) while not actively engaged in the exercise procedures.

(*2*) During TORPEX operations, a firing vessel should, where feasible, not exceed 10 knots. When a submarine is used as a target, vessel speeds should, where feasible, not exceed 18 knots. However, on occasion, when surface vessels are used as targets, the vessel may exceed 18 kts in order to fully test the functionality of the torpedoes. This increased speed would occur for a short period of time (*e.g.*, 10–15 minutes) to evade the torpedo when fired upon.

(H) In the event of an animal strike, or if an animal is discovered that appears to be in distress, the Navy shall immediately report the discovery through the appropriate Navy chain of Command.

(xxix) The Navy shall abide by the following additional measures:

(A) The Navy shall avoid planning major exercises in the specified planning awareness areas (PAAs—as depicted in NMFS' ''Environmental Assessment of Mitigation Alternatives for Issuance of Incidental Take Regulations to U.S. Navy for Atlantic Fleet Active Sonar Training (AFAST)'') where feasible. Should national security require the conduct of more than four major exercises (C2X, JTFEX, SEASWITI, or similar scale event) in these areas (meaning all or a portion of the exercise) per year the Navy shall provide NMFS with prior notification and include the information in any associated after-action or monitoring reports.

(B) The Navy shall conduct no more than one of the four above-mentioned major exercises (COMPTUEX, JTFEX, SEASWITI or similar scale event) per year in the Gulf of Mexico to the extent operationally feasible. If national security needs require more than one major exercise to be conducted in the Gulf of Mexico PAAs, the Navy shall provide NMFS with prior notification and include the information in any associated after-action or monitoring reports.

(C) The Navy shall include the PAAs in the Navy's Protective Measures Assessment Protocol (PMAP) (implemented by the Navy for use in the protection of the marine environment) for unit level situational awareness (*i.e.*, exercises other than COMPTUEX, JTFEX, SEASWITI) and planning purposes.

(D) Helicopter Dipping Sonar—Unless otherwise dictated by national security needs, the Navy shall minimize helicopter dipping sonar activities within the southeastern areas of North Atlantic right whale critical habitat (as designated in 50 CFR part 226) from November 15–April 15.

(E) Object Detection Exercises—The Navy shall implement the following measures regarding object detection activities in the southeastern areas of the North Atlantic right whale critical habitat:

(*1*) The Navy shall reduce the time spent conducting object detection exercises in the NARW critical habitat;

(*2*) Prior to conducting surface ship object detection exercises in the southeastern areas of the North Atlantic right whale critical habitat during the time of November 15–April 15, ships shall contact FACSFACJAX to obtain the latest North Atlantic right whale sighting information. FACSFACJAX shall advise ships of all reported whale sightings in the vicinity of the critical habitat and associated areas of concern (which extend 9 km (5 NM) seaward of the designated critical habitat boundaries). To the extent operationally feasible, ships shall avoid conducting training in the vicinity of recently sighted North Atlantic right whales. Ships shall maneuver to maintain at least 500 yards separation from any observed whale, consistent with the safety of the ship.

(xxx) The Navy shall abide by the letter of the ''Stranding Response Plan for Major Navy Training Exercises in the AFAST Study Area'' (available at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm*), to include the following measures:

(A) Shutdown Procedures—When an Uncommon Stranding Event (USE—defined in § 216.241) occurs during a Major Training Exercise (MTE, including SEASWITI, IAC, Group Sails, JTFEX, or COMPTUEX) in the AFAST Study Area, the Navy shall implement the procedures described below.

(*1*) The Navy shall implement a Shutdown (as defined § 216.241) when advised by a NMFS Office of Protected Resources Headquarters Senior Official designated in the AFAST Stranding Communication Protocol that a USE involving live animals has been identified and that at least one live animal is located in the water. NMFS and Navy shall communicate, as needed, regarding the identification of the USE and the potential need to implement shutdown procedures.

(*2*) Any shutdown in a given area shall remain in effect in that area until NMFS advises the Navy that the subject(s) of the USE at that area die or are euthanized, or that all live animals involved in the USE at that area have left the area (either of their own volition or herded).

(*3*) If the Navy finds an injured or dead animal of any species other than North Atlantic right whale floating at sea during an MTE, the Navy shall notify NMFS immediately or as soon as operational security considerations allow. The Navy shall provide NMFS with species or description of the animal(s), the condition of the animal(s) including carcass condition (if the animal(s) is/are dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). Based on the information provided, NMFS shall determine if, and advise the Navy whether a modified shutdown is appropriate on a case-by-case basis.

(*4*) If the Navy finds an injured (or entangled) North Atlantic right whale floating at sea during an MTE, the Navy shall implement shutdown procedures (14 or 17 nm, as defined below) around the animal immediately (without waiting for notification from NMFS). The Navy shall then notify NMFS (pursuant to the AFAST Communication Protocol) immediately or as soon as operational security considerations allow. The Navy shall provide NMFS with species or description of the animal(s), the condition of the animal(s) including carcass condition (if the animal(s) is/are dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). Subsequent to the discovery of the injured whale, any Navy platforms in the area shall report any North Atlantic right whale sightings to NMFS (or to a contact that can alert NMFS as soon as possible). Based on the information provided, NMFS may initiate/organize an aerial survey (by requesting the Navy's assistance pursuant to the memorandum of agreement (MOA) (see (a)(1)(xxx)(C) of this section) or by other available means) to see if other North Atlantic right whales are in the vicinity. Based on the information provided by the Navy and, if necessary, the outcome of the aerial surveys, NMFS shall determine whether a continued shutdown is appropriate on a case-by-case basis. Though it will be determined on a case-by-case basis after Navy/NMFS discussion of the situation, NMFS anticipates that the shutdown will continue within 14 or 17 nm of a

live, injured/entangled North Atlantic right whale until the animal dies or has not been seen for at least 3 hours (either by NMFS staff attending the injured animal or Navy personnel monitoring the area around where the animal was last sighted).

(*5*) If the Navy finds a dead North Atlantic right whale floating at sea during an MTE, the Navy shall notify NMFS (pursuant to AFAST Stranding Communication Protocol) immediately or as soon as operational security considerations allow. The Navy shall provide NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal(s) is/are dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). Subsequent to the discovery of the dead whale, if the Navy is operating sonar in the area they shall use increased vigilance (in looking for North Atlantic right whales) and all platforms in the area shall report sightings of North Atlantic right whales to NMFS as soon as possible. Based on the information provided, NMFS may initiate/organize an aerial survey (by requesting the Navy's assistance pursuant to the MOA (see (a)(1)(xxx)(C) of this section) or by other available means) to see if other North Atlantic right whales are in the vicinity. Based on the information provided by the Navy and, if necessary, the outcome of the aerial surveys, NMFS will determine whether any additional mitigation measures are necessary on a case-by-case basis.

(*6*) In the event, following a USE, that: (a) Qualified individuals are attempting to herd animals back out to the open ocean and animals are not willing to leave, or (b) animals are seen repeatedly heading for the open ocean but turning back to shore, NMFS and the Navy should coordinate (including an investigation of other potential anthropogenic stressors in the area) to determine if the proximity of MFAS/HFAS training activities or explosive detonations, though farther than 14 or 17 nm from the distressed animal(s), is likely decreasing the likelihood that the animals return to the open water. If so, NMFS and the Navy shall further coordinate to determine what measures are necessary to further minimize that likelihood and implement those measures as appropriate.

(B) Within 72 hours of NMFS notifying the Navy of the presence of a USE, the Navy shall provide available information to NMFS (per the AFAST Communication Protocol) regarding the location, number and types of acoustic/explosive sources, direction and speed of units using MFAS/HFAS, and marine mammal sightings information associated with training activities occurring within 80 nm (148 km) and 72 hours prior to the USE event. Information not initially available regarding the 80 nm (148 km), 72 hours, period prior to the event shall be provided as soon as it becomes available. The Navy shall provide NMFS investigative teams with additional relevant unclassified information as requested, if available.

(C) Memorandum of Agreement (MOA)—The Navy and NMFS shall develop a MOA, or other mechanism consistent with Federal fiscal law requirements (and all other applicable laws), that will establish a framework whereby the Navy can (and provide the Navy examples of how they can best) assist NMFS with stranding investigations in certain circumstances. This document shall be finalized in 2009 (unless NMFS notifies the Navy that a delay is needed).

(2) Mitigation for IEER/AEER—The following are mitigation measures for use with Extended Echo Ranging/Improved Extended Echo Ranging (EER/IEER) and Advanced Extended Echo Ranging given an explosive source generates the acoustic wave used in this sonobuoy.

(i) Navy crews shall conduct visual reconnaissance of the drop area prior to laying their intended sonobuoy pattern. This search should be conducted below 500 yards (457 m) at a slow speed, if operationally feasible and weather conditions permit. In dual aircraft training activities, crews are allowed to conduct coordinated area clearances.

(ii) For IEER (AN/SSQ–110A), Navy crews shall conduct a minimum of 30 minutes of visual and acoustic monitoring of the search area prior to commanding the first post (source/receiver sonobuoy pair) detonation. This 30-minute observation period may include pattern deployment time.

(iii) For any part of the briefed pattern where a post (source/receiver sonobuoy pair) will be deployed within 1,000 yards (914 m) of observed marine mammal activity, deploy the receiver ONLY and monitor while conducting a visual search. When marine mammals are no longer detected within 1,000 yards (914 m) of the intended post position, co-locate the explosive source sonobuoy (AN/SSQ–110A) (source) with the receiver.

(iv) When operationally feasible, Navy crews shall conduct continuous visual and aural monitoring of marine mammal activity. This is to include monitoring of own-aircraft sensors from first sensor placement to checking off station and out of communication range of these sensors.

(v) *Aural Detection:* If the presence of marine mammals is detected aurally, then that should cue the aircrew to increase the diligence of their visual surveillance. Subsequently, if no marine mammals are visually detected, then the Navy crew may continue multi-static active search.

(vi) *Visual Detection:*

(A) If marine mammals are visually detected within 1,000 yards (914 m) of the explosive source sonobuoy (AN/SSQ–110A) intended for use, then that payload shall not be detonated.

(B) Navy Aircrews may utilize this post once the marine mammals have not been re-sighted for 30 minutes, or are observed to have moved outside the 1,000 yards (914 m) safety buffer.

(C) Navy Aircrews may shift their multi-static active search to another post, where marine mammals are outside the 1,000 yards (914 m) safety buffer.

(vii) For IEER (AN/SSQ–110A), Navy Aircrews shall make every attempt to manually detonate the unexploded charges at each post in the pattern prior to departing the operations area by using the ''Payload 1 Release'' command followed by the ''Payload 2 Release'' command. Aircrews shall refrain from using the ''Scuttle'' command when two payloads remain at a given post. Aircrews shall ensure that a 1,000 yard (914 m) safety buffer, visually clear of marine mammals, is maintained around each post as is done during active search operations.

(viii) Navy Aircrews shall only leave posts with unexploded charges in the event of a sonobuoy malfunction, an aircraft system malfunction, or when an aircraft must immediately depart the area due to issues such as fuel constraints, inclement weather, and in-flight emergencies. In these cases, the sonobuoy will self-scuttle using the secondary or tertiary method.

(ix) The Navy shall ensure all payloads are accounted for. Explosive source sonobuoys (AN/SSQ–110A) that cannot be scuttled shall be reported as unexploded ordnance via voice communications while airborne, then upon landing via naval message.

(x) Marine mammal monitoring shall continue until out of own-aircraft sensor range.

(3) Mitigation Measures Related to Vessel Transit and North Atlantic Right Whales:

(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 (within this paragraph), 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 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 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 then 12 hours old. Circumstances could arise where, in order to avoid North Atlantic right whale(s), speed reductions could mean vessel 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 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 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 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 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.

§ 216.245 Requirements for monitoring and reporting.

(a) As outlined in the AFAST Stranding Communication Plan, the Navy must notify NMFS immediately (or as soon as clearance procedures allow) if the specified activity identified in § 216.240(c) is thought to have resulted in the mortality or injury of any marine mammals, or in any take of marine mammals not identified in § 216.242(c).

(b) The Navy must conduct all monitoring and required reporting under the Letter of Authorization, including abiding by the AFAST Monitoring Plan, which is incorporated herein by reference.

(c) 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 AFAST and across Range Complexes

(d) General Notification of Injured or Dead Marine Mammals—Navy personnel shall ensure that NMFS (regional stranding coordinator) is notified immediately (or as soon as clearance procedures allow) if an injured or dead marine mammal is found during or shortly after, and in the vicinity of, any Navy training exercise utilizing MFAS, HFAS, or underwater explosive detonations. The Navy shall provide NMFS with species or description of the animal(s), the condition of the animal(s) (including carcass condition if the animal is dead), location, time of first discovery, observed behaviors (if alive), and photo or video (if available). The Navy shall consult the Stranding Response Plan to obtain more specific reporting requirements for specific circumstances.

(e) Annual AFAST Monitoring Plan Report—The Navy shall submit a report annually on October 1 describing the implementation and results (through August 1 of the same year) of the AFAST Monitoring Plan. Data collection methods will be standardized across range complexes to allow for comparison in different geographic locations. Although additional information will also be gathered, the marine mammal observers (MMOs) collecting marine mammal data pursuant to the AFAST Monitoring Plan shall, at a minimum, provide the same marine mammal observation data required in the data required in § 216.245(f)(1). The AFAST Monitoring Plan Report may be provided to NMFS within a larger report that includes the required Monitoring Plan Reports from AFAST and multiple Range Complexes.

(f) Annual AFAST Exercise Report—The Navy shall submit an Annual AFAST Exercise Report on October 1 of every year (covering data gathered through August 1 of the same year). This report shall contain information identified in subsections § 216.245(f)(1) through (f)(5).

(1) MFAS/HFAS Major Training Exercises—This section shall contain the following information for the major training exercises for reporting (MTERs), which include the Southeastern ASW Integrated Training Initiative (SEASWITI), Integrated ASW Course (IAC), Composite Training Unit Exercises (COMPTUEX), and Joint Task Force Exercises (JTFEX) conducted in the AFAST Study Area:

(i) *Exercise Information (for each MTER)*:

(A) Exercise designator;

(B) Date that exercise began and ended;

(C) Location;

(D) Number and types of active sources used in the exercise;

(E) Number and types of passive acoustic sources used in exercise;

(F) Number and types of vessels, aircraft, etc., participating in exercise;

(G) Total hours of observation by watchstanders;

(H) Total hours of all active sonar source operation;

(I) Total hours of each active sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.));

(J) Wave height (high, low, and average during exercise).

(ii) *Individual marine mammal sighting info (for each sighting in each MTER):*

(A) Location of sighting;

(B) Species (if not possible—indication of whale/dolphin/pinniped);

(C) Number of individuals;

(D) Calves observed (y/n);

(E) Initial Detection Sensor;

(F) Indication of specific type of platform observation made from (including, for example, what type of surface vessel, *i.e.*, FFG, DDG, or CG);

(G) Length of time observers maintained visual contact with marine mammal;

(H) Wave height (in feet);

(I) Visibility;

(J) Sonar source in use (y/n);

(K) Indication of whether animal is < 200 yd, 200–500 yd, 500–1000 yd, 1000–2000 yd, or > 2000 yd from sonar source in paragraph (f)(1)(ii)(J) of this section;

(L) Mitigation Implementation—Whether operation of sonar sensor was delayed, or sonar was powered or shut down, and how long the delay was;

(M) If source in use (*i.e.*, in paragraph (f)(1)(ii)(J) of this section) is hullmounted, true bearing of animal from ship, true direction of ship's travel, and estimation of animal's motion relative to ship (opening, closing, parallel);

(N) Observed behavior—Watchstanders shall report, in plain language and without trying to categorize in any way, the observed behavior of the animals (such as animal closing to bow ride, paralleling course/speed, floating on surface and not swimming, etc.).

(iii) An evaluation (based on data gathered during all of the MTERs) of the effectiveness of mitigation measures designed to avoid exposing marine mammals to MFAS. This evaluation shall identify the specific observations that support any conclusions the Navy reaches about the effectiveness of the mitigation.

(2) ASW Summary—This section shall include the following information as summarized from both MTERs and non-major training exercises:

(i) Total annual hours of each type of sonar source (along with explanation of how hours are calculated for sources typically quantified in alternate way (buoys, torpedoes, etc.)).

(ii) Cumulative Impact Report—To the extent practicable, the Navy, in coordination with NMFS, shall develop and implement a method of annually reporting non-major (i.e., other than MTERs) training exercises utilizing hull-mounted sonar. The report shall present an annual (and seasonal, where practicable) depiction of non-major training exercises geographically across the AFAST Study Area. To the extent practicable, this report will also include the total number of sonar hours (from helicopter dipping sonar and object detection exercises) conducted within

the southern NARW critical habitat plus 5 nm buffer area. The Navy shall include (in the AFAST annual report) a brief annual progress update on the status of the development of an effective and unclassified method to report this information until an agreed-upon (with NMFS) method has been developed and implemented.

(3) IEER/AEER Summary—This section shall include an annual summary of the following IEER and AEER information:

(i) Total number of IEER and AEER events conducted in the AFAST Study Area;

(ii) Total expended/detonated rounds (buoys);

(iii) Total number of self-scuttled IEER rounds.

(g) Sonar Exercise Notification—The Navy shall submit to the NMFS Office of Protected Resources (specific contact information to be provided in LOA) either an electronic (preferably) or verbal report within fifteen calendar days after the completion of any MTER indicating:

(1) Location of the exercise;

(2) Beginning and end dates of the exercise;

(3) Type of exercise (*e.g.*, COMPTUEX or SEASWITI).

(h) AFAST 5-yr 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 ASW, MIW and IEER/AEER exercises for which annual reports are required (Annual AFAST Exercise Reports and AFAST Monitoring Plan Reports). This report will be submitted at the end of the fourth year of the rule (November 2012), covering activities that have occurred through June 1, 2012.

(i) *Comprehensive National ASW Report*—By June, 2014, the Navy shall submit a draft National Report that analyzes, compares, and summarizes the active sonar data gathered (through January 1, 2014) from the watchstanders and pursuant to the implementation of the Monitoring Plans for AFAST, SOCAL, the HRC, the Marianas Range Complex, the Northwest Training Range, the Gulf of Alaska, and the East Coast Undersea Warfare Training Range.

(j) The Navy shall respond to NMFS comments and requests for additional information or clarification on the AFAST Comprehensive Report, the Comprehensive National ASW report, the Annual AFAST Exercise Report, or the Annual AFAST Monitoring Plan Report (or the multi-Range Complex Annual Monitoring Plan Report, if that is how the Navy chooses to submit the information) if submitted within 3 months of receipt. These reports will be considered final after the Navy has addressed NMFS' comments or provided the requested information, or three months after the submittal of the draft if NMFS does not comment by then.

(k) 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.

§ 216.246 Applications for Letters of Authorization.

To incidentally take marine mammals pursuant to the regulations in this subpart, the U.S. citizen (as defined by § 216.103) conducting the activity identified in § 216.240(c) (the U.S. Navy) must apply for and obtain either an initial Letter of Authorization in accordance with § 216.247 or a renewal under § 216.248.

§ 216.247 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 § 216.248.

(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).

§ 216.248 Renewal of Letters of Authorization and Adaptive Management.

(a) A Letter of Authorization issued under §§ 216.106 and 216.247 for the activity identified in § 216.240(c) will be renewed annually upon:

(1) Notification to NMFS that the activity described in the application submitted under § 216.246 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 (by the dates indicated in these regulations) of the monitoring reports required under § 216.245(c) through (j); and

(3) A determination by the NMFS that the mitigation, monitoring and reporting measures required under § 216.244 and the Letter of Authorization issued under §§ 216.106 and 216.247, 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 216.248 indicates that a substantial modification, as determined by NMFS, 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 AFAST or other locations).

(2) Findings of the Monitoring Workshop that the Navy will convene in 2011 (section 216.245(l)).

(3) Compiled results of Navy funded research and development (R&D) studies (presented pursuant to the ICMP (§ 216.245(d))).

(4) Results from specific stranding investigations (either from the AFAST Study Area or other locations, and involving coincident MFAS/HFAS or explosives training or not involving coincident use).

(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).

§ 216.249 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 216.247 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 § 216.248, 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 § 216.242(c), a Letter of Authorization issued pursuant to §§ 216.106 and 216.247 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.

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