

from 2006 to the present. No samples collected during that time were above acceptable levels for saxotoxins (80µg toxin/100g of shellfish).

The applicant has obtained endorsements for the EFP and the Protocol from the States of New Jersey and Delaware, the states in which it intends to land and process the product harvested under the EFP, respectively. Each state is responsible for regulating the molluscan shellfish industry within its jurisdiction and ensuring the safety of shellfish harvested within or entering its borders. This EFP would allow for an exemption from the Atlantic surfclam and ocean quahog GB Closure Area specified at 50 CFR 648.73(a)(4). The Protocol and the pilot project that would be authorized by this EFP have also since been endorsed by the executive board of the Interstate Shellfish Sanitation Conference.

The applicants may request minor modifications and extensions to the EFP throughout the course of research. EFP modifications and extensions may be granted without further public notice if they are deemed essential to facilitate completion of the proposed research and result in only a minimal change in the scope or impacts of the initially approved EFP request.

In accordance with NAO Administrative Order 216-6, a Categorical Exclusion or other appropriate NEPA document would be completed prior to the issuance of the EFP. Further review and consultation may be necessary before a final determination is made to issue the EFP. After publication of this document in the **Federal Register**, the EFP, if approved, may become effective following the public comment period.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: December 16, 2008.

Emily H. Menashes,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.
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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XM10

Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Conducting Air-to-Surface Gunnery Missions in the Gulf of Mexico

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and

Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of issuance of an incidental harassment authorization.

SUMMARY: In accordance with provisions of the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that an Incidental Harassment Authorization (IHA) to take marine mammals, by harassment, incidental to conducting air-to-surface (A-S) gunnery missions in the Gulf of Mexico (GOM), a military readiness activity, has been issued to Eglin Air Force Base (Eglin AFB) for a period of 1 year.

DATES: Effective from December 11, 2008, through December 10, 2009.

ADDRESSES: The authorization, Eglin AFB's application containing a list of the references used in this document, and NMFS' Environmental Assessment (EA) may be obtained by writing to P. Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910-3226. A copy of Eglin's original 2003 application and its December, 2006 letter updating its request may be obtained by writing to this address, by telephoning the contact listed here (see **FOR FURTHER INFORMATION CONTACT**) and is also available at: <http://www.nmfs.noaa.gov/pr/permits/incidental.htm#applications>. A copy of the Final Programmatic EA (Final PEA) is available by writing to the Department of the Air Force, AAC/EMSN, Natural Resources Branch, 501 DeLeon St., Suite 101, Eglin AFB, FL 32542-5133.

FOR FURTHER INFORMATION CONTACT: Kenneth R. Hollingshead, NMFS, 301-713-2289, ext 128.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*)(MMPA) 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) within a specified geographical region if certain findings are made and regulations are issued or, if the taking is limited to harassment, a notice of a proposed authorization is provided to the public for review.

Permission may be granted if NMFS finds that the taking will have a negligible impact on the affected species or stock(s), will not (where relevant)

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 takings 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."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the United States can apply for an authorization to incidentally take marine mammals by harassment. The National Defense Authorization Act of 2004 (NDAA) (P.L. 108-136) removed the "small numbers" and "specified geographical region" limitations and amended the definition of harassment as it applies to "military readiness activities" to read as follows:

(i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B harassment].

Summary of Request

Eglin AFB originally petitioned NMFS on February 13, 2003, for an authorization under section 101(a)(5)(D) of the MMPA for the taking, by Level B harassment, of several species of marine mammals incidental to programmatic mission activities within the Eglin Gulf Test and Training Range (EGTTR). The EGTTR is described as the airspace over the GOM that is controlled by Eglin AFB. A notice of receipt of Eglin's application and proposed IHA and request for 30-day public comment was published on January 23, 2006 (71 FR 3474). A 1-year IHA was subsequently issued to Eglin AFB for this activity on May 3, 2006 (71 FR 27695, May 12, 2006).

On January 29, 2007, NMFS received a request from Eglin AFB for a renewal of its IHA, which expired on May 2, 2007. This application addendum requested revisions to three components of the IHA requirements: protected species surveys, ramp-up procedures, and sea state restrictions. A **Federal Register** notice of receipt of the application and proposed IHA published on May 30, 2007 (72 FR 29974). These proposed modifications

are addressed in detail later in this document (see “Comments and Responses” and “Modifications to the Mitigation and Monitoring Requirements”).

A description of Eglin AFB's A-S gunnery activity follows.

Description of Activities

A-S gunnery missions, a “military readiness activity,” involve surface impacts of projectiles and small underwater detonations with the potential to affect cetaceans that may occur within the EGTTR. These missions typically involve the use of 25-mm (0.98-in), 40-mm (1.57-in), and 105-mm (4.13-in) gunnery rounds containing, 0.0662 lb (30 g), 0.865 lb (392 g), and 4.7 lbs (2.1 kg) of explosive, respectively. Live rounds must be used to produce a visible surface splash that must be used to “score” the round (the impact of inert rounds on the sea surface would not be detected). The U.S. Air Force (USAF) has developed a 105-mm training round (TR) that contains less than 10 percent of the amount of explosive material (0.35 lb; 0.16 kg) as compared to the “Full-Up” (FU) 105-mm (4.13 in) round. The TR was developed as one method to mitigate effects on marine life during nighttime A-S gunnery exercises when visibility at the water surface is poor. However, the TR cannot be used in daytime since the amount of explosive material is insufficient to be detected from the aircraft.

Water ranges within the EGTTR that are typically used for the gunnery operations are located in the GOM offshore from the Florida Panhandle (areas W-151A, W-151B, W-151C, and W-151D as shown in Figure 1-2 in Eglin's 2003 application). Data indicate that W-151A (Figure 1-3 in Eglin's application) is the most frequently used water range due to its proximity to Hurlburt Field, but activities may occur anywhere within the EGTTR.

As required under the 2006 IHA, the AC-130 gunship aircraft was to conduct at least two complete orbits at a minimum safe airspeed around a prospective target area at a maximum altitude of 1,500 ft (457 m). Based on an amendment requested by Eglin AFB and implemented here for safety reasons, NMFS recommends an operational altitude of approximately 4,500 to 10,000 ft (1,372–3,048 m). Ascent occurs over a 10–15 minute period. Eglin AFB has noted that the search area for these orbits ensures that no vessels (or protected species) are within an area of 5 nm (9.3 km) of the target. The AC-130 continues orbiting the selected target point as it climbs to the mission-testing

altitude. During the low altitude orbits and the climb to testing altitude, aircraft crew visually scan the sea surface within the aircraft's orbit circle for the presence of vessels and protected species. Primary responsibility for the surface scan is on the flight crew in the cockpit and personnel stationed in the tail observer bubble and starboard viewing window. The AC-130's optical and electronic sensors are also employed for target clearance. If any marine mammals are detected within the AC-130's orbit circle, either during initial clearance or after commencement of live firing, the aircraft will relocate to another target area and repeat the clearance procedures. A typical distance from the coast for this activity is at least 15 mi (24 km).

When offshore, the crews can scan a 5-nm (9.3-km) radius around the potential impact area to ensure it is clear of surface craft, marine mammals, and sea turtles. Scanning is accomplished using radar, all-light television (TV), infrared sensors (IR), and visual means. An alternative area would be selected if any cetaceans or vessels were detected within a 5-nm (9.3 km) search area. Once the scan is completed, Mk-25 flares are dropped and the firing sequence is initiated.

A typical gunship mission lasts approximately 5 hr without refueling and 6 hr when air-to-air refueling is accomplished. A typical mission includes: (1) 30 min for take off and to perform airborne sensor alignment, align electro-optical sensors (IR and TV) to heads-up display; (2) 1.5 to 2 hr of dry fire (no ordnance expended) and includes transition time; (3) 1.5 to 2 hr of live fire, and includes clearing the area and transiting to and from the range (actual firing activities typically do not exceed 30 min); (4) 1 hr air-to-air refueling, if and when performed; and (5) 30 min of transition work (take-offs, approaches, and landings-pattern work).

The guns are fired during the live-fire phase of the mission. The actual firing can last from 30 min to 1.5 hr but is typically completed in 30 min. The number and type of A-S gunnery munitions deployed during a mission varies with each type of mission flown. In addition to the 25-, 40-, and 105-mm rounds, marking flares are also deployed as targets. All guns are fired at a specific target in the water, usually an Mk-25 flare, starting with the lowest caliber ordnance or action with the least impact and proceeding to greater caliber sizes. To establish the test target area, two Mk-25 flares are deployed into the center of the 5-nm (9.3-km) radius cleared area (visually clear of aircraft, ships, and surface marine species) on

the water's surface. The flare's burn time normally lasts 10 to 20 min but could be much less if actually hit with one of the ordnance projectiles; however, some flares have burned as long as 40 min. Live fires are a continuous event with pauses during the firing usually well under a minute and rarely from 2 to 5 min. Firing pauses would only exceed 10 min if surface boat traffic or marine protected species caused the mission to relocate; if aircraft, gun, or targeting system problems existed; or if more flares needed to be deployed. The Eglin Safety Office has described the gunnery missions as having 95-percent containment with a 99-percent confidence level within a 5-m (16.4-ft) area around the established flare target test area.

Live-fire Event: 25-mm Round

The 25-mm (0.98-in) firing event in a typical mission includes approximately 500 to 1000 rounds. These rounds are fired in short bursts. These bursts last approximately 2–3 s with approximately 100 rounds per burst. Based on the very tight target area and extremely small miss distance, these bursts of rounds all enter the water within a 5-m (16.4-ft) area. Therefore, when calculations of the marine mammal Zone of Impact (ZOI) and take estimates are made later in this document for the 25-mm rounds, calculations will be based on the total number of rounds fired per year divided by 100.

Live-fire Event: 40-mm Round

The 40-mm (1.57 in) firing event of a typical mission includes approximately 10 s with approximately 20 rounds per burst. Based on the very tight target area and extremely small “miss” distance, these bursts of rounds all enter the water within a 5-m (16.4 ft) area. Therefore, when calculations of the marine mammal ZOI and take estimates are made later in this document for the 40-mm rounds, calculations will be based on the total number of rounds fired per year divided by 20.

Live-fire Event: 105-mm Round

The 105-mm firing event of a typical mission includes approximately 20 rounds. These rounds are not fired in bursts, but as single shots. The 105-mm firing event lasts approximately 5 min with approximately two rounds per minute. Due to the single firing event of the 105-mm round, the peak pressure of each single 105-mm round is measured at a given distance (90 m (295 ft)) for the 105mm TR and 216 m (709 ft) for the 105mm FU).

As described in Eglin's 2003 application, gunnery testing in this request includes historical baseline yearly amounts in addition to proposed nighttime gunnery missions. Daytime gunnery testing uses the 105-mm FU round and nighttime gunnery training is proposed using the 105-mm TR. The number of 105-mm rounds including nighttime operations would amount to 1,742. As shown in detail in Tables 1 and 2, Eglin proposes to conduct a total of 28 daytime missions and 263 nighttime missions annually, expending 3,832 rounds in daytime and 30,802 rounds nighttime (242 105-mm FU and 1,500 rounds would be the 105-mm TR).

Comments and Responses

A notice of receipt of Eglin AFB's application for an incidental take authorized under section 101(a)(5)(D) of the MMPA and request for 30-day public comment on the application and the proposed IHA was published on May 30, 2007 (72 FR 29974). During the 30-day public comment period, NMFS received comments from the Marine Mammal Commission (the Commission) and a member of the public.

Comment 1: A member of the public noted that it is not "incidental at all to kill whales, dolphins, and other marine life by firing flares and bombs at them."

Response: Eglin AFB proposes to conduct air-to-surface gunnery

exercises, a military readiness activity. Eglin does not fire flares, gunnery rounds, or bombs at marine mammals, but instead prevents injury or mortality to marine mammals by implementing mitigation measures. In order to reduce the probability of injuring or harassing a marine mammal that may be in the area where gunnery exercises occur, Eglin AFB will implement a suite of mitigation and monitoring measures as described in this document. For example, Eglin AFB will cease A-S gunnery exercises if marine mammals are detected within a 5-nm (9.8 km) radius of the target area. These measures are described later in this document.

TABLE 1. SUMMARY OF DAYTIME GUNNERY TESTING OPERATIONS IN THE EGTR

Test Area	Category	Expendable	Condition	Baseline Quantity of Expendables	Number of Missions	Number of Events
W-151A	GUN	105 mm HE	LIVE	128	6	18
		25 mm HEI	LIVE	1,275	1	1
		40 mm HEI	LIVE	536	6	18
W-151B	GUN	105 mm HE	LIVE	46	2	6
		25 mm HEI	LIVE	294	1	1
		40 mm HEI	LIVE	146	1	3
W-151C	GUN	105 mm HE	LIVE	10	1	3
		25 mm HEI	LIVE	142	1	1
		40 mm HEI	LIVE	50	1	3
W-151D	GUN	105 mm HE	LIVE	39	2	6
		25 mm HEI	LIVE	567	1	1
		40 mm HEI	LIVE	198	2	6
W-151S	GUN	105 mm HE	LIVE	19	1	3
		25 mm HEI	LIVE	283	1	1
		40 mm HEI	LIVE	99	1	3
Total				3,832	28	74

TABLE 2. SUMMARY OF NIGHTTIME GUNNERY TRAINING OPERATIONS IN THE EGTR

Test Area	Category	Expendable	Condition	Alt. 3 Quantity	Number of Missions	Number of Events
W-151A	GUN	105 mm TR	LIVE	902	45	135
		25 mm HEI	LIVE	7,864	8	8
		40 mm HEI	LIVE	9,811	102	306
W-151B	GUN	105 mm TR	LIVE	255	13	39
		25 mm HEI	LIVE	1,452	2	2
		40 mm HEI	LIVE	3,023	31	93
W-151C	GUN	105 mm TR	LIVE	197	9	36

TABLE 2. SUMMARY OF NIGHTTIME GUNNERY TRAINING OPERATIONS IN THE EGTTT—Continued

Test Area	Category	Expendable	Condition	Alt. 3 Quantity	Number of Missions	Number of Events
		25 mm HEI	LIVE	2,301	2	2
		40 mm HEI	LIVE	2,302	24	72
W-151D	GUN	105 mm TR	LIVE	133	7	21
		25 mm HEI	LIVE	830	1	1
		40 mm HEI	LIVE	1,583	16	48
W-151S	GUN	105 mm TR	LIVE	13	1	3
		25 mm HEI	LIVE	54	1	1
		40 mm HEI	LIVE	82	1	3
Total				30,802	263	770

The MMPA authorizes the taking of marine mammals provided the taking is incidental to conducting the otherwise lawful activity. In this case, the USAF has obtained a permit (called an IHA under section 101(a)(5)(D) of the MMPA or a Letter of Authorization (LOA) under section 101(a)(5)(A) of the MMPA) to take marine mammals incidental to military readiness activities. This process was explained earlier in this document.

Comment 2: The member of the public continues that the awful aim of these alleged military people is shown by the recent firing of a flare at Warren Grove firing range recently that burned 17,000 acres of the New Jersey Pinelands. That shows the inaccuracy of their aim. The commenter states that “Regarding the statements about the care they will take, they told us that before they bombed the school near Warren Grove gunnery range too. They set fires there with another mistake about 5 years ago that burned 14,000 acres. These alleged mistakes on killing and environmental destruction happen far too often with our military.”

Response: The commenter is referring to incidents that occurred at the New Jersey Air National Guard base at Warren Grove, NJ. Information on these incidents is available through Wikipedia, GlobalSecurity and other Internet sites. Accidents at this military base are not related to Eglin AFB’s offshore activity in the GOM. As mentioned previously, the Eglin AFB Safety Office has described the gunnery missions as having 95-percent containment with a 99-percent confidence level within a 5-m (16.4-ft) area around the established flare target test area. As a result, NMFS believes that no marine mammals will be killed

or seriously injured as a result of Eglin AFB’s A-S gunnery exercises.

Comment 3: The Commission recommends that NMFS issue the requested authorization, provided that the applicant be required to conduct all practicable monitoring and mitigation measures that reasonably can be expected to protect the potentially affected marine mammal species from serious injury.

Response: NMFS has determined that the mitigation measures proposed by Eglin AFB and required by NMFS under a new IHA for the A-S Gunnery exercises will protect marine mammals from any injury or mortality and will reduce Level B harassment impacts to the lowest level practicable.

Comment 4: The Commission recommends that NMFS should require that the applicant’s annual report of activities include a detailed assessment of the effectiveness of sensor-based monitoring in detecting marine mammals and sea turtles in the area of operations.

Response: NMFS agrees and has requested this information as part of its annual monitoring report.

Comment 5: The Commission recommends that NMFS should require the applicant to provide additional information to support its request for the revision of sea state restrictions.

Response: NMFS does not agree that additional information is needed at this time. NMFS points out that a mitigation requirement for not conducting an activity in a sea state greater than 3 (in some cases, 3.5) is standard for vessel and aircraft using marine mammal observers. However, in the IHA application, Eglin AFB makes clear that it would be difficult for Eglin AFB to conduct operations with a limitation of a sea state of 3 or less. As Eglin AFB explains in their current IHA

application, sea state 4 encompasses wind speed up to a maximum of 16 knots (18 mph). Under these conditions, whitecaps are fairly frequent on the sea surface, but sea spray does not occur. Sea spray, whitecaps, and large waves can decrease the effectiveness of IR detection. However, marine species can usually be observed in weather conditions that allow observation of the target flare. One must remember that visual observations are enhanced, especially at night, by use of the AN/AAQ-26 infrared detection equipment in concert with the All-Light TV, which are the primary sensors utilized to clear an over-water range. Therefore, because Eglin AFB relies principally on electronic detection instrumentation and less on visual observations, an increase in sea state from 3 to 4 is unlikely to compromise mitigation effectiveness or result in the probability of increased harassment, injury or mortality to marine mammals.

Comment 6: The Commission reiterates its view that an across-the-board definition of temporary threshold shift (TTS) as constituting no more than Level B harassment inappropriately dismisses possible injury and biologically significant behavioral changes that may occur if an animal’s hearing is compromised, even temporarily.

Response: This issue has been addressed several times by NMFS in the past (see for example 70 FR 48675, August 19, 2005; and 66 FR 22450, May 4, 2001). As stated in those documents, the best scientific information available concludes that TTS is not an auditory injury, but is a temporary physiological reaction on the part of mammals to avoid an injury. The Commission, however, argues for considering TTS as both Level A harassment and Level B

harassment based on conjecture on what might occur if a marine mammal with compromised hearing was at a disadvantage for survival. As noted previously, it is likely that marine mammals evolved certain behavioral responses to address natural loud noises in the environment (for example, billions of lightning strikes per year on the ocean at about 260 dB peak) by changes in conspecific spatial separation. For a more detailed analysis of why TTS is not considered Level A harassment, please refer to the **Federal Register** citations provided here. You may also refer to Southall *et al.* (2007) for information on this subject.

Comment 7: With regard to estimates of potential take, the Commission states that NMFS appears to assume that nine of ten animals that are exposed to sounds loud enough to temporarily deafen them would not be otherwise disturbed. The Commission believes that the literature on marine mammals contains considerable evidence that marine mammals will exhibit significant changes in their behavioral patterns in response to sounds much less intense than those required to cause TTS.

Response: First, NMFS cautions against using incorrect terminology. Marine mammals subject to TTS are not “deafened,” even temporarily. Instead, marine mammals with TTS have a decrease in hearing sensitivity that may last from a few seconds to several hours, depending upon several factors. That does not mean that they cannot hear, only that they may not perceive those quieter sounds that are below this temporary hearing threshold. Humans may incur with same temporary phenomenon when using iPods and attending loud sporting events or concerts.

Second, for Eglin AFB’s air-to-surface gunnery activity, Eglin and NMFS have calculated estimates for behavioral responses by marine mammals at levels lower than TTS. In the case of the A-S gunnery exercises, this is due to multiple detonations and potential marine mammal exposures by the gunnery activity. These calculations are provided later in this document. However, in other applications, when there are only single detonations (such as in Eglin AFB’s Precision Strike Weapon and the U.S. Navy shock trials), it is unlikely that marine mammals would have a significant behavioral response (but may have a response due to TTS, which has been accounted for) to the single detonation. For more information on this subject, NMFS recommends interested readers review Appendices C and D of the Navy’s 2008 Final Environmental Impact Statement

(EIS) for the MESA VERDE shock trial. The Navy’s Final EIS is available for viewing or downloading at: <http://www.mesaverdeeis.com>.

Comment 8: The Commission recommends that NMFS either provide a rational explanation for what appears to be an assumption that marine mammals would have to experience sound levels well above that required to cause TTS before they would experience a behavioral disturbance or revise its estimates of the number of animals to be taken by behavioral disturbance to a more realistic number.

Response: NMFS believes that the Commission is referring to Table 1 in the earlier **Federal Register** notice (and Table 11 in this **Federal Register** notice) wherein Eglin AFB and NMFS have provided estimates for Level A harassment (injury), Level B harassment (TTS) and Level B harassment (behavioral harassment). For Level B harassment, we have provided those estimates using the dual criteria (energy and pressure) for TTS, but only for pressure for behavioral harassment. As explained previously, NMFS adopted a dual criterion for TTS Level B harassment, but has not adopted a dual criterion for non-TTS behavioral responses by marine mammals. A TTS pressure criterion was added during earlier shock trial rulemakings (see 87 FR 22450, May 4, 2001) to provide a more conservative zone for calculating potential TTS exposures when the explosive or the animal approaches the sea surface (for which cases the explosive energy is reduced but the peak pressure is not). Originally established at 12 psi for large charges (such as in the 10,000 lb (4536 kg) shock trials), empirical research now supports a pressure metric of 23 psi, as explained previously (see 70 FR 48675, August 19, 2005). The 23-psi metric for onset TTS was adopted previously by NMFS for this action and by the U.S. Navy for large detonations (see reference provided in previous response.) Explanation is provided elsewhere in this document (and in the proposed IHA notice) on NMFS’ incorporation of 176 dB (SEL) for calculating behavioral responses below TTS. Therefore, while NMFS believes that one would generally expect the pressure (dB) threshold for behavioral modification to be lower than that causing TTS, due to a lack of empirical information and data, a dual criteria for Level B behavioral harassment cannot be developed. Later in this document, NMFS has estimated potential Level B (behavioral) harassment below TTS due to the multiple detonations occurring as part of this activity. In addition, NMFS plans

to investigate this situation during the development of a proposed rule on this action and will provide the Commission and the public additional information at that time.

Comment 9: The Commission recommends that NMFS review and provide more reasonable justification for its models and assumptions that lead to the conclusion that no animals will be killed during the course of a full year of such exercises. The Commission also questions NMFS’ method for estimating the number of animals that may be killed by these exercises.

Response: This information was provided in the 2006 notice of issuance of an IHA to Eglin AFB for A-S gunnery exercises (71 FR 27695, May 12, 2006). NMFS recommends that reviewers of this year’s application refer to that document for additional information. However, as a result of the Commission’s recommendation and to ensure clarity of its MMPA determinations, NMFS has reprinted those findings in this document.

Comment 10: The Commission notes that in its response to its comments on the previous year’s request for an IHA (71 FR 27701, May 12, 2006), NMFS suggested that to experience a significant behavioral disturbance, animals would have to be within 22.1 m (72.5 ft) of the zone of impact from an aircraft flying at 6,000 ft (1829 m). In this year’s analysis, NMFS indicates that up to 25 animals may be at least that close, but that none would be killed. It seems hard to imagine that, either through inaccuracy in firing or confusion on the part of animals within 22 m (72 ft) (e.g., darting into the zone of impact), no animals would be killed over the course of a year of such exercises. For that reason, the Commission recommends that NMFS review and provide a more reasonable justification for its models and assumptions that lead to the conclusion that no animals will be killed during the course of a full year of such exercises.

Response: NMFS has republished in this document several tables on the calculations for direct physical impact (DPI) that were published in the cited 2006 **Federal Register** notice. These tables all indicate that the potential for mortality is close to non-existent. In the proposed IHA notice, NMFS published the calculations for estimating the potential for marine mammals to be harassed, injured or killed as a result of A-S gunnery exercises. NMFS has not received any comments from the public or the Commission criticizing the methodology of these calculations (they are not based on models, but on calculations based on species/stock

density, area of impact and number of events as described previously and later in this document). The hypothesis proposed by the Commission that animals may dart into the small DPI zone(s) fails to account for the effectiveness of the mitigation measures required under the IHA. These measures are analyzed later in this document. Since the usual area of these live-fire events are in coastal waters, the marine mammals will likely be detectable electronically to the aircraft personnel when at firing altitude. As a final note, if marine mammals have been seriously injured or killed by A-S gunnery exercises in the past, necropsies of GOM marine mammals stranded on a beach should have indicated single or multiple wounds caused by gunnery projectiles. NMFS is unaware of any marine mammals containing the projectiles with a caliber consistent with that used by Eglin.

Comment 11: The Commission notes that NMFS is proposing to require that operations be suspended immediately if a dead or seriously injured marine mammal is found in the vicinity of the operations and the death or injury could have occurred incidental to the gunnery activities. Any such suspension should remain in place until NMFS has (1) reviewed the situation and determined that further mortalities or serious injuries are unlikely to occur or (2) issued regulations authorizing such takes under section 101(a)(5)(A) of the MMPA.

Response: NMFS agrees. In the case of Eglin AFB's A-S Gunnery exercises, if marine mammals are found with injuries from gunnery rounds matching those used by the AC-130 gunships, NMFS will suspend Eglin's IHA until such time as (1) another cause for the wound(s) is/are found to have caused the animal(s) demise; (2) Eglin AFB reevaluates the A-S gunnery program and adds additional mitigation to ensure that marine mammals are not seriously injured or killed by future A-S Gunnery exercises, or (3) Eglin AFB receives an authorization under section 101(a)(5)(A) of the MMPA. In that latter regard, regardless of whether mortality is a possibility, NMFS plans to issue proposed regulations for Eglin's A-S Gunnery exercises to be effective upon expiration of this IHA.

Description of Marine Mammals Affected by the Activity

There are 29 species of marine mammals documented as occurring in Federal waters of the GOM. Of these 29 species of marine mammals, approximately 21 may be found within

the EGTR. These species are the Bryde's whale, sperm whale, dwarf sperm whale, pygmy sperm whale, Atlantic bottlenose dolphin, Atlantic spotted dolphin, pantropical spotted dolphin, Blainville's beaked whale, Cuvier's beaked whale, Gervais' beaked whale, Clymene dolphin, spinner dolphin, striped dolphin, killer whale, false killer whale, pygmy killer whales, Risso's dolphin, Fraser's dolphin, melon-headed whale, rough-toothed dolphin, and pilot whale. General information on these species can be found in Wursig *et al.* (2000) and in the NMFS Stock Assessment Reports (Waring *et al.*, 2007). This latter document is available at: <http://www.nefsc.noaa.gov/nefsc/publications/tm/tm205/>. General information on Florida manatees, which is not a species under NMFS jurisdiction, can be found in the Florida Manatee Recovery Plan (USFWS, 2001).

Potential Impacts to Marine Mammals

A-S gunnery operations may potentially impact marine mammals at or near the water surface. Marine mammals could potentially be harassed, injured or killed by exploding and non-exploding projectiles, and falling debris (Eglin, 2002 (Final PEA)). However, based on analyses provided in the Eglin Final PEA, Eglin's Supplemental Information Request (2003), and NMFS' 2008 EA, NMFS concurs with Eglin that gunnery exercises are not likely to result in any injury or mortality to marine mammals. Explosive criteria and thresholds for assessing impacts of explosions on marine mammals were discussed by NMFS in detail in its issuance of an IHA for Eglin's Precision Strike Weapon testing activity (70 FR 48675, August 19, 2005) and are not repeated here. Please refer to that document for this background information.

Estimation of Take and Impact

Direct Physical Impacts (DPI)

Potential impacts resulting from A-S test operations include DPI resulting from ordnance. DPI could result from inert bombs, gunnery ammunition, and shrapnel from live missiles falling into the water. Marine mammals swimming at the surface could potentially be injured or killed by projectiles and falling debris if not sighted and firing discontinued. Mainly due to the comparatively large number of rounds expended, small arms gunnery operations offers a worst-case scenario for evaluating DPI of EGTR operations. Some small-arms gunnery rounds

contain small amounts of explosives, but the majority do not. However, the possibility of DPI to marine mammals is considered highly unlikely. Therefore, the risk of injury or mortality is low. The assumptions made by Eglin AFB for DPI calculations can be found in Eglin's 2002 Final PEA under the analysis for Alternative 1. Approximately 606 small-arms gunnery firing events comprise the baseline level of potential DPI events, as shown here in Table 3.

DPI impacts are only anticipated to affect marine species at or very near the ocean surface. As a result, in order to calculate impacts, Eglin used corrected species densities (see Table 4–23 in Eglin's Final PEA) to reflect the surface interval population, which is approximately 10 percent of densities calculated for distribution in the total water column. As shown in Table 4 (and thereby correcting PEA Table 4–23), the impacts to marine mammals swimming at the surface that could potentially be injured or killed by projectiles and falling debris was determined to be an average of 0.2059 marine mammals per year. However, NMFS believes that the mitigation measures that Eglin proposes under this action would significantly reduce even these low levels.

In addition to small arms, Eglin calculated the potential for other non-explosive items (bombs, missiles, and drones) to impact marine mammals. The number of annual events expected are 551 bombs, 1,183 missiles, and 99 drones (see Table 5). As shown in Eglin's 2002 Final PEA and Table 6 in this document, the potential for any DPI to marine mammals is extremely remote (1 cetacean per 48 yr of activity) and can, therefore, be discounted.

Similar to non-small arms/non-gunnery DPI impacts, DPI impacts from gunnery activities may also affect marine mammals in the surface zone. Again, DPI impacts are anticipated to affect only marine mammals at or near the ocean surface, and not animals that are submerged at the time. Accordingly, the density estimates have been adjusted to indicate surface animals only being potentially affected. Using the firing methodology explained earlier in this document, Tables 7 and 8 demonstrate that the potential for any DPI from gunnery activities are extremely remote and can be discounted. Using the largest round (105 mm), it would take approximately 120 yr to impact a marine mammal from daytime gunnery activities and approximately 27 yr to impact a marine mammal from nighttime gunnery activities.

TABLE 3. EGTTT AIR-TO-SURFACE GUNNERY/SMALL ARMS OPERATIONS AS EVENTS

Activity/EGTTT Event	Percentage	Number
Small Arms-50 Cal Ball Events	16.3 percent	99
Small Arms 5.56 Linked Events	0.8 percent	5
Small Arms 7.62 mm Ball Events	82.8 percent	502
Total Baseline -Small Caliber Events	100 percent	606

TABLE 4. POTENTIAL SMALL ARMS DPI IMPACTS (ANNUAL) TO MARINE MAMMAL SPECIES

Species	Density (#/km ²)	Adjusted Density (#/km ²)	Impact Zone Area ¹ (km ²)	Animals in Impact Zone (#)	Years To Impact 1 Mammal(#)
Cetaceans	4.381	0.4381	0.047874	2.10E-02	48
T&E Cetaceans	0.011	0.0011	0.047874	5.27E-05	18,989

TABLE 5. NON-SMALL ARMS OPERATIONS AS EVENTS

Activity/EGTTT Event	Percentage	Number
Bombs	30.1 percent	551
Missiles	64.5 percent	1183
Drones	5.4 percent	99
Total Baseline Non-Small Arms Events	100 percent	1833

TABLE 6. POTENTIAL NON-SMALL ARMS/NON-GUNNERY DPI IMPACTS (ANNUAL) TO MARINE MAMMAL SPECIES

Species	Density (#/km ²)	Adjusted Density (#/km ²)	Impact Zone Area ¹ (km ²)	Animals in Impact Zone (#)	Years To Impact 1 Mammal(#)
Cetaceans	4.381	0.4381	0.00688	0.003014128	332
T&E Cetaceans	0.011	0.0011	0.0688	0.000007568	132,135

TABLE 7. POTENTIAL DAYTIME GUNNERY DPI IMPACTS (ANNUAL) TO MARINE CETACEANS.

Species/shell size	Density (#/km ²)	Adjusted Density (#/km ²)	Impact Zone Area (km ²)	Number of Events (#)	Animals in Impact Zone (#)	Years To Impact 1 Animal (#)
Cetacea (25mm)	4.381	0.4381	.00007854	26	.000881198	1,135
Cetacea (40mm)	4.381	0.4381	.00007854	51	.001770311	565
Cetacea (105mm)	4.381	0.4381	.00007854	242	.008326827	120

TABLE 8. POTENTIAL NIGHTTIME GUNNERY DPI IMPACTS (ANNUAL) TO MARINE CETACEANS.

Species/shell size	Density (#/km ²)	Adjusted Density (#/km ²)	Impact Zone Area (km ²)	Number of Events (#)	Animals in Impact Zone (#)	Years To Impact 1 Animal (#)
Cetacea (25mm)	4.381	0.4381	.00007854	125	.004287972	233
Cetacea (40mm)	4.381	0.4381	.00007854	723	.024873814	40
Cetacea (105mm)	4.381	0.4381	.00007854	1061	.036507285	27

Marine Mammal Take Estimates from Gunnery Activities

Estimating the impacts to marine mammals from underwater detonations is difficult due to complexities of the physics of explosive sound under water and the limited understanding with respect to hearing in marine mammals. Detailed assessments were made in the notice for the previous IHA on this action (71 FR 27695, May 12, 2006) and in this **Federal Register** notice. These assessments used, and improved upon, the criteria and thresholds for marine mammal impacts that were developed for the shock trials of the *USS SEAWOLF* and the *USS Winston S. Churchill* (DDG-81) (Navy, 1998; 2001). The criteria and thresholds used in those actions were adopted by NMFS for use in calculating incidental takes from explosives. Criteria for assessing impacts from Eglin AFB's A-S gunnery exercises include: (1) mortality, as determined by exposure to a certain level of positive impulse pressure (expressed as pounds per square inch per millisecond or psi-msec); (2) injury, both hearing-related and non-hearing related; and (3) harassment, as determined by a temporary loss of some hearing ability and behavioral reactions. Similar to the effects from DPI, due to the small amounts of net explosive weight (NEW) for each of the rounds fired in the EGTTR and the mitigation measures required to be implemented by NMFS, mortality resulting from either DPI or the resulting sounds generated into the water column from detonations was determined to be highly unlikely and was not considered further by Eglin AFB or NMFS.

Permanent hearing loss is considered an injury and is termed permanent threshold shift (PTS). NMFS, therefore, categorizes PTS as Level A harassment. Temporary loss of hearing ability is termed TTS, meaning a temporary reduction of hearing sensitivity which abates following noise exposure. TTS is considered non-injurious and is categorized as Level B harassment. NMFS recognizes dual criteria for TTS, one based on peak pressure and one based on the greatest 1/3 octave sound exposure level (SEL) or energy flux density level (EFDL), with the more conservative (i.e., larger) of the two criteria being selected for impacts analysis (note: SEL and EFDL are used interchangeably, but with increasing scientific preference for SEL). The peak pressure metric used in previous shock trials to represent TTS was 12 pounds per square inch (psi) which, for the NEW used, resulted in a zone of possible Level B harassment

approximately equal to that obtained by using a 182 decibel (dB) re 1 microPa_{2-s}, total EFDL/SEL metric. The 12-psi metric is largely based on anatomical studies and extrapolations from terrestrial mammal data (see Ketten, 1995; Navy, 1999 (Appendix E, Churchill FEIS; and 70 FR 48675 (August 19, 2005)) for background information). However, the results of a more recent investigation involving marine mammals suggest that, for small charges, the 12-psi metric is not an adequate predictor of the onset of TTS.

Finneran et al. (2002) measured TTS in a bottlenose dolphin and a beluga whale exposed to single underwater impulses produced by a seismic water gun in San Diego Bay. The water gun was chosen over other seismic sources, such as air guns, because the impulses contain more energy at high frequencies where odontocete hearing thresholds are relatively low (i.e., more sensitive). Hearing thresholds were measured at 0.4, 4, and 30 kilohertz (kHz). A relatively small and short-term level of masked TTS (MTTS) (7 dB at 0.4 kHz and 6 dB at 30 kHz) occurred in the beluga whale at a peak pressure of 160 kilopascals (kPa), which is equivalent to 23 psi, 226 dB re 1 micro Pa peak-peak pressure, and 186 dB re 1 microPa_{2-s}. The maximum experimental peak pressure exposure of 207 kPa (30 psi, 228 dB re 1 microPa peak-peak pressure, 188 dB re 1 microPa_{2-s}) did not cause any measurable masked TTS in the bottlenose dolphin. The results of these field experiments represent the most current science available for the relationship between peak pressure and TTS in marine mammals. It is also considered precautionary for this project since the bottlenose dolphin did not incur an MTTS at the higher level of 30 psi. Therefore, until additional information becomes available, 23 psi is considered an appropriate and conservative metric for predicting the onset of pressure-related TTS from small explosive charges.

Documented behavioral reactions occur at noise levels below those considered to cause TTS in marine mammals (Finneran et al., 2002; Schlundt et al., 2000; Finneran and Schlundt, 2004). In controlled experimental situations, behavioral effects are typically defined as alterations of trained behaviors. Behavioral effects in wild animals are more difficult to define but may include decreased ability to feed, communicate, migrate, or reproduce. Abandonment of an area due to repeated noise exposure is also considered a behavioral effect. Analyses in subsequent sections of this document refer to such behavioral

effects as "sub-TTS Level B harassment." Schlundt et al. (2000) exposed bottlenose dolphins and beluga whales to various pure-tone sound frequencies and intensities in order to measure underwater hearing thresholds. Masking is considered to have occurred because of ambient noise environment in which the experiments took place. Sound levels were progressively increased until behavioral alterations were noted (at which point the onset of TTS was presumed). It was found that decreasing the sound intensity by 4 to 6 dB greatly decreased the occurrence of anomalous behaviors. The lowest sound pressure levels, over all frequencies, at which altered behaviors were observed, ranged from 178 to 193 dB re 1 micro Pa for the bottlenose dolphins and from 180 to 196 dB re 1 micro Pa for the beluga whales. Thus, it is reasonable to consider that sub-TTS (behavioral) effects occur at approximately 6 dB below the TTS-inducing sound level, or at approximately 176 dB in the greatest 1/3 octave band EFDL/SEL.

Table 9 summarizes the relevant thresholds for levels of noise that may result in Level A (injury) harassment, Level B (TTS) behavioral harassment or Level B (sub-TTS) behavioral harassment to marine mammals. Mortality and injury thresholds are designed to be conservative by considering the impacts that would occur to the most sensitive life stage (e.g., a dolphin calf). Table 10 provides the estimated ZOI radii for the EGTTR ordnance. At this time, there is no empirical data or information that would allow NMFS to establish a peak pressure criterion for sub-TTS behavioral disruption (see response to comment 8).

As mentioned previously, the EGTTR live fire events are continuous events with pauses during the firing usually well under a minute and rarely from 2 to 5 min. Live fire typically occurs within a 30 min time frame, including all ordnance fired: 25 mm (Phase I), 40 mm (Phase II), and 10 mm (Phase III), and where the 105-mm ordnance are fired as separate rounds with up to 30-s intervals, the 25-mm and the 40-mm are often fired in multiple bursts. These bursts include multiple rounds (25 to 100) within a 10- to 20-s time frame. Eglin notes that even if animal avoidance once firing commences is not considered, the average swim speed (1.5 m/s) of an animal would not allow sufficient time for new animals to re-enter the Level B harassment ZOI (23 psi) within the time frame of a single burst. As such, only the peak pressure of a single round is measured per burst and experienced at a given distance (49

m (161 ft; Phase I), 122 m (400 ft; Phase II)).

TABLE 9. EGTTT CRITERIA AND THRESHOLDS FOR IMPACT OF EXPLOSIVE NOISE ON MARINE MAMMALS

Criterion	Criterion Definition	Threshold
Level A Harassment-Auditory Injury	50% of Animals Exposed Would Experience Ear-Drum Rupture, Resulting in Approximately 30% PTS	205 dB Total EFDL
Level B Harassment	Temporary Threshold Shift (NMFS Dual Criterion)	23 PSI Peak Pressure
Level B Harassment	Temporary Threshold Shift (NMFS Dual Criterion)	182 dB 1/3 Octave Band EFDL
Level B Harassment	Sub-TTS Behavioral Disruption	176 dB 1/3 Octave Band EFDL

TABLE 10. ESTIMATED RANGE FOR A ZONE OF IMPACT (ZOI) DISTANCE FOR THE EGTTT ORDNANCE.

Expendable	Level A Harassment-Injurious (205 dB) EFD (m)	Level B Harassment Non-Injurious (182 dB) EFD For TTS (m)	Level B Harassment Non-Injurious (23 psi) For TTS (m)	Level B Harassment-Non-Injurious (176 dB) EFD For Behavior (m)
105 mm FU	0.79	11.1	216	22.1
105-mm TR	0.22	3.0	90	6.0
40-mm HE	0.33	4.7	122	9.4
25-mm HE	0.11	1.3	49	2.6

FU=Full-up; TR=Training Round; HE=High Explosive

For daytime firing it is assumed that the average swim speed per cetacean is approximately 3 knots or 1.5 m/sec. As a conservative scenario, Eglin assumes that there is one animal present within or near the 216-m ZOI (FU 105-mm round ZOI) which may be potentially ensounded within the 23-psi TTS exposure at the time that the 105-mm live firing begins. Density distributions have assumed an even distribution of approximately 4.38 animals/km² or approximately 500 m (1640 ft) apart (all species) for the take estimate analysis. At this density distribution and typical swim speed, the next available cetacean would approach the perimeter of the 216-m (709 ft) ZOI (23-psi TTS ZOI) in approximately 5.5 min, assuming a straight line path. With live-fire events for the 105-mm occurring at a rate of approximately 2 rounds/min, nearly one half (or 10 rounds) of the total 105-mm rounds (20 rounds) would potentially be expended within this 5.5 min time frame. If the concept of marine mammal avoidance of an area once firing commences is not considered, an average swim speed of 1.5 m/s (4.9 ft/s) would allow sufficient time for new animals to re-enter the 23-psi TTS impact area. Allowing for a potential 2 min break in firing after 10 rounds are expended, it is, therefore, conservative and reasonable to assume that nearly 3 to 4 individual animals could be exposed to the 23-psi TTS sound level

during a typical 20 round firing event. Therefore, the ZOI and Level B harassment take estimate calculations are based on the total number of rounds fired per year divided by 5, or approximately 20 percent. This approach assumes that although single animals may be ensounded more than once due to the time required to exit the 23 psi TTS ZOI, animals are not considered to be "taken" more than once for the purposes of estimating take levels.

Similarly, as a conservative approach for nighttime firing, Eglin assumes that there is one animal present within or near the 90-m (295-ft) ZOI (105-mm TR ZOI) which may be potentially ensounded within the 23-psi TTS exposure zone at the time that the 105-mm round live firing phase begins. Density distributions have assumed an even distribution of approximately 4.38 animals/km² (all species) for the approach of impact analyses for estimation of take. At this density distribution and typical swim speed, the next available cetacean would approach the perimeter of the 90-m (295-ft) ZOI (23-psi TTS ZOI) in approximately 5.5 min or the same time as with the 216-m ZOI (used for the 105-mm FU). The difference is the amount of time it takes the animal to exit the ZOI or in other words, how long the animal resides within the ZOI on a straight line path. With live fire events of the 105-mm

round occurring at a rate of approximately 2 rounds per min, nearly one half (or 10 rounds) of the total 105-mm rounds (20 rounds) would potentially be expended within this 5.5-min time frame. If the concept of marine mammal avoidance of an area once firing commences is not considered, an average swim speed (1.5 m/s) of animals would allow sufficient time for new animals to re-enter the 23-psi TTS impact area. Allowing for a potential 2-min break in firing after 10 rounds are expended, it is conservative and reasonable to assume that nearly 3 to 4 individual animals may be potentially exposed to the 23-psi TTS sound level during a typical 20 round firing event. Therefore, the ZOI and take estimate calculations are based on the total number of rounds fired per year divided by 5, or approximately 20 percent. This approach assumes that, although single animals may be ensounded more than once due to the time required to exit the 23-psi TTS ZOI, individual animals are not considered to be "taken" more than once for the purposes of estimating take levels.

Based on this discussion, Table 11 in this **Federal Register** document provides Eglin AFB's estimates of the annual number of marine mammals, by species, potentially taken by Level B harassment, by the gunnery mission noise. It should be noted that these estimates are derived without

consideration of the effectiveness of Eglin AFB's proposed mitigation measures (except use of the TR), which are discussed in the next section.

Mitigation Measures

Under the previous IHA, Eglin AFB employed a number of mitigation measures in an effort to substantially decrease the number of animals potentially affected. These mitigation measures are discussed first. The modifications to the mitigation measures requested by Eglin AFB as part of its IHA request for renewal for this IHA will follow in this document.

Development of the Training Round

The largest type of ammunition used during typical gunnery missions is the 105-mm (4.13-in) round containing 4.7 lbs (2.1 kg) of high explosive (HE). This is several times more HE than that found in the next largest round (40 mm/1.57 in). As a mitigation technique, the USAF developed a 105-mm TR that contains only 0.35 lb (0.16 kg) of HE. The TR was developed to dramatically reduce the risk of harassment at night and Eglin AFB anticipates a 96 percent reduction in impact by using the 105-mm TR.

Visual Mitigation

Areas to be used in gunnery missions are visually monitored for marine

mammal presence from the AC-130 aircraft prior to commencement of the mission. If the presence of one or more marine mammals is detected, the target area will be avoided. In addition, monitoring will continue during the mission. If marine mammals are detected at any time, the mission will halt immediately and relocate as necessary or suspended until the marine mammal has left the area. Daytime and nighttime visual monitoring will be supplemented with IR and TV monitoring. As nighttime visual monitoring is generally considered to be ineffective at any height, the EGTR missions will incorporate the TR.

TABLE 11. YEARLY ESTIMATED NUMBER OF MARINE MAMMALS AFFECTED BY GUNNERY MISSION NOISE

Species	Adjusted Density (#/km ²)	Level A Harassment Injurious 205 dB* EFD For Ear Rupture	Level B Harassment Non-Injurious 182 dB* EFD For TTS	Level B Harassment Non-Injurious 176 dB* EFD For Behavior
Bryde's whale	0.007	<0.001	0.010	0.041
Sperm whale	0.011	<0.001	0.016	0.064
Dwarf/pygmy sperm whale	0.024	<0.001	0.035	0.139
Cuvier's beaked whale	0.10	<0.001	0.015	0.058
Mesoplodon spp.	0.019	<0.001	0.028	0.110
Pygmy killer whale	0.030	<0.001	0.044	0.174
False killer whale	0.026	<0.001	0.038	0.151
Short-finned pilot whale	0.027	<0.001	0.039	0.157
Rough-toothed dolphin	0.028	<0.001	0.041	0.163
Bottlenose dolphin	0.810	0.006	1.177	4.706
Risso's dolphin	0.113	0.001	0.164	0.657
Atlantic spotted dolphin	0.677	0.005	0.984	3.934
Pantropical spotted dolphin	1.077	0.008	1.565	6.258
Striped dolphin	0.237	0.002	0.344	1.377
Spinner dolphin	0.915	0.007	1.330	5.316
Clymene dolphin	0.253	0.002	0.368	1.470
Unidentified dolphin**	0.053	<0.001	0.077	0.308
Unidentified whale	0.008	<0.001	0.012	0.046
All marine mammals	4.325	0.032	6.29	25.13

* dB = dB re 1 μ Pa.s

** Bottlenose dolphin/Atlantic spotted dolphin

Ramp-Up

In 2006, Eglin incorporated a ramp-up procedure by beginning with the smallest round (or the round having least impact) and proceeding to subsequently larger size rounds (in this

case the lowest caliber of munition up to the 105-mm FU round). Theoretically, this allows animals to perceive steadily increasing sounds and to react, if necessary. Alerting animals in advance of injurious sound waves by

transmitting low-power "warning" signals a short time before the action provides a safeguard where there is a potential for the risk of injury.

Other Mitigation

Under the 2006 IHA, NMFS required additional mitigation measures to protect marine life. These requirements were:

(1) Test firing will be conducted only when sea surface conditions are sea state 3.5 or less on the Beaufort scale.

(2) Prior to each firing event, the aircraft crew will conduct a visual survey of the 5-nm (9.3-km) wide prospective target area to attempt to sight any protected species that may be present (e.g., marine mammals, sea turtles, and Sargassum rafts). The AC-130 gunship will conduct at least two complete orbits at a minimum safe airspeed around a prospective target area at a maximum altitude of 1,500 ft (457 m), with a recommended altitude of 1,000 ft (305 m). Provided protected species are not detected, the AC-130 can then continue orbiting the selected target point as it climbs to the mission testing altitude. During the low altitude orbits and the climb to testing altitude, the aircraft crew will visually scan the sea surface within the aircraft's orbit circle for the presence of listed and non-listed marine mammals. Primary emphasis for the surface scan will be upon the flight crew in the cockpit and personnel stationed in the tail observer bubble and starboard viewing window. The AC-130's optical and electronic sensors will also be employed for target clearance. If any marine mammals are detected within the AC-130's orbit circle, either during initial clearance or after commencement of live firing, the aircraft will relocate to another target and repeat the clearance procedures. If multiple firing events occur within the same flight, these clearance procedures will precede each event.

(3) The aircrews of the A-S gunnery missions will initiate location and surveillance of a suitable firing site immediately after exiting U.S. territorial waters (less than or equal to 12 nm (22 km)). This would potentially restrict most gunnery activities to the shallower continental shelf waters of the GOM where marine mammal densities are typically lower, and thus potentially avoid the slope waters where the more sensitive species (e.g., endangered sperm whales) typically reside.

(4) Observations will be accomplished using all-light TV, IR sensors, and visual means for at least 60 min prior to each exercise.

(5) Aircrews will utilize visual, night vision goggles, and other onboard sensors to search for marine mammals while performing area clearance procedures during night-time pre-mission activities.

(6) If any marine mammals are sighted during pre-mission surveys or during the mission, activities will be immediately halted until the area is clear of all marine mammals for 60 min or the mission location relocated and resurveyed.

Monitoring and Reporting

The Incidental Take Statement in NMFS' Biological Opinion on this action required certain monitoring measures to protect marine life. NMFS also imposed these same requirements, as well as additional ones, under Eglin AFB's 2006 IHA as they related to marine mammals. They included:

(1) Development and implementation of a marine species observer-training program in coordination with NMFS. This program will provide expertise to Eglin's testing and training community in the identification of protected marine species during surface and aerial mission activities in the GOM. Additionally, the A-S gunnery mission aircrews will participate in the species observation training. As a result, designated crew members will be selected to receive training as protected species observers. Observers will receive training in protected species survey and identification techniques through a NMFS-approved training program.

(2) Aircrews will initiate the post-mission clearance procedures beginning at the operational altitude of approximately 15,000 to 20,000 ft (4,572 to 6,096 m) elevation, and initiating a spiraling descent down to an observation altitude of approximately 1,500 ft (457 m) elevation. Rates of descent will occur over a 3 to 5 min time frame.

(3) Eglin will track their use of the EGTTTR for test firing missions and protected species observations, through the use of mission reporting forms.

(4) A-S gunnery missions will coordinate with next-day flight activities to provide supplemental post-mission observations for marine mammals in the operations area of the previous day.

(5) A summary annual report of marine mammal observations and A-S activities will be submitted to the NMFS Southeast Regional Office (SERO) and the Office of Protected Resources either at the time of a request for renewal of an IHA or 90 days after expiration of the current IHA if a new IHA is not requested.

(6) If any dead or injured marine mammals are observed or detected prior to testing, or injured or killed during live fire, a report must be made to the NMFS by the following business day.

(7) Any unauthorized takes of marine mammals (i.e., injury or mortality) must be immediately reported to the NMFS representative and to the respective stranding network representative.

Modifications to the 2006 Mitigation and Monitoring Requirements

As of October 27, 2006, two A-S gunnery missions have been attempted (one of the missions was ultimately aborted due to sea state). As a result of flying live missions over the ocean, aircrews have requested a modification to three components of the 2006 IHA requirements. These components are: (1) protected species surveys, (2) ramp-up procedures, and (3) sea state restrictions.

Protected Species Surveys-Altitude and Equipment

Currently, pre-mission surveys for marine mammals and other protected species must be commenced at a maximum altitude of 1,500 ft (457 m) (with 1,000 ft (305 m) recommended) during the day and at 2,000 ft (610 m) (1,500 ft (457 m) recommended) at night. Visual scans, as well as all applicable instruments, are to be used to survey for protected species at the water surface. Aircrews have reported that these altitudes are not safe, and that the onboard instrumentation used for surveys actually performs better at a higher altitude.

The propeller-driven AC-130 aircraft, which is used for all A-S gunnery missions, is among the largest and heaviest in the USAF, weighing up to approximately 150,000 lbs (68,040 kg) depending on equipment configuration. If an emergency situation, such as a malfunction of one or more engines, occurred during the protected species surveys, the aircraft would likely lose altitude initially. The AC-130 does not perform well with less than a full complement of engines. At 1,000 to 2,000 ft (305 to 610 m), the pilots would have little time to recover before striking the water surface, which would result in potential human fatalities and certain loss of the aircraft. The AC-130 is typically flown at a minimum altitude of 4,500 ft (1372 m). Eglin AFB and NMFS note that the 2004 NDAA amendments to the MMPA explicitly require consideration of personnel safety during military readiness activities.

AC-130 gunships are equipped with low-light TV cameras and ANIAAQ-26 Infrared Detection Sets (IDS). The TV cameras operate in a range of electromagnetic radiation of 532 to 980 nanometers (visible and near-visible light), and the IDS system operates in the IR portion of 7.5 to 11.7

micrometers. IR systems are capable of detecting differences in temperature from thermal energy (heat) radiated from living bodies, or from reflected and scattered thermal energy. In contrast to typical night-vision devices, visible light is not necessary for object detection. IR systems are equally effective during day or night use.

The ANIAAQ-26 IDS system produces a composite video signal which is displayed on an onboard television monitor. The IDS provides imagery and accurate line-of-sight information for an operator to detect, acquire, identify, and track targets. Additional capabilities include providing imagery suitable for reconnaissance and low-level navigation. The IDS is capable of detecting very small thermal differences (the exact thermal sensitivity is classified). Three fields-of-view (FOV) are available for the IDS. All are typically used during a mission to survey the area and acquire targets. These are:

- Wide FOV (1.80 magnification) aides in low altitude flight, navigation, and area search, and also provides sufficient resolution to recognize typical terrain features such as roads, rivers, and bridges.
- Medium FOV (10.8 magnification) provides for immediate target area orientation and target detection.
- Narrow FOV (42.9 magnification) provides small target identification, target recognition, and precise line-of-sight angular adjustments. A 2X FOV (85.80 magnification) provides electronic magnification of the Narrow FOV.

The IDS provides pointing information regarding its optical line-of-sight, and features a continuous 360-degree azimuth Field of Regard (FOR) and +60 degree up-look to -105 degree down-look elevation FOR. The line-of-sight is inertial-stabilized with regard to airplane angular motions and is directed to pointing angles via programmed commands, operator commands, or position commands from the avionics systems.

IR and low-light TV systems are used during both daytime and nighttime missions (ambient light is sufficient for the TV system at night). The IDS is the primary detection system and is used during all AC-130 gunship missions. Low-light TV and visual surveys are used to supplement the IDS system as appropriate. The magnification of the TV system is comparable to that of the IDS. Although the IDS is capable of detecting infrared emissions at altitudes in excess of 12,500 ft (3810 m), an altitude range of 6,000 to 9,000 ft (1829

to 2743 m) affords the optimal slant range for overall sensor performance and target orientation.

The sensor suite is considered superior to the human eye for detecting targets on the water surface, even at altitudes as low as 1,000 ft (305 m). This is particularly true for night observations. IR systems have been used to detect whales and dolphins (Baldacci et al., 2005). Although the central portion of cetacean bodies are insulated with blubber, peripheral areas such as the flukes and fins are relatively poorly insulated. These areas may be detected thermally. Also, the movement of a cetacean's body at the surface causes heat to be radiated at different angles, resulting in an apparent temperature difference that can be detected by IR sensors. Additional areas of thermal discrimination include the blowhole, the blow, and areas of water disturbance where water of different temperatures is mixed. However, high humidity, rain, fog, high waves, and whitecap conditions can decrease the effectiveness of IR detection.

Figure 1 in Eglin's January 29, 2007 renewal request illustrates examples of all FOVs for the IDS system, as an operator would see them on a monitor. All examples represent a 7.8-ft (2.4 m) dolphin at 6,000 ft (1829 m) altitude (above ground level, or AGL) and at a slant range of 8,000 ft (2438 m). All four FOVs would be used during protected species surveys. Based on the above discussion, the AC-130 aircrews recommend a protected species survey altitude of 6,000 ft (1829 m), using all sensors, for both day and night missions. NMFS concurs and has made this modification to the 2008 IHA for Eglin's A-S gunnery exercises.

The gunship sensor suite provides the best daytime and nighttime performance in normal weather and sea conditions at this altitude range. At lower altitudes, the sensors' area of coverage is smaller for any given field of view. In addition, the sensors' effectiveness is diminished due to magnification factors. For example, at an altitude of 1,000 ft (305 m), the 2X and Narrow FOV settings would cause over-magnification, resulting in decreased ability to discriminate targets. In addition to considerations of sensor performance, a 6,000-ft (1829-m) survey altitude would be significantly safer than the current 1,000- to 2,000-ft (305- to 610-m) range.

Therefore, based on Eglin AFB's request, NMFS is requiring Eglin to implement a revised protocol for protected species surveys. The AC-130 gunship is to travel to a potential mission location at an altitude of

approximately 6,000 ft (1829 m). After arriving at the site, the aircrew is to initiate a surface vessel and protected species survey at the 6,000 ft (1829 m) altitude. The aircraft is to circle the target site and continue the survey for at least 15 min. During the survey, aircrews are to use the ANIAAQ-26 IDS to search the water surface for vessels and marine species. The low-light TV system is to be used to supplement the IDS system. For missions conducted during daylight hours, the aircrew are to visually scan the water surface as well. The live-fire phase of the mission will not begin until the site is determined to be clear of vessels and protected species during the 15-min survey. If a marine mammal, sea turtle or Sargassum bed is identified during the pre-mission survey or during the mission, or if any object besides the target is detected but cannot conclusively be identified, the mission shall be paused or relocated as appropriate. Aircrews shall conduct a post-mission survey for 5 min at an altitude of 6,000 ft (1829 m) using the IDS and low-light television systems and, for daytime missions, visual scans. Eglin AFB considers that the protocol described here would provide effective mitigation to the risks posed to protected species during A-S gunnery missions. In summary, NMFS and Eglin AFB believe that sensor-based observation effectiveness at 6,000 ft (1829 m) altitude is superior to visual survey effectiveness at 1,000 ft (305 m) altitude and can replace the previous mitigation measure.

Ramp-up Procedures

The 2006 IHA stipulates that ramp-up procedures are to be used during A-S gunnery missions. This process involves beginning with the smallest gunnery round, which has the least impact, and proceeding to subsequently larger size rounds. The rationale is that this process may allow animals to perceive steadily increasing noise levels and to react, if necessary, before the noise reaches a threshold of significance. The AC-130 gunship's weapons are used in two activity phases. First, the guns are checked for functionality and calibrated. This step requires an abbreviated period of live fire. After the guns are determined to be ready for use, the mission proceeds under various test and training scenarios. This second phase involves a more extended period of live fire and can incorporate use of one or any combination of the munitions available (25-, 40-, and 105-millimeter rounds). Eglin AFB believes the 2006 IHA was somewhat ambiguous regarding whether the ramp-up procedure was required only for the first

(calibrating) phase or throughout the entire mission. As a result, Eglin AFB and NMFS concur that the ramp-up procedure should be required for the initial gun calibration, and that after this phase the guns may be fired in any order. Eglin and NMFS believe this process will allow marine species the opportunity to respond to increasing noise levels. If an animal leaves the area during ramp-up, it is unlikely to return while the live-fire mission is proceeding. This protocol allows a more realistic training experience. In combat situations, gunship crews would not likely fire the complete ammunition load of a given caliber gun before proceeding to another gun. Rather, a combination of guns would likely be used as required by an evolving situation. An additional benefit of this protocol is that mechanical or ammunition problems on an individual gun can be resolved while live fire continues with functioning weapons. This also diminishes the possibility of a lengthy pause in live fire which, if greater than 10 min, would necessitate Eglin's re-initiation of protected species surveys.

Sea State Restrictions

The 2006 IHA states that A-S gunnery missions are to be conducted only in sea states of 3.5 or less on the Beaufort scale. A sea state of 3 or less, with a maximum wind speed of 10 knots (11.5 mph, 18.5 km/hr) which is considered a gentle breeze, is fairly common off the Gulf coast of Florida; however, a large portion of time can be categorized as a sea state of 4 (1–16 knots (13–18 mph, 21–29 km/hr), which is considered a moderate breeze). Therefore, the availability of the EGTTTR for air-to-surface gunship use is limited during anything over sea state 3, especially during the winter. Eglin AFB requested gunship missions be allowed in sea states up to 4 on the Beaufort scale. NMFS concurs with this request. Under these conditions, whitecaps are fairly frequent on the sea surface, but sea spray does not occur. Sea spray, whitecaps, and large waves can decrease the effectiveness of LR detection. However, A-S gunnery missions are not conducted if such conditions make observation of the gunnery target (the flare) problematic. Eglin and NMFS expect that marine species can be observed in weather conditions that allow observation of the gunnery target flare. As wave height is difficult to determine from the air, particularly at night, Eglin believes that wind speed, as provided by accepted forecasting outlets such as the National Weather Service, be the determining factor for weather

restrictions. NMFS concurs and has made this modification to the 2008 IHA for Eglin's A-S gunnery exercises.

In summary, NMFS concurs with the determinations made by Eglin AFB and has made the following modifications to the mitigation and monitoring measures in the Eglin AFB's A-S Gunnery IHA: (1) amended the requirement for visual surveys to be conducted at a 6,000 ft (1,829 m) altitude as the sensor-based observation effectiveness is superior to visual survey effectiveness; (2) if there is an initial gun calibration period, the ramp-up procedure is required for the initial gun calibration, and that after this phase the guns may be fired in any order; and (3) gunship missions may proceed when sea states are up to 4 on the Beaufort scale.

Determinations

For reasons described in this **Federal Register** document, NMFS has determined that Eglin AFB's A-S gunnery activity will not result in the mortality or injury of marine mammals (see Table 11) and, would result in, at worst, a temporary elevation in hearing sensitivity (known as TTS). As indicated in Table 11, Eglin AFB and NMFS estimate that up to 271 marine mammals may incur Level B (TTS) harassment annually. Also, because these gunnery exercises result in multiple detonations, they have the potential to also result in a temporary modification in behavior by marine mammals at levels below TTS. Based on NMFS' estimates, up to 25 marine mammals may experience a behavioral response to these exercises during the time-frame of an IHA (see Table 11). Finally, while one would generally expect the threshold for behavioral modification to be lower than that causing TTS, due to a lack of empirical information and data, a dual criteria for Level B behavioral harassment cannot be developed. However, to ensure that takings are covered by this IHA, NMFS estimates that approximately 1,000 marine mammals of 16 stocks may incur Level B (harassment) takes during the 1-year period of this IHA. NMFS believes that this number will be significantly lower due to the expected high effectiveness of the mitigation measures required under the IHA.

NMFS believes therefore, that these A-S gunnery activities will have a negligible impact on the affected species or stocks of marine mammals. NMFS believes that the modifications to the current mitigation requirements will not result in an increase in Level B harassment levels estimated in 2006. The previously discussed modifications (protected species survey altitude,

ramp-up procedures, and sea state conditions) to the mitigation measures in Eglin's 2006 IHA for the A-S gunnery exercises in the EGTTTR, is unlikely to change NMFS' 2006 determination. Finally, because Eglin AFB's activities will not take place where subsistence uses of marine mammals occur, it would not have an unmitigable adverse impact on the availability of marine mammals for subsistence uses identified in MMPA section 101(a)(5)(D)(i), 16 USC 1371(a)(5)(D)(i).

Endangered Species Act (ESA)

Consultation under section 7 of the ESA on Eglin AFB's A-S Gunnery Missions in the EGTTTR was completed on December 18, 1998. Consultation was reinitiated by Eglin AFB with NMFS on February 13, 2003, and concluded on October 20, 2004. A Biological Opinion issued by NMFS on October 20, 2004, concluded that the A-S gunnery exercises in the EGTTTR are unlikely to jeopardize the continued existence of species listed under the ESA that are within the jurisdiction of NMFS or destroy or adversely modify critical habitat. NMFS has determined that this action, including the modifications to the mitigation and monitoring measures, does not have effects beyond that which was analyzed in that previous consultation, it is within the scope of that action and reinitiation of consultation is not necessary.

National Environmental Policy Act (NEPA)

The USAF made a Finding of No Significant Impact (FONSI) determination on August 18, 2003, based on information contained within its November, 2002 Final PEA, that implementation of the subject action is not a major Federal action having significant effects on the environment within the meaning of NEPA. The USAF determined, therefore, that an environmental impact statement (EIS) would not be prepared. NMFS noted that Eglin AFB had prepared a Final PEA for the EGTTTR activity and made this Final PEA available upon request on January 23, 2006 (71 FR 3474). In accordance with NOAA Administrative Order 216-6 (Environmental Review Procedures for Implementing the National Environmental Policy Act, May 20, 1999), NMFS reviewed the information contained in Eglin AFB's Final PEA and, on May 1, 2006, determined that Eglin AFB's Final PEA accurately and completely described the proposed action, the alternatives to the proposed action, and the potential impacts on marine mammals, endangered species, and other marine

life that could be impacted by the preferred alternative and the other alternatives. Accordingly, NMFS adopted Eglin AFB's Final PEA under 40 CFR 1506.3 and made its own FONSI on May 16, 2006. The NMFS FONSI also took into consideration updated data and information contained in NMFS' Federal Register document noting issuance of an IHA to Eglin AFB for this activity (71 FR 27695, May 12, 2006), and previous notices (71 FR 3474 (January 23, 2006); 70 FR 48675 (August 19, 2005)). Accordingly, on May 1, 2006, NMFS adopted the USAF EA under 40 CFR 1506.3 and made its own FONSI. This FONSI was signed on May 16, 2006.

As the issuance of a new IHA to Eglin AFB amends three of the mitigation measures for reasons of practicality and safety, NMFS reviewed Eglin AFB's 2002 Final PEA and determined that a new EA was warranted to address: (1) the proposed modifications to the mitigation and monitoring measures; (2) the use of 23 psi as a change in the criterion for estimating potential impacts on marine mammals from explosives; and (3) a cumulative effects analysis of potential environmental impacts from all GOM activities (including Eglin mission activities), which was not addressed in Eglin AFB's 2002 Final PEA. Therefore, NMFS has prepared a new EA and issued a FONSI for this action. Based on these findings, NMFS has determined that it is not necessary to complete an EIS for the issuance of an IHA to Eglin AFB for this activity.

Authorization

NMFS has issued an IHA to Eglin AFB for conducting A-S gunnery exercises within the EGTTR in the northern GOM for a 1-year period, provided the mitigation, monitoring, and reporting requirements are undertaken.

Dated: December 11, 2008.

James H. Lecky,

*Director, Office of Protected Resources,
National Marine Fisheries Service.*

[FR Doc. E8-30359 Filed 12-19-08; 8:45 am]

BILLING CODE 3510-22-S

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meetings

AGENCY HOLDING THE MEETING:
Commodity Futures Trading Commission.

TIME AND DATE: 11 a.m., Friday, January 16, 2009.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Commission Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED:

Surveillance Matters.

CONTACT PERSON FOR MORE INFORMATION:
Sauntia S. Warfield, 202-418-5084.

Sauntia S. Warfield,

Staff Assistant.

[FR Doc. E8-30519 Filed 12-18-08; 4:15 pm]

BILLING CODE 6351-01-P

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meetings

AGENCY HOLDING THE MEETING:
Commodity Futures Trading Commission.

TIME AND DATE: 11 a.m., Friday, January 9, 2009.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Commission Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Surveillance Matters.

CONTACT PERSON FOR MORE INFORMATION:
Sauntia S. Warfield, 202-418-5084.

Sauntia S. Warfield,

Staff Assistant.

[FR Doc. E8-30523 Filed 12-18-08; 4:15 pm]

BILLING CODE 6351-01-P

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meetings

AGENCY HOLDING THE MEETING:
Commodity Futures Trading Commission.

TIME AND DATE: 2:00 p.m., Wednesday, January 21, 2009.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Commission Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED:
Enforcement Matters.

CONTACT PERSON FOR MORE INFORMATION:
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Sauntia S. Warfield,

Staff Assistant.

[FR Doc. E8-30526 Filed 12-18-08; 4:15 pm]

BILLING CODE 6351-01-P

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meetings

AGENCY HOLDING THE MEETING:
Commodity Futures Trading Commission.

TIME AND DATE: 11 a.m., Friday, January 23, 2009.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Commission Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED: Surveillance Matters.

CONTACT PERSON FOR MORE INFORMATION:
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Sauntia S. Warfield,

Staff Assistant.

[FR Doc. E8-30528 Filed 12-18-08; 4:15 pm]

BILLING CODE 6351-01-P

COMMODITY FUTURES TRADING COMMISSION

Sunshine Act Meetings

AGENCY HOLDING THE MEETING:
Commodity Futures Trading Commission.

TIME AND DATE: 11 a.m., Friday, January 30, 2009.

PLACE: 1155 21st St., NW., Washington, DC, 9th Floor Commission Conference Room.

STATUS: Closed.

MATTERS TO BE CONSIDERED:
Surveillance Matters.

CONTACT PERSON FOR MORE INFORMATION:
Sauntia S. Warfield, 202-418-5084.

Sauntia S. Warfield,

Staff Assistant.

[FR Doc. E8-30530 Filed 12-18-08; 4:15 pm]

BILLING CODE 6351-01-P

CONSUMER PRODUCT SAFETY COMMISSION

Accreditation Requirements for Third Party Conformity Assessment Bodies To Test To the Requirements for Lead Content in Children's Metal Jewelry as Established by the Consumer Product Safety Improvement Act of 2008

AGENCY: Consumer Product Safety Commission.

ACTION: Notice of requirements for accreditation of third party conformity assessment bodies to assess conformity with the 600 parts per million ("ppm") and 300 ppm lead content limits in metal and metal alloy parts of children's