

summary of the argument and (3) a table of authorities. The Department will issue the final results of this administrative review, including the results of our analysis of the issues raised in any such written comments or at a hearing, within 120 days of publication of these preliminary results.

Duty Assessment and Cash Deposit Requirements

The Department shall determine, and CBP shall assess, antidumping duties on all appropriate entries. In accordance with 19 CFR 351.212(b)(1), we will calculate assessment rates for the merchandise based on the ratio of the total amount of antidumping duties calculated for the examined sales made during the POR to the total quantity (in kilograms) of the sales used to calculate those duties. This rate will be assessed uniformly on all entries of merchandise of that manufacturer/exporter made during the POR. The Department will issue appropriate appraisement instructions directly to CBP upon completion of the review.

Furthermore, the following deposit requirements will be effective upon completion of the final results of this administrative review for all shipments of flanges from India entered, or withdrawn from warehouse, for consumption on or after the publication date of the final results of this administrative review, as provided by section 751(a)(1) of the Tariff Act: (1) The cash deposit rates for the reviewed companies will be the rates established in the final results of administrative review; (2) for merchandise exported by manufacturers or exporters not covered in this review but covered in the original less-than-fair-value (LTFV) investigation or a previous review, the cash deposit will continue to be the most recent rate published in the final determination or final results for which the manufacturer or exporter received a company-specific rate; (3) if the exporter is not a firm covered in this review, or the original investigation, but the manufacturer is, the cash deposit rate will be that established for the manufacturer of the merchandise in the final results of this review, or the LTFV investigation; and (4) if neither the exporter nor the manufacturer is a firm covered in this review or any previous reviews, the cash deposit rate will be 162.14 percent, the "all others" rate established in the LTFV investigation (59 FR 5994) (February 9, 1994).

This notice also serves as a preliminary reminder to importers of their responsibility under 19 CFR 351.402(f) to file a certificate regarding the reimbursement of antidumping

duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in the Secretary's presumption that reimbursement of antidumping duties occurred and the subsequent assessment of double antidumping duties.

We are issuing and publishing this notice in accordance with sections 751(a)(1) and 777(i)(1) of the Tariff Act.

Dated: October 31, 2003.

James J. Jochum,
Assistant Secretary for Import Administration.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 080803C]

Small Takes of Marine Mammals Incidental to Specified Activities; Oceanographic Surveys in the Mid-Atlantic Ocean

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 small numbers of marine mammals, by harassment, incidental to conducting oceanographic surveys in the Mid-Atlantic Ocean has been issued to Lamont-Doherty Earth Observatory (LDEO).

DATES: Effective from October 23, 2003 through October 22, 2004.

ADDRESSES: The application, a list of references used in this document, and/or the IHA are available by writing to P. Michael Payne, Chief, Marine Mammal Conservation Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910-3225, or by telephoning the contact listed here.

FOR FURTHER INFORMATION CONTACT: Sarah C. Hagedorn, Office of Protected Resources, NMFS, (301) 713-2322, ext 117.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce 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 either 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 species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses and that the permissible methods of taking and requirements pertaining to the 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."

Subsection 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 small numbers of marine mammals by harassment. Under Section 3(18)(A), the MMPA defines "harassment" as:

any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

The term "Level A harassment" means harassment described in subparagraph (A)(i). The term "Level B harassment" means harassment described in subparagraph (A)(ii).

Subsection 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny issuance of the authorization.

Summary of Request

On July 21, 2003, NMFS received an application from LDEO for the taking,

by harassment, of several species of marine mammals incidental to conducting a seismic survey program. As presently scheduled, two seismic surveys will be conducted in the Mid-Atlantic Ocean. The Trans-Atlantic Geotransect (TAG) cruise will be centered at 26°N and 45°W in the Mid-Atlantic Ocean during late October 2003, for a total of six days of seismic surveying. The Atlantic Deep Western Boundary Current (ADWBC) cruise will occur between 39° and 42°N and between 45° and 52.5°W, during July and August of 2004 for a total of approximately 20 days of surveying. These operations will take place in international waters.

The seismic survey work conducted during the TAG cruise is part of a multi-disciplinary experiment, taking place in the TAG Active Mound area over a period of nine months. The TAG active mound (26°N on the Mid-Atlantic Ridge), which is one of the largest hydrothermal deposits found to date on the seafloor, is a large, focused mineral deposit on a slow-spreading ridge. The purpose of the TAG cruise is to delineate the nature, position, and size of any heat sources (low-velocity zones) that might drive convection at the TAG active mound, and more generally, to provide an understanding of crustal architecture in the TAG region. More specifically, the TAG experiment will address key issues at the TAG site: (1) the nature of the heat source driving circulation, (2) the relationship between faulting on the eastern flank and fluid flow at the mound, (3) the possible existence of a low-velocity zone beneath the rise axis, and (4) the hydraulic connectivity of the shallow TAG mound.

The ADWBC cruise will determine the configuration, age, and paleoceanographic significance of the sedimentary sequences on J Anomaly Ridge and Southeast Newfoundland Ridge, which may show evidence for strong boundary currents dating to the early Paleocene. Proposed tracklines for the seismic survey were chosen with four primary objectives in mind: (1) to map the main reflection sequences across the full extent of the ridges and onto the edges of adjacent abyssal plains, (2) to obtain continuity in tracing sequences by profiling around major interruptions (seamounts) and optimizing track crossings, (3) to provide abundant crossing lines in areas where existing seismic and bathymetric data suggest that there are outcrops of pre-Neogene strata, and (4) to take advantage of good-quality seismic data, where they exist (e.g., Conrad 2510

MCS), in order to make loop correlations between tracks.

Description of the Activity

The TAG seismic survey will involve a single vessel which will conduct the seismic work, the *R/V Maurice Ewing*, operated by LDEO under a cooperative agreement with the U.S. National Science Foundation (NSF), owner of the vessel. The *Maurice Ewing* will deploy an array of 20 airguns as an energy source, and will deploy and retrieve Ocean Bottom Hydrophones (OBHs). A hydrophone streamer will not be towed during the TAG cruise. The energy to the airgun array is compressed air supplied by compressors on board the source vessel. As the airgun array is towed along the survey lines, the OBHs and Ocean Bottom Seismometers (OBSs) will receive the reflected signals and transfer the data to the onboard processing system. All planned geophysical data acquisition activities will be conducted by LDEO scientists with onboard assistance by the scientists who proposed the study. The TAG program will consist of 185 km (100 n.mi.) of survey lines. There will be a total of three seismic lines, two along- and one across-axis of the TAG. Water depths in the area will vary from 1500 to 4500 m (4921–14,764 ft).

The ADWBC cruise will involve the oceanographic research vessel *R/V Knorr*, a U.S. Navy-owned ship operated by the Woods Hole Oceanographic Institution (WHOI), and will use a portable LDEO seismic system to conduct the seismic survey. The vessel will deploy 2 General Injector (GI)-guns as an energy source plus a towed streamer containing hydrophones to receive the returning acoustic signals. The hydrophone array will consist of a 600-m (1969 ft) solid state streamer with a 200-m (656 ft) tow leader. The energy to the airgun array is compressed air supplied by compressors on board the source vessel. As the 2 GI-guns are towed along the survey line, the hydrophone array will receive the returning signals and transfer the data to the onboard processing system. All planned geophysical activities will be conducted by the scientists who have proposed the study, while LDEO will provide the portable high-resolution seismic system that will support the seismic surveys for the proposed study. The ADWBC program will consist of 4334 km (2340 n.mi.) of seismic profiles that will be shot over a period of 20 days. The most detailed grids of seismic lines are proposed for the southern end of J Anomaly Ridge and for moats around seamounts on the crest of the Southeast Newfoundland Ridge - both

are areas where there appear to be extensive pre-Neogene outcrops. Water depths in the area will vary from 4000 – 5000 m (13,124–16,405 ft).

The procedures to be used for the two seismic studies will be similar to those used during previous seismic surveys by LDEO, e.g., in the equatorial Pacific Ocean (Carbotte *et al.*, 1998, 2000). The proposed seismic surveys will use conventional seismic methodology with a towed airgun array as the energy source, and either a towed hydrophone streamer or OBH and OBS receivers placed on the bottom to receive the reflected signals. For the TAG survey, eighteen OBHs will be deployed (and recovered) by the *Maurice Ewing* - eight along each of the long axis lines and two on the across axis line. After the seismic lines are shot, the data will be downloaded and the OBSs will be retrieved during an, as of yet, unscheduled cruise in the summer of 2004 (during which no seismic sound sources will be used). Along three selected seismic lines, 13 OBS receivers will be placed in the proposed study area by the *R/V Alvin* from 7–24 June 2003, before the arrival of the *Maurice Ewing*. In addition, a multi-beam bathymetric sonar will be operated from the source vessel continuously throughout both cruises, and a lower-energy sub-bottom profiler will also be operated during most of both surveys. During the ADWBC study, coring of numerous sedimentary outcrops known to exist on the ridges will also take place. During both cruises, there will be additional operations associated with equipment testing, startup, line changes, and repeat coverage of any areas where initial data quality is sub-standard.

The *R/V Maurice Ewing* will be used as the source vessel during the TAG cruise, and the *R/V Knorr* will be used as the source vessel during the ADWBC cruise. Both vessels will tow airgun arrays along predetermined lines, and will also serve as platforms from which vessel-based marine mammal observers will watch for marine mammals before and during airgun operations.

During TAG-study airgun operations, the vessel will travel at 7.4–9.3 km/hr (4–5 knots), and seismic pulses will be emitted at intervals of 60–90 seconds (OBS lines during the TAG cruise). The 60–90 sec. spacing along OBS lines is to minimize reverberation from previous shot noise during OBS data acquisition, and the exact spacing will depend on water depth. The airgun array to be used will consist of 20 2000-psi Bolt airguns, towed at a depth of 7.5 m (24.5 ft). The 20-gun array will include airguns ranging in chamber volume from 80 to 850 in³, with a total volume of 8,575 in³.

These airguns will be spaced in an approximate rectangle with dimensions of 35 m (115 ft) (across track) by 9 m (30 ft) (along track).

The ADWBC seismic survey will be high-resolution, consisting of two 105 in³ GI airguns with a total volume of approximately 210 in³, spaced 7.8 m (26 ft) apart, and towed 37 m (121 ft) behind the vessel at a depth of 2–3 m (7–10 ft). Towing airguns at this shallow depth is accomplished by suspending the guns from floats, and the resulting short-period free surface “ghosting” keeps the spectral content broad with usable signals up to 300–350 Hz. These airguns produce an unusually clean impulse with sufficient energy to penetrate many hundreds of meters of sediment. Airgun firing, timing, and synchronizing is handled by a LDEO-built controller, which is integrated with a SUN workstation-based DGPS navigation, data logging, and fire control system. The air is produced by a standalone Price Co. 2000 psi compressor, and the seismic signals are detected by a solid state ITI hydrophone “Stealtharray”, with 48 12.5-m (41 ft) long channels, and a total length of 600 m (1969 ft).

The dominant frequency components for both airgun arrays is 0–188 Hz. The 2-airgun array will have a peak sound source output level of 237 dB re 1 μ Pa or 243 dB peak-to-peak (P-P). The 20-airgun array will have a peak sound source output level of 255 dB re 1 μ Pa or 262 dB P-P. Because the actual source is a distributed sound source (2 or 20 airguns) rather than a single point source, the highest sound levels measurable at any location in the water will be less than the nominal source level. Also, because of the downward directional nature of the sound from these airgun arrays, the effective source level for sound propagating in near-horizontal directions will be substantially lower.

Along with the airgun operations, several additional acoustical data acquisition systems will be operated during most or all of the cruises. The ocean floor will be mapped with an Atlas Hydrosweep DS-2 multi-beam 15.5-kHz bathymetric sonar, and/or a 3.5-kHz sub-bottom profiler. These mid-frequency sound sources are commonly operated from research vessels simultaneous with airgun arrays as well as in the absence of airgun activity.

The Atlas Hydrosweep sonar will be used during cruises by the *R/V Maurice Ewing*, is mounted in the hull of the vessel, and operates in three modes depending on the water depth. The first is a shallow-water mode when water depth is <400 m (1312.3 ft); source output is 210 dB re 1 μ Pa-m rms and a

single 1-millisecond (ms) pulse or “ping” per second is transmitted, with a beamwidth of 2.67 degrees fore-aft and 90 degrees in athwartship. The beamwidth is measured to the 3 dB point, as is usually quoted for sonars. The other two modes are deep-water modes: The Omni mode is identical to the shallow-water mode except that the source output is 220 dB rms (normally used only during start up). The Rotational Directional Transmission (RDT) mode is normally used during deep-water operation and has a 237 dB rms source output. In the RDT mode, each “ping” consists of five successive transmissions, each ensonifying a beam that extends 2.67 degrees fore-aft and approximately 30 degrees in the cross-track direction. The five successive transmissions (segments) sweep from port to starboard with minor overlap, spanning an overall cross-track angular extent of about 140 degrees, with tiny (<1 millisecond) gaps between the pulses for successive 30-degree segments. The total duration of the “ping”, including all 5 successive segments, varies with water depth but is 1 ms in water depths <500 m (1640.4 ft) and 10 ms in the deepest water. For each segment, ping duration is 1/5th of these values or 2/5th for a receiver in the overlap area ensonified by two beam segments. The “ping” interval during RDT operations depends on water depth and varies from once per second in <500 m (1640.5 ft) water depth to once per 15 seconds in the deepest water.

For the ADWBC cruise, the SeaBeam 2100/12 multibeam 12 kHz bathymetric sonar system will be used, with a source output of 237 dB re 1 μ Pa-m. Operation of this system is similar to that of the Atlas Hydrosweep (described above). The SeaBeam 2100/12 system has a swath width of about 3 times the water depth, so it will provide data over swaths 10–15 km (5–8 n.mi.) wide during most of the survey.

The sub-bottom profiler is normally operated to provide information about the sedimentary features and bottom topography that is simultaneously being mapped by the Hydrosweep. The energy from the sub-bottom profiler is directed downward by a 3.5-kHz transducer mounted in the hull of the vessel. The output varies with water depth from 50 watts in shallow water to 800 watts in deep water. Pulse interval is 1 sec. but a common mode of operation is to broadcast five pulses at 1-sec. intervals followed by a 5-sec. pause. The beamwidth is approximately 30° and is directed downward. Maximum source output is 204 dB re 1 μ Pa, 800 watts, while nominal source output is 200 dB re 1 μ Pa, 500 watts. Pulse duration will

be 4, 2, or 1 ms, and the bandwidth of pulses will be 1.0 kHz, 0.5 kHz, or 0.25 kHz, respectively.

For the ADWBC cruise, the multibeam bathymetry and sub-bottom profiling will be used to define windows where erosion or non-deposition has exposed deeper sequences suitable for piston coring. Coring transects across these windows will provide biostratigraphic age determinations that can be used to constrain the age of reflections throughout the study area. There will be five days of piston coring following completion of the ADWBC seismic survey.

Additional information on the airgun arrays, bathymetric sonars, and sub-bottom profiler specifications is contained in the application, which is available upon request (*see ADDRESSES*).

Comments and Responses

A notice of receipt of LDEO's application for seismic work in the Mid-Atlantic Ocean and proposed IHA was published in the **Federal Register** on September 17, 2003 (68 FR 54421). That notice described in detail the proposed activity and the marine mammal species that may be affected by it. That information is not repeated here. During the 30-day public comment period, comments were received from the Marine Mammal Commission (Commission).

Comment 1: The Commission believes that NMFS' preliminary determinations are reasonable, provided NMFS is satisfied that the proposed mitigation and monitoring activities are adequate to detect marine mammals in the vicinity of the proposed operations and to ensure that marine mammals are not being taken in unanticipated ways or numbers. In this regard, NMFS' **Federal Register** notice and the application state that “[v]essel-based observers will monitor marine mammals near the seismic source vessel during all daylight airgun operations and during any nighttime startups of the airguns...” The probability of detecting marine mammals about to enter or already inside the presumed safety limits is probably close to zero at night. Observers will generally not be on duty, and bridge personnel will have limited time to search for marine mammals. The current **Federal Register** notice states that “[a]n image-intensifier night-vision device (NVD) will be available for use at night,” but previous **Federal Register** notices have stated that “past experience has shown that NVDs are of limited value for this purpose.” There is no discussion of why nighttime operations are considered necessary, why experienced marine mammal

observers will not be on duty during nighttime hours, or how effective the observation efforts are expected to be. The efficacy of visual monitoring is not clear and may be inadequate during some of the times that airguns would be in use. The Commission notes that NMFS has previously estimated in a **Federal Register** notice dated March 19, 2001, that visual observation efforts were expected to detect about 5 percent of animals inside safety limits (66 FR 15380). Although the efficacy of visual observations will be determined by many factors (e.g., species in the area, daylight, sea surface conditions, observer position), it is feasible that many, if not most, marine mammals go undetected based on visual observations alone. If information is available regarding the efficacy of visual monitoring from the vessel to be used, then that information should be provided to justify NMFS' confidence that the proposed monitoring program will be adequate. If no information is available to assess efficacy, then NMFS should seek alternative means of ensuring that adequate monitoring methods are used, or conduct research to evaluate their adequacy. In addition, the Commission notes that it is unclear whether vessel-based passive acoustic monitoring will be conducted as an adjunct to visual monitoring during the daytime and particularly at night to detect, locate, and identify marine mammals and, if not, why not.

Response: Nighttime operations are necessary due to cost considerations. The daily cost to the federal government to operate vessels such as the *Ewing* and the *Knorr* is approximately \$33,000 to \$35,000/day (Ljunngren, pers. comm. May 28, 2003), or approximately \$910,000 for a total of 26 days of research during both Mid-Atlantic cruises. If the vessels were prohibited from operating during nighttime, it is possible that each trip would require an additional three to five days, or up to \$105,000 to \$175,000 more, depending on average daylight at the time of work.

Taking into consideration the additional costs of prohibiting nighttime operations and the likely impact of the activity (including mitigation and monitoring), NMFS has determined that the mitigation required by the IHA ensures that the activity will have the least practicable impact on the affected species or stocks. In summary, marine mammals will have sufficient notice of a vessel approaching with operating seismic airguns (at least one hour in advance), thereby giving them an opportunity to avoid the approaching array; if ramp-up is required after an extended power-down, two marine

mammal observers will be required to monitor the safety radii using night vision devices for 30 minutes before ramp-up begins and verify that no marine mammals are in or approaching the safety radii; ramp-up may not begin unless the entire safety radii are visible; and ramp-up may occur at night only if one airgun with a sound pressure level of at least 180 dB has been maintained during interruption of seismic activity. Therefore, it is likely that the 20-gun array will not be ramped-up from a shut-down at night. See Mitigation and Monitoring for more details.

It is also noted that at times, pinnipeds and even some small cetaceans will approach a vessel during transmissions (the vessel itself moving forward at about 3–5 knots) from the side of the vessel or the stern, meaning that the animal is voluntarily approaching a noise source that is increasing in strength as the animal gets closer. Experience indicates that pinnipeds will come from great distances to scrutinize seismic-reflection operations. Seals have been observed swimming within airgun bubbles only 10 m (33 ft) away from active arrays. Also, Canadian scientists, who were using a high-frequency seismic system that produced sound frequencies closer to pinniped hearing than those used by the *Ewing*, describe how seals frequently approached close to the seismic source, presumably out of curiosity. Therefore, NMFS has concluded that this mitigation requirement is reasonable because the bridge-watch will be concentrating on marine mammals approaching the vessel from the bow. Also, the night-vision ability of the trained bridge-watch staff will be better than observers elsewhere on the vessel where normal ship-board lighting is more likely. Finally, an observer is still required to be on standby, meaning he or she will be in the vicinity of the bridge and is not precluded from conducting observations during night-time.

The methodology for visual observations was changed since the 5 percent estimate (noted by the Commission above), resulting in a revised estimate of 9 percent efficacy (67 FR 46712, July 16, 2002). That figure includes both daytime and nighttime periods of observation. The rate increases to 18 percent based only on daytime monitoring. However, NMFS shipboard marine mammal assessment surveys estimate a higher rate of efficacy. It should be understood that these efficacy ratings were based on most difficult marine mammals to sight, such as harbor porpoise and Cuvier's

beaked whales, and not those more easily sighted.

Passive means of monitoring was found to be 25 percent effective. However, shipboard passive acoustics do not allow scientists to determine a marine mammal's distance from the vessel through triangulation; the vessel operator could determine only that a marine mammal is some unknown distance from the vessel. In order to triangulate on the animal, a system similar to that used in the Gulf of Mexico (GOM) Sperm Whale Seismic Study (SWSS) in May, 2003 would be needed. The passive acoustical monitoring equipment that was used onboard the *Ewing* during the GOM SWSS is not the property of LDEO or the *Ewing*, and therefore is not available for the Mid-Atlantic cruises. LDEO is presently evaluating the scientific results of the passive sonar from the SWSS trip to determine whether it is practical to incorporate it into future seismic research cruises. NMFS expects a report on this analysis shortly.

Finally, NMFS notes that the monitoring methods employed on the *Ewing* are standard methods used onboard vessels for conducting marine mammal abundance surveys and under IHA's. NMFS would welcome the Commission's participation in its annual workshop in Seattle, WA to discuss similar monitoring methodology used in oil exploration and production, including vessel seismic operations, in Arctic waters or in another venue. NMFS is especially interested in exploring with the Commission the potential for alternative, practical, monitoring methodology for use in waters too far from shore-side facilities to make aircraft surveillance practical. Recently, LDEO submitted its required monitoring report for the IHAs issued for the *Ewing's* seismic work in the Gulf of Mexico (68 FR 32460, May 30, 2003) and Hess Deep (68 FR 41314, July 11, 2003). Copies of those documents are available upon request (see ADDRESSES).

Comment 2: Several species of cetaceans for which LDEO is seeking incidental take authority stay submerged on most dives for more than 30 minutes. The Commission questions whether conducting monitoring "for at least 30 minutes prior to the planned start of airgun operations" during the day and at night is sufficient to detect those species.

Response: NMFS believes that a 30-minute pre-ramp-up monitoring period is sufficient considering that the ramp-up period will increase SPLs at a rate no greater than 6 dB per 5-minutes for a ramp-up duration of approximately 25 min for the 20-gun array and a total

monitoring period of approximately 55 minutes. Also, while some whale species may dive for up to 45 minutes, it is unlikely that the ship's bridge watch would miss a large whale surfacing from its previous dive if it is within a mile or two of the vessel.

Comment 3: The **Federal Register** notice for the proposed IHA and the applicant's request notes that there are several species of beaked whales in the proposed survey area, but the notice makes no reference to or requirement for any additional caution with respect to beaked whales or that post-survey monitoring be conducted to search for animals that may have been taken other than by harassment.

Response: While NMFS shares the Commission's concern regarding the possible relationship between low-frequency seismic survey transmissions and the beaked whale strandings in the Gulf of California, NMFS believes that additional factors probably also influence whether beaked whales will be affected in ways other than the expected reaction of vacating the immediate vicinity of the noise, similar to the reactions of other marine mammal species. For example, beaked whales in the Gulf of Mexico have been exposed to seismic noise for several decades, yet mass stranding events do not appear in the stranding record. Finally, post-survey monitoring is not being required under this IHA because it is neither practical given the location (mid-ocean) and vessel commitments, nor warranted given the unlikelihood (based on the 2000 Bahamas stranding event) that beaked whales will show distress at the ocean surface. However, NMFS welcomes recommendations regarding additional practical mitigation measures to protect beaked whales from anthropogenic sounds.

Mitigation

For the TAG seismic survey, LDEO will use a 20-gun array with a total volume of 8575 in³. Individual airguns will range in size from 80 to 850 in³. For the ADWBC cruise, LDEO will use 2 GI-guns with a total volume of 210 in³. The airguns comprising these arrays will be spread out horizontally, so that the energy from the arrays will be directed mostly downward.

The sound pressure fields were modeled by LDEO in relation to distance and direction from the 2 GI-guns and the 20-gun array, as shown in Figures 5 and 6 of the application (LDEO Mid-Atlantic, 2003). The radii around the arrays where the received level would be 180-dB re 1 μ Pa (rms) (NMFS' threshold level for onset of Level A harassment applicable to

cetaceans) were estimated as 54 m (177 ft) and 900 m (2953 ft), respectively, for the 2-GI and 20-gun array. The radii around the 2 GI-guns and the 20-gun array where the received level would be 190 dB re 1 μ Pa (rms), (NMFS' threshold level for onset of Level A harassment applicable to pinnipeds), were estimated as 17 m (56 ft) and 275 m (902 ft), respectively. A calibration study was conducted prior to these surveys to determine the actual radii corresponding to each sound level. These actual radii will be used to define the safety radii to be used for this study. Until then, or if those measurements appear defective, LDEO will use a precautionary 1.5 times the modeled 180- (cetaceans) and 190- (pinnipeds) dB radii as the safety radii.

Vessel-based observers will monitor marine mammals in the vicinity of the arrays. LDEO will power-down the airguns if marine mammals are observed approaching or within the safety radii. LDEO will employ a ramp-up procedure when commencing operations using the 20-gun array. Ramp-up will begin with the smallest gun in the array (80 in³), and guns will be added in a sequence such that the source level of the array will increase at a rate no greater than 6 dB per 5-minute period over a total duration of about 25 minutes. Ramp-up will not occur for the 2-GI gun array because the total air discharge volume is small (210 in³). Please refer to LDEO's application for more detailed information. The directional nature of the 20-airgun array to be used in this project is an important mitigating factor, resulting in lower sound levels at any given horizontal distance than would be expected at that distance if the source were omnidirectional with the stated nominal source level. Because the actual seismic source is a distributed sound source (2 or 20 guns) rather than a single point source, the highest sound levels measurable at any location in the water will be less than the nominal source level.

Marine Mammal Monitoring

At least two vessel-based observers will be stationed aboard LDEO's seismic survey vessel during seismic operations in the Mid-Atlantic Ocean. One or two marine mammal observers aboard the seismic vessel will search for and observe marine mammals whenever seismic operations are in progress during daylight hours, and if feasible, during periods without seismic activity. Vessel-based observers will monitor for marine mammals near and in the safety radii for at least 30 minutes prior to and during all daylight ramp-up and airgun operations, and during any nighttime

startups of the airguns. Airgun operations will be suspended when marine mammals are observed within, or about to enter, the designated safety radii. Observers will not be required to be on duty during ongoing seismic operations at night; bridge personnel will watch for marine mammals during this period and will call for the airguns to be powered down if marine mammals are observed in or about to enter the safety radii. At least one marine mammal observer will be on "standby" at night, in case bridge personnel see a marine mammal. An image-intensifier night-vision device (NVD) will be available for use at night. If the airguns are started up at night, two marine mammal observers will monitor for marine mammals near the source vessel for 30 minutes prior to start up using NVDs. The 30-minute observation period is only required prior to commencing seismic operations following an extended shut down period (see Ramp-up Procedures below). After 30 minutes of observation, the ramp-up procedure will be followed.

The observers will watch for marine mammals from the highest practical vantage point on the vessel, which is either the flying bridge or the bridge. On the *R/V Maurice Ewing*, the observer's eye level will be approximately 11 m (36 ft) above sea level when stationed on the bridge, allowing for good visibility within a 210° arc. If observers are stationed on the flying bridge, the eye level will be 14.4 m (47.2 ft) above sea level. The proposed monitoring plan is summarized later in this document.

Mitigation During Operations

The following mitigation measures, as well as marine mammal monitoring, will be adopted during the proposed Mid-Atlantic seismic surveys, provided that doing so will not compromise operational safety requirements: (1) Speed or course alteration; (2) Power-down procedures; (3) Shut-down procedures; and (4) Ramp-up procedures.

Course Alteration

If a marine mammal is detected outside the appropriate safety radius and, based on its position and the relative bearing, is likely to enter the safety radius, the vessel's speed and/or direct course will be changed in a manner that also minimizes the effect to the planned science objectives. The marine mammal activities and movements relative to the seismic vessel will be closely monitored to ensure that the marine mammal does not approach or enter the safety radius. If the mammal appears likely to enter the safety radius,

further mitigative actions will be taken, *i.e.*, either further course alterations or shutdown of the airguns.

Power-down and Shut-down Procedures

Received sound levels have been modeled for the 2-GI and 20-gun arrays. Based on the modeling, estimates of the 190- and 180-dB re 1 μ Pa (rms) distances (safety radii) for these arrays have been provided previously in this document.

Airgun operations will be powered- or shut-down immediately when cetaceans or pinnipeds are seen within or about to enter the appropriate 180-dB (rms) or 190-dB (rms) radius, respectively. These 180- and 190-dB criteria are consistent with guidelines listed for cetaceans and pinnipeds by NMFS (2000) and other guidance by NMFS. If a marine mammal is detected outside the safety radius but is likely to enter the safety radius, and if the vessel's course and/or speed cannot be changed to avoid having the marine mammal enter the safety radius, the airguns will be powered-down before the mammal is within the safety radius. If a mammal is already within the safety radius when first detected, the airguns will be powered-down immediately. If a marine mammal is seen within the appropriate safety radius of the array while the guns are powered-down, airgun operations will be shut-down. For the power-down procedure for the 20-gun array, one 80 in3 airgun will be operated during the interruption of seismic survey. When the 2 GI-guns are in use, a shut-down rather than a power-down will likely be necessary. Airgun activity (after both power-down and shut-down procedures) will not resume until the marine mammal has cleared the safety radius. The animal has cleared the safety radius if it is visually observed to have left the safety radius, or if it has not been seen within the zone for 15 min (small odontocetes and pinnipeds) or 30 min (mysticetes and large odontocetes, including sperm, pygmy sperm, dwarf sperm, beaked, and bottlenose whales).

Ramp-up Procedure

A "ramp-up" procedure will be followed when the airgun arrays begin operating after a specified duration without airgun operations. Under normal operational conditions (vessel speed 4 knots, or 7.4 km/hr), a ramp-up would be required after a power-down or shut-down period lasting about 8 minutes or longer if the *Ewing* was towing the 20-gun array. At 4 knots, the source vessel would travel 900 m (2953 ft) during an 8-minute period. If the

towing speed is reduced to 3 knots or less, as sometimes required when maneuvering in shallow water, a ramp-up would be required after a "no shooting" period lasting 10 minutes or longer. At towing speeds not exceeding 3 knots, the source vessel would travel no more than 900 m (3117 ft) in 10 minutes. Based on the same calculation, a ramp-up procedure would be required after a 6 minute period if the speed of the source vessel was 5 knots. During the ramp-up procedures, the safety radii for the full gun array will be maintained.

Ramp-up will not occur if the safety radius has not been visible for at least 30 min prior to the start of operations in either daylight or nighttime. If the safety radius has not been visible for that 30 minute period (*e.g.*, during darkness or fog), ramp-up will not commence unless one airgun with a sound pressure level (SPL) of at least 180 dB has been maintained during the interruption of seismic activity. Therefore, it is likely that the 20-gun array will not be ramped up from a shut-down at night or in thick fog, since the safety radii for this array will not be visible during those conditions.

Monitoring and Reporting

LDEO will conduct marine mammal monitoring of its Mid-Atlantic seismic programs in order to verify that the taking of marine mammals, by harassment, incidental to conducting the seismic survey will have a negligible impact on marine mammal stocks and to ensure that these harassment takings are at the lowest level practicable.

Vessel-based Visual Monitoring

The observer(s) will systematically scan the area around the vessel with reticle binoculars (*e.g.*, 7 X 50 Fujinon) and with the naked eye during the daytime. At night, NVDs will be available (ITT F500 Series Generation 3 binocular image intensifier or equivalent). Laser rangefinding binoculars (Leica LRF 1200 laser rangefinder or equivalent) will be available to assist with distance estimation.

At least two observers will be based aboard the vessel, and at least one will be an experienced marine mammal observer. Observers will be appointed by LDEO with NMFS concurrence. Observers will be on duty in shifts of duration no longer than 4 hours. Use of two simultaneous observers will increase the proportion of the marine mammals present near the source vessel that are detected. LDEO bridge personnel will also assist in detecting marine mammals and implementing

mitigation requirements whenever possible (they will be given instruction on how to do so), especially during ongoing operations at night, when designated observers will not be on duty. If ramp-up procedures must be performed at night, two observers will be on duty 30 minutes prior to the start of airgun operations and during the subsequent ramp-up procedures. Ramp-up is not required for the 2 GI gun array, but observers must watch for 30 minutes prior to operation of the 2 GI-guns and the safety radii must be visible.

Reporting

When a mammal sighting is made, the following information about the sighting will be recorded: (1) Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction to seismic vessel (*e.g.*, none, avoidance, approach, paralleling, *etc.*), and behavioral pace; and (2) time, location, heading, speed, activity of the vessel (shooting or not), sea state, visibility, cloud cover, and sun glare. The data listed under (2) will also be recorded at the start and end of each observation watch and during a watch, whenever there is a change in one or more of the variables.

All mammal observations and airgun power- and shut-downs will be recorded in a standardized format. Data will be entered into a custom database using a laptop computer when observers are off-duty. The accuracy of the data entry will be verified by computerized validity data checks as the data are entered and by subsequent manual checking of the database. These procedures will allow initial summaries of data to be prepared during and shortly after the field program, and will facilitate transfer of the data to statistical, graphical or other programs for further processing and archiving.

A report will be submitted to NMFS within 90 days after the end of each cruise in the Mid-Atlantic Ocean. The end of the TAG cruise is predicted to occur on or about November 7, 2003. The end of the ADWBC cruise is predicted to occur during August 2004. The report will describe the operations that were conducted and the marine mammals that were detected. The report will be submitted to NMFS, providing full documentation of methods, results, and interpretation pertaining to all monitoring tasks. The 90-day report will summarize the dates and locations of seismic operations, marine mammal sightings (dates, times, locations, activities, associated seismic survey

activities), and estimates of the amount and nature of potential take of marine mammals by harassment or in other ways. The draft report will be considered the final report unless comments and suggestions are provided by NMFS within 60 days of its receipt of the draft report.

Estimates of Take by Harassment for the Mid-Atlantic Cruises

As described previously (*see* 68 FR 17909, April 14, 2003) and in the LDEO application, animals subjected to sound levels ≥ 160 dB may alter their behavior or distribution, and therefore might be considered to be taken by Level B harassment.

The estimates of takes by harassment are based on the number of marine mammals that may be exposed to seismic sounds ≥ 160 dB re 1 μ Pa (rms) by operations with the 20-airgun array and the 2 GI-guns, during the TAG and ADWBC cruises, respectively. Based on marine mammal density sightings and effort data collected during a survey of offshore waters northeast of the Azores by Lens (1991), LDEO used their estimates of marine mammal density to compute the best (and maximum) estimates of the number of marine mammals that may be exposed to received levels ≥ 160 -dB re 1 μ Pa (rms) (NMFS' current criterion for onset of Level B harassment). The best estimates of densities were then multiplied by the linear extent of the proposed survey effort and by twice the 160-dB radius around the applicable airgun array. The proposed survey effort is 185 km (100 n.mi.) for the TAG cruise, and 4329 km (2340 n.mi.) for the ADWBC cruise. The 160-dB radius for the TAG cruise (20-gun array) is 9000 m (29,529 ft), whereas that for the ADWBC cruise (2 GI-guns) is 510 m (1673 ft). For large cetaceans, LDEO used 0.5x the densities seen during the Lens (1991) survey to calculate the numbers that might be exposed to seismic sounds, but even this reduced number is likely a high estimate, because the proposed survey areas are likely less productive, so feeding aggregations similar to those seen by Lens (1991) are not likely to be seen. In particular, the two areas where the proposed surveys will be conducted are farther offshore and likely in less productive waters than the area surveys northeast of the Azores (Lens 1991). Thus, densities are likely to be much lower in the two survey areas than in the Lens (1991) survey area.

Based on this method, tables 3 and 4 of LDEO's application give the best estimates, as well as maximum estimates, of densities for each species or species group of cetacean in the two

seismic survey areas during the TAG and ADWBC cruises, respectively, that might be exposed to received levels ≥ 160 dB re 1 μ Pa (rms), and thus potentially taken by Level B harassment, during seismic surveys in the proposed study areas of the Mid-Atlantic Ocean. During the TAG cruise, 38 of the marine mammals exposed to sounds ≥ 160 dB re 1 μ Pa (rms) would be endangered species, primarily fin (18) and sperm whales (15). During the ADWBC cruise, 49 of the marine mammals exposed to sounds ≥ 160 dB re 1 μ Pa (rms) would be endangered species, primarily fin (24) and sperm whales (20). During both research cruises, Delphinidae would account for 92 percent of the overall estimate for potential taking by harassment during each of the two seismic surveys (*i.e.*, 709 of 772 (TAG) and 943 of 1028 (ADWBC)). While there is no agreement regarding any alternative to the 160-dB "take" criterion for dolphins exposed to airgun pulses, if only those dolphins exposed to ≥ 170 dB re 1 μ Pa (rms) were considered taken by Level B harassment, then the best estimate for common dolphins (the most abundant dolphin in the area) would be 91 rather than 316 during the TAG cruise, and 144 rather than 419 during the ADWBC cruise. These are based on the predicted 170-dB radius around the 20- and 2-airgun arrays (2600 and 175 m (8530 and 574 ft), respectively), and are considered to be more realistic estimates of the number of each species of delphinid that may be harassed, given their apparently higher tolerance of low frequency sound. Therefore, the total number of animals likely to be harassed is considerably lower than the estimated 772 (TAG cruise) animals or 1028 (ADWBC cruise) animals.

Conclusions

Effects on Cetaceans

Strong avoidance reactions by several species of mysticetes to seismic vessels have been observed at ranges up to 6 to 8 km (3.2 to 4.3 nm) and occasionally as far as 20-30 km (10.8-16.2 nm) from the source vessel. Some bowhead whales in Arctic waters avoided waters within 30 km (16.2 nm) of the seismic operation. However, reactions at such long distances appear to be atypical of other species of mysticetes, and even for bowheads may only apply during migration.

Odontocete reactions to seismic pulses, or at least those of dolphins, are expected to extend to lesser distances than are those of mysticetes. Odontocete low-frequency hearing is less sensitive than that of mysticetes, and dolphins

are often seen from seismic vessels. There are documented instances of dolphins approaching active seismic vessels. However, dolphins as well as some other types of odontocetes sometimes show avoidance and/or other changes in behavior when near operating seismic vessels.

Taking account of the mitigation measures that are planned, effects on cetaceans are generally expected to be limited to avoidance of the area around the seismic operation and short-term changes in behavior, falling within the MMPA definition of "Level B harassment." Reactions by mysticetes are expected to involve small numbers of individual cetaceans because few mysticetes occur in the area where seismic surveys are proposed. For Bryde's whales, LDEO's best estimate is that 1 animal during each of the cruises, which translates to 3 percent of the North Atlantic population for this species in the area of the TAG survey, and 1.5 percent of the North Atlantic population for this species in the area of the ADWBC survey, has the potential to be exposed to sound levels ≥ 160 dB re 1 μ Pa (rms) and potentially affected. LDEO's best estimate is that 18 (TAG) and 24 (ADWBC) fin whales, both of which are < 0.1 percent of the estimated North Atlantic fin whale population (IWC 2003), will be exposed to sound levels ≥ 160 dB re 1 μ Pa (rms) and potentially affected. Similarly, only 15 (TAG) and 20 (ADWBC) sperm whales, or approximately 0.1 and 0.2 percent of the estimated North Atlantic sperm whale population, would receive seismic sounds ≥ 160 dB. Therefore, based on the relatively low numbers of marine mammals that will be exposed at levels ≤ 160 dB and the expected impacts at these levels, NMFS has determined that this action will have a negligible impact on the affected species or stocks.

Larger numbers of odontocetes may be affected by the seismic activities, but the populations sizes of most of the species are large and the numbers potentially affected are small relative to the population sizes. The best estimate of the total number of odontocetes that might be exposed to ≥ 160 dB re 1 μ Pa (rms) in the proposed survey areas in the Mid-Atlantic Ocean is 746 for the TAG cruise, and 991 for the ADWBC cruise. Of these, 709 (TAG cruise) and 943 (ADWBC cruise) are Delphinidae, and of these about 204 (TAG cruise) and 322 (ADWBC cruise) might be exposed to ≥ 170 dB. Approximately 316 and 419 common dolphins (the most abundant delphinid in the proposed survey areas) are expected to be exposed to seismic sounds ≥ 160 dB in the TAG and

ADWBC seismic survey areas, respectively. These figures represent considerably less than 0.2 and 0.3 percent of the North Atlantic population of common dolphins, respectively. Of these, 91 and 144, respectively, might be exposed to ≥ 170 dB. These figures are much less than 0.1 percent of the North Atlantic population and the 170-dB values (91 and 144) are believed to be a more accurate estimate of the number potentially affected. Smaller numbers of other species of dolphins will be exposed to seismic sounds ≥ 160 dB during the surveys, and the numbers for each species represent considerably less than 0.1 to 0.7 percent of each population. The numbers that might be exposed to ≥ 170 dB are even smaller and represent considerably less than 0.1 to 0.2 percent of each population; these latter percentages are believed to be a more accurate estimate of the numbers potentially affected. Based on the relatively low numbers of marine mammals that will be exposed at levels ≥ 160 dB and the expected impacts at these levels, NMFS has determined that this action will have a negligible impact on the affected species or stocks.

Altogether, the mitigation measures explained in this document (*See Mitigation*) will reduce short-term reactions to disturbance, and minimize any effects on hearing sensitivity.

Effects on Pinnipeds

Very few if any pinnipeds are expected to be encountered during the proposed seismic surveys in the Mid-Atlantic Ocean. Most have a coastal distribution or are distributed along the pack-ice edge. Therefore, it is unlikely that pinnipeds will be encountered in either study area. However, if pinnipeds are encountered, they are more likely to be seen during the ADWBC cruise in the northern Mid-Atlantic than during the TAG cruise. A few gray seals, which are normally found in coastal areas might be seen during the ADWBC cruise. In addition, a few vagrant harbor seals, harp seals, or hooded seals might be encountered. None of the pinniped species is endangered or depleted.

Because no seismic surveys will take place in coastal and nearshore areas, the best estimate of the numbers of each of the more common (but still unlikely) species that might be taken by Level B harassment is no more than 2 and is most likely 0. For the other less-common species the best estimate is zero. If pinnipeds are encountered, the proposed seismic activities would have, at most, a short-term effect on their behavior and no long-term impacts on individual seals or their populations. Responses of pinnipeds to acoustic

disturbance are variable, but usually quite limited. Effects are expected to be limited to short-term and localized behavioral changes falling within the MMPA definition of Level B harassment. Therefore, based on these effects and the relatively low numbers of pinniped species that may be exposed, NMFS has determined that this action will have a negligible impact on the affected species or stocks.

Determinations

Based on the information contained in the LDEO application, the NSF EA, the September 17, 2003, proposed authorization notice (68 FR 54421) and this document, NMFS has determined that conducting two marine seismic surveys, one each by the *Ewing* and the *Knorr*, in the Mid-Atlantic Ocean by LDEO would result in the harassment of small numbers of marine mammals; would have no more than a negligible impact on the affected marine mammal species or stocks; and would not have an unmitigable adverse impact on the availability of stocks for subsistence uses. This activity will result, at worst, in a temporary modification in behavior by affected species of marine mammals. While behavioral modifications may be made by these species as a result of seismic survey activities, this behavioral change is expected to result in no more than a negligible impact on the affected species. Also, while the number of actual incidental harassment takes will depend on the distribution and abundance of marine mammals in the vicinity of the survey activity, the number of potential harassment takings is estimated to be small. In addition, no take by injury and/or death is anticipated, and the potential for temporary or permanent hearing impairment is low and will be avoided through the incorporation of the mitigation measures mentioned in this document and required under the IHA. For these reasons therefore, NMFS has determined that the requirements of section 101(a)(5)(D) of the MMPA have been met and the authorization can be issued.

Endangered Species Act (ESA)

NMFS has concluded consultation under section 7 of the ESA on NMFS' issuance of an IHA to take small numbers of marine mammals, by harassment, incidental to conducting two oceanographic seismic surveys in the Mid-Atlantic Ocean by LDEO. The consultation concluded with a biological opinion that this action is not likely to jeopardize the continued existence of marine species listed as threatened or endangered under the

ESA. No critical habitat has been designated for these species in the equatorial Pacific Ocean; therefore, none will be affected. A copy of the Biological Opinion is available upon request (*see ADDRESSES*).

National Environmental Policy Act (NEPA)

On July 30, 2003, the NSF made a determination, based on information contained within its Environmental Assessment (EA), that implementation of the subject action is not a major Federal action having significant effects on the environment within the meaning of Executive Order 12114. NSF determined therefore, that an environmental impact statement would not be prepared. On September 17, 2003 (68 FR 54421), NMFS noted that the NSF had prepared an EA for the Mid-Atlantic surveys and made it available upon request. In accordance with NOAA Administrative Order 216-6 (Environmental Review Procedures for Implementing the National Environmental Policy Act, May 20, 1999), NMFS has reviewed the information contained in NSF's EA and determined that the NSF EA accurately and completely describes the proposed action alternative, reasonable additional alternatives, 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. As a result, NMFS has determined that it is not necessary to issue either a new EA, supplemental EA or an environmental impact statement for the issuance of an IHA to LDEO for this activity. Therefore, based on this review and analysis, NMFS is adopting the NSF EA under 40 CFR 1506.3. A copy of the NSF EA for this activity is available upon request (*see ADDRESSES*).

Authorization

NMFS has issued an IHA to take small numbers of marine mammals, by harassment, incidental to conducting two marine seismic surveys, one by the *Ewing* and one by the *Knorr*, in the Mid-Atlantic Ocean to LDEO for a 1-year period, provided the mitigation, monitoring, and reporting requirements described in this document and the IHA are undertaken.

Dated: October 23, 2003.

Phil Williams,

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

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