

Agenda Item 4.10—AMSA Recommendation II(G) by USA

**PAME II-2012 Agenda Item 4.10  
AMSA Recommendation II(G)  
International Measures Related to Impacts of Shipping on Marine Mammals**

---

**Background**

AMSA Recommendation II(G) provides:

*That Arctic states decide to engage with relevant international organizations to further assess the effects on marine mammals due to ship noise, disturbance and strikes in Arctic waters; and consider, where needed, to work with the IMO in developing and implementing mitigation strategies.*

PAME II-2012 adopted a record of decision (ROD) inviting the United States to “submit information to PAME I-2013 on the work of the IMO, ISO, and IWC related to impacts of shipping on marine mammals” in furtherance of AMSA Recommendation II(G).

**U.S. Response**

The work to date of the International Maritime Organization (IMO), the International Organization for Standardization (ISO), and the International Whaling Commission (IWC) to the adverse effects on marine mammals of incidentally generated ship noise and ship strikes is presented below.

The Effects of Noise Pollution on Marine Mammals

The exponential increase in undersea noise over the past several decades is a decidedly international problem. The effects of “noise pollution” produced by anthropogenic sources are often felt well beyond national boundaries, where jurisdictional questions may arise and data on affected species is difficult to collect. Recently, however, new scientific data have drawn greater attention to the issue of underwater noise generated by ships,<sup>1</sup> and international bodies have begun to take action. These bodies include IMO, ISO and IWC, each of which has begun formulating responses to various aspects of the problem.

1. *The International Maritime Organization (IMO)*

In the wake of a paper submitted by the U.S.,<sup>2</sup> the IMO’s Marine Environment Protection Committee (MEPC) at its 57<sup>th</sup> meeting in 2008 formally recognized the harmful effects of ship-

---

<sup>1</sup> See, e.g., M.F. McKenna, Ross, D., et al., *Underwater radiated noise from modern commercial ships*, 131 J. Acoust. Soc. Am. 92 (January 2012), available at <http://cet.usd.edu/Publications/Publications/McKennaJASA2012.pdf>

<sup>2</sup> See U.S., *Minimizing the introduction of incidental noise from commercial shipping operations into*

generated noise.<sup>3</sup> The issue was then officially added to the MEPC's agenda and a work program was initiated to develop technical guidelines for ship-quieting technologies. The MEPC's 61st meeting in 2010 saw agreement to continue the work related to noise pollution, and called for the promulgation of guidance on "reduc[ing] the adverse impact of ship[] noise."

Tasked by the MEPC in 2011, IMO's Ship Design and Equipment Sub-Committee is currently developing non-binding technical guidelines for reducing underwater noise from commercial ships.<sup>4</sup> Current work to develop the Guidelines is being led by the United States in an inter-session Correspondence Group. Based on the work of the Correspondence Group, the IMO's Ship Design and Equipment Sub-Committee will meet in March 2013 to examine the current draft Guidelines and make recommendations for improvement. The proposed framework is intended to provide general advice to ship designers, shipbuilders, and ship owners about the primary sources of underwater noise from commercial ships, including propeller cavitation, hull form design, on-board machinery, and operational measures.

## 2. *The International Organization for Standardization (ISO)*

In addition to initiating the development of technical guidelines for ship-quieting technologies, MEPC sought to identify an appropriate method for measuring underwater noise incidentally generated by ships. Seeking to be of assistance, the ISO began the development of such a method with the objective of ensuring reproducible measurements for the collection of underwater sound generated by commercial ships. The result is ISO 16554, entitled *Measurement and reporting of underwater sound radiating from merchant ships*, which is still in draft.<sup>5</sup>

## 3. *The International Whaling Commission (IWC)*

In mid-2004, an IWC workshop regarding the effects of ocean noise on cetaceans led a working group of the IWC's Scientific Committee to publish a statement of concern regarding intense underwater noise. The working group laid out its "alarming concerns" over harm from noise and unanimously acknowledged the "compelling evidence implicating anthropogenic sound as a potential threat to marine mammals," which exists "at both regional and ocean-scale levels" and "could impact populations of animals." The IWC's full Scientific Committee reviewed the working group's report and concurred that the growth of ocean noise was cause for "serious

---

*the marine environment to reduce potential adverse impacts on marine life*, MEPC 58/19 (June 25, 2008), available at [http://www.gc.noaa.gov/documents/MEPC\\_58-19\[1\].pdf](http://www.gc.noaa.gov/documents/MEPC_58-19[1].pdf).

<sup>3</sup> Reports of MEPC meetings can be found on the IMO's website; the URL for records of past MEPC meetings is included in this paper's appendix.

<sup>4</sup> The draft guidelines will not address the introduction of noise from naval or war ships or the deliberate introduction of noise for other purposes such as sonar or seismic activities.

<sup>5</sup> See ISO, *Noise from Commercial Shipping and its Adverse Impact on Marine Life: Development of an International Standard for the Measurement of Underwater Noise Radiated from Ships*, MEPC 62/19 (May 6, 2011), available at <http://www.amtcc.com/imosite/meetings/IMOMeeting2011/MEPC62/MEPC%2062-19.pdf> In the U.S., the American National Standards Institute (ANSI) and the Acoustical Society of America have developed a voluntary consensus standard for the measurement of underwater noise from ships. See ANSI ASA S12.64-2009, available at <http://asastore.aip.org/shop.do?pid=580>.

concern.”<sup>6</sup> Importantly, the Committee called for the inclusion of noise exposure standards in national and international ocean conservation plans.

In 2005, following a series of mass strandings of cetaceans that were deemed coincident with noise events, the IWC’s Scientific Committee revisited the issue. The Committee concluded that noise pollution may be having an adverse effect on more species than was previously understood, and called upon producers of underwater noise to share information regarding noise source characteristics.

During the meeting of the IWC’s Scientific Committee in June 2012, the United States presented its Cetaceans and Sound (CetSound) project where it is developing mapping tools: underwater sound-field maps and cetacean density and distribution maps. The Scientific Committee endorsed this work and strongly recommended support for further development and improvement of these tools. During the IWC’s 64th annual meeting in 2012, the Commission supported the Scientific Committee’s recommendations and agreed to continue to address ocean noise issues. A group of IWC member governments are currently working interessionally on potential proposals to the upcoming meetings of the IWC and its Scientific Committee.

In 2012, the IWC also was requested to continue working with other international organizations, in particular the IMO, as the IMO works to develop ship quieting technology and reduce ocean noise. The IWC was also encouraged to explore new partnerships to further this work, including collaboration with the Arctic Council.

It is also worth noting that the IWC has exhibited an interest in the regional effects of noise pollution. An IWC workshop, planned for late summer/early fall 2013, will cover anthropogenic impacts (including underwater noise) on cetaceans in the Arctic.

### Ship Strikes Involving Marine Mammals

Collisions with ocean-going vessels are widely recognized to be among the chief dangers to marine mammals worldwide. Indeed, ship strikes are considered among the leading human-caused sources of mortality for critically-endangered species such as the North Atlantic right whale. Increasingly, the international community has recognized that actions are needed to reduce the occurrence of vessel strikes in areas where marine mammals aggregate. Manifestations of this understanding by IMO, ISO, and IWC are as follows:

#### *1. The International Maritime Organization (IMO)*

The IMO’s role in reducing ship strikes has, historically, been tied to the independent submissions of its members seeking to reduce incidences of vessel strikes in specific geographic regions. The IMO was first approached about the problem of ship strikes by the United States in June 1997 with regard to North Atlantic right whales. At the United States’ request, the IMO

---

<sup>6</sup> The IWC Scientific Committee’s report on underwater noise can be found at: <http://www.acousticecology.org/docs/IWC56-SCReportNoiseSymposium.doc>. Additionally, the URL for records of past IWC Scientific Committee documents is included in this paper’s appendix.

distributed the United States' paper on the subject to IMO member states, calling upon them to inform their respective shipping interests about the issue and to provide reports of vessel strikes of North Atlantic right whales to the U.S. National Oceanic and Atmospheric Administration (NOAA). Later—again, at the United States' request—the IMO adopted two mandatory ship reporting (MSR) systems off the United States' east coast (in areas where North Atlantic right whales aggregate). The MSR systems became effective on July 1, 1999 marking the first time the IMO adopted an MSR system to protect a single marine species.

Subsequent submissions by IMO members have resulted in the IMO's adoption of vessel traffic separation schemes (TSS) to reduce vessel collisions with whales, and "areas to be avoided," in the Gulf of Maine's Great South Channel and in Canada's Roseway Basin for the same purpose. A table of measures adopted by the IMO for the purpose of minimizing interactions between ships and marine mammals is provided below:

<b>Requesting State (Request Year(s))</b>	<b>Affected Area</b>	<b>Marine Mammal(s) Protected</b>	<b>Measure(s) Taken</b>
United States (1997–99)	United States' east coast	North Atlantic right whale	Alert to IMO member states; ship strike reporting system; MSR adopted by IMO and implemented by the U.S.
Canada (2002–03)	Bay of Fundy (on Canada's east coast)	North Atlantic right whale	Modification of a TSS
Spain (2005–06)	Cabo de Gata (western Mediterranean)	Cetacean species generally;	Modification of a TSS
Spain (2006–08)	Strait of Gibraltar	Fin whale; sperm whale	Creation of a TSS; recommended speed limit
United States (2006–09)	Boston area (on the United States' northeast coast)	North Atlantic right whale; other large whale species	Modification of a TSS
Canada (2007–08)	Roseway Basin (on Canada's east coast)	North Atlantic right whale	Area to be avoided
United States (2008–09)	Great South Channel, Gulf of Maine (on the United States' northeast coast)	North Atlantic right whale	Area to be avoided

In addition, in 2008 the United States submitted to MEPC a draft guidance document that identified ways to minimize ship strikes of marine mammals worldwide. In May 2009, Spain, France, Italy, and Monaco expressed their support for the United States' guidance (albeit with a

focus on the Mediterranean Sea). An MEPC circular resulted;<sup>7</sup> it invited member states to bring the proposed strike prevention measures to the attention of interested parties, including administrations, recognized organizations, and shipping interests. The circular identifies general principles for IMO member states to monitor, assess, and mitigate ship strike risk in waters under their jurisdiction. International cooperation is also considered in the circular, which references the IWC as an international organization of particular relevance.

## 2. *The International Organization for Standardization (ISO)*

As the problem of ship strikes involving marine mammals is an issue that lies beyond the ISO's competence, the ISO has not played a direct role in addressing the phenomenon.

## 3. *The International Whaling Commission (IWC)*

The IWC's Conservation and Scientific Committees handle the issue of ship strikes. The Conservation Committee calls upon IWC members to report on domestic measures taken to reduce the occurrence of ships strikes, and make records of ship strikes that do take place.

The Conservation Committee has also created a Ship Strikes Working Group, which is charged with proposing steps to reduce ship strikes generally and coordinating member governments' approaches to the issue. In 2010, the Ship Strikes Working Group held a joint workshop with parties to the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS). The workshop discussed a range of mitigation measures for reducing ship strikes, and recommended:

- 1) maintenance of an IWC ship strike database;
- 2) calling upon IWC member states to regularly submit ship strike data to the IWC Secretariat;
- 3) calling upon IWC member states to report ship strike data "to relevant maritime sector bodies, including port authorities, shipping federations, coast guards and other relevant bodies"; and
- 4) creation of a Steering Committee for a multidisciplinary workshop on ship strike mitigation.<sup>8</sup>

The Conservation Committee is planning another workshop on the reduction of ship strikes which is expected to be held in Panama in late 2013. The IWC's Scientific Committee is also coordinating with its Subcommittee on Bycatch to develop a method of estimating the number of whales killed from ship strikes.

<sup>7</sup> IMO, *Guidance Document for Minimizing the Risk of Ship Strikes with Cetaceans*, MEPC.1/Circ.674 (July 31, 2009), available at [http://www.imo.org/blast/blastDataHelper.asp?data\\_id=26244&filename=674.pdf](http://www.imo.org/blast/blastDataHelper.asp?data_id=26244&filename=674.pdf).

<sup>8</sup> This material is excerpted from the workshop's report, which can be found at: <http://www.iwcoffice.org/cache/downloads/2dm38ob6d9a8wwss04gskk80w/Ship%20strikes%20workshop%20report%20final.pdf>. Additionally, the URL for the IWC webpage on the Joint IWC/ACCOBAMS workshop on ship strikes is included in this paper's appendix.

Since 2010, IWC has been developing a global database of incidents involving collisions between vessels and whales. A web-based data entry system has been in place since 2010. As few new reports were submitted since the database's launch, the Scientific Committee agreed that a more pro-active approach is needed to encourage data to be entered and recommended the IWC appoint a dedicated ship strike data coordinator.

## **Recommendations**

Bearing in mind article 65 of the United Nations Convention on the Law of the Sea which provides, "States shall cooperate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organizations for their conservation, management and study," the United States recommends:

- that PAME encourage its member governments to work through specialized bodies, such as the IMO's Marine Environmental Protection Committee, to utilize relevant ship noise measurement methods (such as the under development at the ISO) to better understand and where practicable mitigate the adverse impact on marine mammals of underwater noise incidentally generated by merchant shipping;
- that PAME member governments support, where feasible, efforts in other international and intergovernmental bodies such as the IMO and IWC to better understand and address the impacts on marine mammals in the Arctic of noise incidentally generated by merchant shipping;
- that PAME member governments explore the possible development of proposals to IMO of ship routing and/or reporting measures to minimize ships strikes of cetaceans in Arctic waters; and
- That PAME member governments invite a representative of the U.S. Cetacean Density and Distribution Mapping Working Group to give a presentation at PAME II-2013 on the group's current work to create an online portal to access information on cetacean density (number of individuals expected to be found in a given area), distribution, and biologically important areas ( known areas of specific importance for cetaceans, such as reproductive areas, feeding areas, migratory corridors and areas in which small or resident populations are concentrated). Such maps are being used to inform ship strike and noise exposure risk assessments for cetaceans in U.S. waters in conjunction with vessel tracking and sound field mapping work. Arctic regional cetacean and sound field mapping products could be used to inform the merits of possible IMO routing and reporting measure proposals for this region.

## APPENDIX

**Records of Past Meetings of the IMO's MEPC**

<http://www.imo.org/MediaCentre/MeetingSummaries/MEPC/Pages/Default.aspx>

**The Working Draft of ISO 16554 (available for purchase from the ISO)**

[http://www.iso.org/iso/catalogue\\_detail.htm?csnumber=57098](http://www.iso.org/iso/catalogue_detail.htm?csnumber=57098)

**The IWC Scientific Committee Document Archive**

<http://www.iwcoffice.org/sc-documents>

**The IWC Ship Strikes Website**

<http://www.iwcoffice.org/ship-strikes>

**The IWC Ship Strikes Database**

<http://www.iwcoffice.org/index.php?cID=872&cType=document&download=1>

**The IWC Webpage for the Joint IWC/ACCOBAMS Workshop on Ship Strikes**

<http://www.iwcoffice.org/shipstrikes10>