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SUB-COMMITTEE ON SAFETY
OF NAVIGATION
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Agenda Item xx

SHIP REPORTING

Ship reporting systems for the eastern coast of the United States

Submitted by the United States

1 Two areas are proposed for the establishment of mandatory ship reporting systems; these areas are critically important for endangered large whale species, in particular the most endangered of the world's large whales, the northern right whale. The area off the southeastern United States is the species' only known calving grounds. The area off the northeastern United States is a principal feeding areas for right whales.

2 Although right whales are also found outside of these areas, the proposed areas are where there is an overlap of large numbers of whales and a high volume of ship traffic. Ship collisions are the largest known source of human-related mortality of right whales.

3 As set forth in the proposal, the United States has taken steps to identify and implement measures to reduce the likelihood of such collisions. These steps include such things as the dissemination of information through a variety of means to mariners regarding the issue of ship strikes and right whales. Several workshops have been conducted with representatives from the shipping community, environmental groups, whale biologists, and government agencies to examine relevant information and management options, including research and development issues, merchant mariner education, and ship operations management. Two of these workshops identified guidelines for measures mariners may take to avoid right whales, now published in the U.S. Coast Pilots. Information brochures and placards have been distributed to mariners. A combination of periodic aerial and vessel surveys are conducted seasonally to attempt to locate right whales so that this information can be provided through various telecommunication networks to mariners operating in the vicinity of whales. These surveys unfortunately locate only a small percentage of the whales, the information from them remains valid only for a short time because the whales move, and surveys cannot be conducted at night or in inclement weather. Despite the limitations of these surveys, they are the best means currently available for detecting the location of whales and thus provide valuable information to mariners. There are also Right Whale Recovery Plan Implementation Teams for both the northeast and the southeast to help oversee right whale

recovery efforts. In addition, the United States has set up educational exhibits at various meetings of the International Maritime Organization (IMO) and submitted an information paper to the Marine Environment Protection Committee. The IMO News has published an article on the issue of ship strikes of right whales. (No. 4, 1997).

4 In spite of these efforts, ship collisions with endangered large whales, particularly right whales, continue to occur. Protection of these endangered whales would be greatly enhanced by communicating directly with ships in these areas through mandatory ship reporting systems. Also, such systems would minimize the risk of collision damage to ships as well as provide important beneficial information to the ships. This information would include warnings of the risk of hitting right whales, where to obtain seasonal right whale advisories which are broadcast periodically, and where to consult for information about applicable regulations and precautionary measures that mariners may take to reduce the risk of hitting right whales.

5 In accordance with Regulation 8-1 of Chapter V of the Safety of Life at Sea Convention and MSC.43(64), the annex to this document sets forth the proposal for establishing the two mandatory ship reporting systems.

Action requested by the Sub-Committee

6 The Sub-Committee is requested to consider and approve this proposal, taking into account the information set forth in NAV 44/Inf. xx and forward it to the Maritime Safety Committee for adoption.

Annex

Proposal for Adoption of Mandatory Ship Reporting Systems

1 Objectives

The establishment of two mandatory ship reporting systems, one off the northeastern coast and one off the southeastern coast of the United States, would provide important protection for endangered large whale species, in particular the critically endangered northern right whale. Ship strikes are the species' largest known source of human-related mortality. Since 1991, approximately 50% of the recorded right whale mortalities have been attributed to ship strikes.

Communication between shore-based authorities and ships in these areas would minimize the risk of collision damage to ships and the whales as well as provide beneficial information to ships.

The mandatory ship reporting system in the southeastern United States would operate from 15 November to 15 April. This period includes the calving season for right whales in this area. The system in the northeastern United States would operate throughout the year as right whales have been sighted in this area in all months of the year.

2 Categories of ships

All ships of 300 gross tons or greater would be required to participate in the reporting systems, except sovereign immune vessels which are exempt from reporting by regulation V/8-1(c).

3 Hydrographical and meteorological elements, characteristics of ship traffic, and any environmental aspects of the area

.1 Hydrographical and meteorological elements

.1 Northeastern United States. The hydrographical and meteorological elements existing in the area create conditions favorable to production of right whale food sources and therefore contribute to their presence in the area. These elements can also adversely affect the ability of mariners to detect whales.

The proposed mandatory ship reporting system covers an area of high ship traffic density and variable weather. The northern part of the system encompasses the approaches to Boston Harbor (the largest seaport in New England), Massachusetts Bay, and Cape Cod Bay. The area is extensively marked with aids to navigation, and Loran C and differential Global Positioning System (GPS) provide excellent

coverage. The weather in the area is changeable, with frequent thick fog and strong and variable tides.

The southern part of the ship reporting system is approximately 30 miles southeast of Nantucket Island, Massachusetts, just east of the Nantucket Shoals Area to Be Avoided, and encompasses the western half of the Great South Channel, part of the Boston Harbor Traffic Separation Scheme (TSS) north to Race Point, Cape Cod, Massachusetts. The Great South Channel is bounded to the west by Cape Cod and the Nantucket shoals and to the east by the Georges Bank fishing grounds. Loran C and differential GPS provide excellent coverage. The Boston Harbor TSS is marked by buoys every 15 nm. Fishing is heavy to the east of the TSS. Radar navigation is poor due to the low topography and distances from land. There are few calm days. During certain seasons, and in particular during peak whale season, the weather is usually foggy. Moreover, it is foggy when the sea is calm and when it is clear, the sea is often rough. Also, there is a considerable amount of hazy weather which limits visibility. Heavy storms and rain are common.

.2 Southeastern United States. The hydrological and meteorological elements in the coastal waters off Georgia and northeastern Florida provide the favorable conditions for the species' calving. This area is their only known calving grounds. The Georgia coastline, between Savannah River on the north and St. Mary's River on the south, is partly submerged at flood tide, and is broken by tidal rivers and marshes covered with dense grass. Beaches are sandy and flat. The coastline of Florida is a long, low-profile barrier beach where aids to navigation mark all critical dangers. Loran C and differential GPS provide excellent coverage. Radar navigation is of less assistance due to the low topography. The water is generally clear. Severe storms including hurricanes are common. Visibility is generally excellent, with light winds and attendant low sea state. In winter, early morning coastal fog is common, limiting visibility until the fog lifts with the rising sun. Winter storms are common and move quickly through the region.

.2 Characteristics of ship traffic

.1 Northeastern United States. There is a variety of ship traffic operating in the proposed mandatory ship reporting area in the northeastern United States and the amount is relatively high. This includes fishing vessels, recreational vessels, and commercial traffic. Major shipping lanes exist in this area such as the Boston Harbor TSS, the Great South Channel, and the traffic lanes to transit north to the Bay of Fundy, Canada.

.2 Southeastern United States. There is also a variety of ship traffic operating in the area proposed for the mandatory ship reporting system in the southeastern United States such as fishing vessels, military vessels, and commercial traffic. Shipping lanes cross the area and include those into the several area ports.

.3 Environmental characteristics

.1 Right whales aggregate to feed or calve in five seasonal habitats along the eastern seaboard from Florida to Nova Scotia: (a) off the southeastern United States, (b) in the Great South Channel, Massachusetts; (c) in Massachusetts and Cape Cod Bays, Massachusetts; (d) in the lower Bay of Fundy, Canada; and (e) over the southern Nova Scotian shelf, Canada (notably those areas referred to as Browns Bank and Roseway Basin). Portions of these areas have been designated as "critical habitat" for northern right whales or as a national marine sanctuary under U.S. domestic law and as conservation areas under Canadian law. (Figure 1.) Right whale sightings also occur outside these areas. The whales migrate between southeastern and northeastern United States; however, there is not enough information on occurrence of whales and shipping traffic to establish a system to cover this entire area. Little is known about the migratory corridor, but it is believed that migrating whales, in particular mothers and calves, remain within 20 miles of the coast.

.2 Description of northern right whale. Northern right whales reach lengths of 45 to 55 feet and are black in color. The best field identification marks are a broad back with no dorsal fin, irregular bumpy white patches (callosities) on the head, and a distinctive two-column V-shaped blow. They have paddle-like flippers nearly as wide as they are long, and a broad, deeply notched tail. Right whales are slow moving, with occasional speeds of up to only 5-6 knots. They are often difficult to spot in rough seas and at night due to their low profile and dark coloration.

.3 Behavior. Right whale behavior undoubtedly plays a role in their vulnerability to ship collisions. For example, whales may occur in surface active groups -- i.e., four to five individuals engaging in frequent physical contact and mating behavior. Right whales also engage in skim feeding, in which they gather plankton by swimming slowly at the surface with their mouth open. During both feeding and surface active situations, whales are focused on the activity and appear unaware of the approach of ships. Right whales also spend long periods resting at the surface, a behavior called "logging." Mothers nursing young are frequently observed logging. Additionally, calves have limited diving capacities and spend most of

their time at the surface. Because right whales rest and nurse their young at the surface, the calves are unable to dive deeply, and the whales often do not move out of the way of oncoming ships, they are highly vulnerable to being struck by ships.

.4 Northeastern United States. Right whales occur seasonally in Massachusetts and Cape Cod Bays (peak season: January through April), the Great South Channel (peak season: April through June), and Jeffreys Ledge (peak season: July through mid-December). The first two areas are federally designated critical habitats for right whales. Stellwagen Bank (in Massachusetts Bay) and Jeffreys Ledge are located in the federally designated Gerry E. Studds Stellwagen Bank National Marine Sanctuary.

In late winter-early spring, right whales arrive in Cape Cod Bay. Springtime hydrographic conditions in Cape Cod Bay concentrate copepods and other zooplankton in dense patches on which the whales feed. The majority of right whales leave Cape Cod Bay by mid-May; however, whales remain throughout the summer in some years.

In late spring and early summer, right whales in the Great South Channel east of Cape Cod are found in the greatest numbers. Hydrographic changes and circulation pattern result in springtime blooms of zooplankton, including right whale prey. Right whales feed both at the surface and at depth depending on where copepods are concentrated. In many years, right whales usually congregate in the highest density concentrations of the copepod on either the eastern or western side of the Great South Channel.

Right whales generally migrate from the Great South Channel region in June when copepod levels decrease and water temperatures increase. Many of the whales move north to the Bay of Fundy arriving in mid-June. The remainder are likely scattered throughout the Gulf of Maine or move onto the eastern side of the Nova Scotian shelf. By mid-summer most of the whales are in feeding areas in the lower Bay of Fundy and on the Scotian Shelf. These areas are used in early winter when the whales begin to migrate to winter habitats along the eastern coast including the southern calving grounds.

.5 Southeastern United States. The coastal waters of the southeastern United States, especially the shallow waters between Savannah, Georgia, and Cape Canaveral, Florida, are right whale calving grounds in the winter. Peak abundance and calving in this region is from December through March, but the winter calving season can begin as early as September and end as late as mid-April. Mothers

and newborn calves tend to stay in the southeast region until spring when they migrate northward.

4 Geographical coverage of the proposed systems and the number and edition of the reference chart used for delineation of the system

.1 Northeastern United States. Geographical boundaries of the proposed northeast area include the water of Cape Cod Bay, Massachusetts Bay, and the Great South Channel east and southeast of Massachusetts (Attachment A). Coordinates of the proposed area are as follows: from a point on Cape Ann, Massachusetts at 42o39' N, 70o37' W; then northeast to 42o45' N, 70o13' W; then southeast to 42o10' N, 68o31' W; then south to 41o00' N, 68o31' W; then west to 41o00' N, 69o17' W; then northeast to 42o05' N, 70o02' W, then west to 42o04' N, 70o10' W; and then along the Massachusetts shoreline of Cape Cod Bay and Massachusetts Bay back to the point on Cape Anne at 42o39' N, 70o37' W.

.2 Southeastern United States. Geographical boundaries of the proposed southeast area include coastal waters within about 25 nm (45 km) along a 90 nm (170 km) stretch of the Atlantic seaboard in Florida and Georgia (Attachment B). The area extends from the shoreline east to longitude 80o51.6' W with the southern and northern boundary at latitudes 30o00' N and 31o27' N, respectively.

5 Reports and procedures (position for submitting reports, content, format)

.1 Position. Participating ships would be required to report to a shore-based authority only when entering the reporting area during a single voyage (that is, a voyage in which a ship is in the area to visit one or multiple ports or traverse the area before leaving for a port outside the reporting area); ships will not be required to report in again after leaving a port in the area or when exiting the system.

.2 Content. Ships would be required to provide the following information: the name of the ship; call sign or IMO identification number if applicable; position when entering the system; course; speed; route; and destination. Commercially sensitive information received in conjunction with the reporting system would be kept confidential.

.3 Format. The format for reporting would be as set forth in paragraph two of the appendix to Assembly Resolution A.648(16). An example of a transmission between ship and shore is at Attachment C.

6 Information and services to be provided to the ship and procedures to be followed

Ships would be provided with the following information:

.1 Mariners would be informed that they are entering an area of critical importance for the protection of the highly endangered right

whale; that such whales are in the area; and that ship strikes pose a serious threat to whales and may cause damage to ships. Communication systems between ship and shore are described below in paragraphs 9 and 11, below.

.2 To obtain seasonal right whale advisories which are broadcast periodically, mariners would also be advised to monitor Coast Guard Broadcast Notice to Mariners, NAVTEX, NOAA Weather Radio, and, in the northeastern ship reporting system area only, the Cape Cod Canal Vessel Traffic Control and the Bay of Fundy Vessel Traffic Control. These advisories are based on surveys that are flown seasonally and in daylight and good weather conditions only. The sighting information may be useful only for brief periods as the whales move and surveys detect a small percentage of the whales present.

.3 Mariners would be advised to consult with NAVTEX, INMARSAT C SafetyNET (satellite text broadcasts), the Coast Pilot Sailing Directions, Notice to Mariners, the nautical charts for information on the boundaries of the right whale critical habitat and the national marine sanctuary, applicable regulations, and precautionary measures that mariners may take to reduce the risk of hitting right whales. Mariners will further be advised that information placards, videos, and other educational materials are available from shipping agents, port authorities, relevant state agencies, the Coast Guard, and the National Marine Fisheries Service.

.4 In the message back to the ship, mariners would also be requested to report any whale sightings and dead, injured, or entangled marine mammals to the nearest local Coast Guard station.

7 Communication requirements, frequencies on which the reports should be transmitted

.1 The reporting system in the northeastern United States will operate independently of the system in the southeastern United States. The system in the northeastern United States will operate year round, and the system in the southeastern United States will operate from 15 November through 15 April.

.2 The systems rely on the fact that all ships 300 gross tons and greater will be required to be equipped with direct printing radiotelegraphy capability after February 1, 1999. Thus, the systems will require ships to report in standard format preferably through INMARSAT C. For those ships using INMARSAT C, the message will be sent to the shore-based authority described in section 9.1 and a message will be automatically transmitted back to the ship also via INMARSAT C.

Ships reporting through SITOR or other direct printing radiotelegraphy will receive the same message from the shore-based authority described in section 9.2.

.3 Ships not equipped with INMARSAT C will be required to report in standard format to the shore-based authority described in section 9.2, either through direct printing radiotelegraphy or MF, HF, or VHF voice communication systems.

.4 The language used for reports in the system will be English, using the IMO *Standard Marine Communication Phrases* where necessary. Standard phrases in a prescribed format will be used in all radiotelegraph and radiotelephone communications.

.5 Commercially sensitive information will be kept confidential.

.6 The United States will review the ship reporting systems no later than five years after their implementation date, to examine advances made in ship communication technologies and to ensure effective operation of the systems.

8 Relevant rules and regulations in force

The United States has taken appropriate action to implement international conventions to which it is a party including, where appropriate, adopting domestic legislation and promulgating regulations through domestic law. Relevant laws in force include domestic legislation and regulations to implement the International Convention on Collision Regulations, the Safety of Life at Sea Convention, the International Convention on the Prevention of Pollution from Ships, the International Convention on Oil Pollution, Preparedness, Response and Co-operation, the Convention on the International Trade in Endangered Species of Wild Fauna and Flora, the International Convention for the Regulation of Whaling and other treaties. Relevant domestic legislation include the Ports and Waterways Safety Act, the Endangered Species Act, the Whaling Convention Act, the Marine Mammal Protection Act, the Marine Protection Resources and Sanctuaries Act, and a variety of other acts. In some cases, rules have been promulgated including those relating specifically to right whales or governing ship operations. For example, a regulation has been promulgated which prohibits most approaches within 500 yards (460 meters) of a northern right whale. This regulation, as well as other domestic law, is implemented and enforced consistent with international law.

9 Shore-based Authority (radar, radio communications facilities, personnel)

.1 The shore-based authority for those ships reporting via INMARSAT C is the U.S. Coast Guard. The e-mail address to be used for this reporting will be provided well in advance of implementation of the systems through Notices to Mariners.

.2 The small percentage of ships that do not have INMARSAT C capabilities will be required to contact the nearest Coast Guard communication station, either through

direct printing radiotelegraphy or MF, HF, or VHF voice communications systems. The U.S. Coast Guard maintains communication stations along the U.S. east coast. Merchant mariners are familiar with these stations. Information received from the ships will be sent electronically to a central location for data storage, handling, and retrieval.

10 Summary of measures used to date

.1 The United States has taken numerous steps to advise mariners in the proposed reporting areas about the presence right whales, the threats ships pose to the whales, and precautions that may be taken to avoid hitting whales. These include:

.1 Brochures, flyers, videos, and other information on the endangered status of right whales and precautionary measures have been developed and distributed to ships using ports in both areas by port authorities, port pilots, shipping agents, the Navy, state agencies and others.

.2 Information on right whales and precautionary measures that ships may take to avoid whales has been published in regional U.S. Coast Pilot, Notice to Mariners, and other publications and on nautical charts. Steps are being taken to update and expand right whale related information in these and other documents.

.3 Periodic advisories on right whale locations are broadcast seasonally in both regions over Coast Guard Broadcast Notice to Mariners, NAVTEX, NOAA Weather Radio, on the internet, and, in the northeastern ship reporting system area only, the Cape Cod Canal Vessel Traffic Control and the Bay of Fundy Vessel Traffic Control. These advisories are based on a combination of periodic aerial and ship surveys that attempt to locate right whales so that the information can be provided to mariners operating in the vicinity of the whales. These surveys unfortunately locate only a small percentage of the whales, the information from them remains valid only for a short period of time because the whales move, and they cannot be conducted at night or in bad weather. Despite the limitations of these surveys, they are the best means currently available for detecting the location of whales and thus provide valuable information.

.1 In the northeast, the survey system has only been in operation for one season. The surveys were conducted in right whale critical habitat from January to early July. Coordinates for right whale sightings are disseminated by an automated fax system and made available to all marine resource users through the

variety of telecommunications networks listed above. Maps of right whale sightings are also posted on internet web pages hosted by the Massachusetts Executive Office of Environmental Affairs and the National Marine Fisheries Service which are linked to other sites. Also a National Marine Fisheries Service inquiry line in the northeast region provides right whale sighting faxes to anyone requesting such information.

.2 In the southeast, the survey system has been in operation since 1994; surveys are conducted during the whales' calving season which is approximately December through March. Information on sightings from all sources is sent immediately to the Navy's Fleet Area Control and Surveillance Facility, Jacksonville, Florida (FACSFACJAX). FACSFACJAX coordinates all sightings coming in from the states, naval vessels, and all other sources; eliminates duplicate sightings; and then forwards the information to the Coast Guard, which posts information on sightings over NAVTEX in the form of Notices to Mariners. Information from survey contractors also relay their sightings directly to the NAVTEX

operators via fax. Ships observed underway in the vicinity of whales are contacted directly via VHF radio from the surveillance aircraft.

.4 Information on the status of right whales, the impact of ship traffic, and precautions to avoid collisions between right whales and ships have been provided to the IMO through information papers and exhibits at recent meetings of NAV, the Marine Environment Protection Committee, the Maritime Safety Committee, and through the IMO News.

.2 The National Marine Fisheries Service has designated areas with consistent and frequent right whale sightings in both the northeast and southeast as critical habitat under U.S. domestic law. In the northeast, a portion of the reporting area has also been designated as a national marine sanctuary under U.S. domestic law. The boundaries of designated right whale critical habitats and national marine sanctuary have been marked on regional nautical charts to alert mariners of the potential occurrence of right whales in these areas.

.3 In both areas, the National Marine Fisheries Service has established regional teams composed of representatives of government agencies, the maritime industry, the scientific community, and private groups to coordinate and oversee regional right whale conservation initiatives, including efforts to prevent collisions between right whales and ships.

11 Alternative communications

Risks to shipping and right whales: Short-term failure of the reporting systems due to communications problems will not result in a loss of life, and will have minimal impact on the safety of vessels. NAVTEX Broadcast Notice to Mariners can be used to notify mariners of the temporary failure of the system and can provide mariners with basic information necessary to avoid right whales. Downtime is likely to be minimal and is not expected to result in increased ship strikes and whale mortality. For those ships reporting through INMARSAT C or direct printing radiotelegraphy, the standard protocol now used for such systems will be used to re-route incoming and outgoing communications through an alternate address and it is expected that this will minimize the system's downtime, though some delay may occur.

The Coast Guard operated MF, HF, VHF voice communications systems, by design, have built in redundancies and overlapping coverage areas and an individual equipment or site failure are unlikely to affect the ability of a mariner to contact a Coast Guard facility to make a required report.

12 Effective date of the systems

The systems will be implemented six months after adoption of the proposal by the Maritime Safety Committee.

Attachment C

Example of Message from the Ship

A Ship Name

B Call Sign or IMO Identification Number

D Course

E Speed

H Entry into system

I Destination

L Route

Example of Message Back to the Ship

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From: Shore-based Authority

To: M/V Ship

You are entering an area where a large number of North Atlantic right whales exist. Right whales are critically endangered and at risk from ship strikes. Whales can damage ships' sonar dome, propeller, and shaft. Recommend monitoring Coast Guard Broadcast Notice to Mariners, NAVTEX, NOAA Weather Radio, or, in the northeast only, Cape Cod Canal Vessel Traffic Control and Bay of Fundy Vessel Traffic Control for latest advisories and sightings reports. These advisories and reports are based on surveys which are conducted seasonally; however, such surveys only locate only a small percentage of the whales, the information from them remains valid only for a short period of time because the whales move, and they cannot be conducted at night or in inclement weather.

Urge exercising prudent seamanship to avoid approaching right whales. Recommend consulting NAVTEX, INMARSAT C SafetyNET, the Coast Pilot Sailing Directions, and Notices to Mariners for information on precautionary measures that may be taken to reduce the risk of hitting right whales and for applicable regulations. Right whale critical habitat and the Stellwagen Bank National Marine Sanctuary are also marked on charts.

Right whale information placards, videos, and other educational material are available from shipping agents, port authorities, relevant state agencies, the U.S. Coast Guard, and the National Marine Fisheries Service. Mariners are requested to report right whale sightings, whale entanglements, or dead whales to the Coast Guard on VHF Channel 16.