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## **AIS expansion proposed**

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Enhanced security relating to small vessels operating in waters of the United States has been under consideration for several years. The recent terrorist attack in Mumbai, India has placed the issue on the front burner. Terrorists hijacked a small fishing vessel near the maritime border between India and Pakistan. After killing most of the crew, they forced the master to sail for Mumbai. Upon arrival off the busy port, they beheaded the master and came ashore in small boats to attack hotels and other high-visibility targets. India had no system in place to monitor movements of fishing and other small vessels.

The Automatic Identification System (AIS) was developed over a number of years through the International Maritime Organization (IMO); International Telecommunication Union (ITU); and International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) processes as a tool for improving maritime safety by allowing vessels within very high frequency (VHF) radio range [basically line of sight] to electronically identify each other and show their other vessel's course, speed, and other relevant information on the radar screen. After the horrific terrorist attacks in the United States on September 11, 2001, the value of AIS as a security tool was recognized. International requirements for its installation and use were accelerated. Domestically, a provision was added to the Maritime Transportation Security Act of 2002 (MTSA) directing that certain specific vessel types be equipped with and operate AIS under regulations proscribed by the US Coast Guard. The legislation also authorized the Coast Guard to expand the requirement to "any other vessel" for which the Coast Guard decides that an AIS "is necessary for the safe navigation of the vessel." The term "safe navigation" is now being interpreted as including secure navigation.

Shore facilities capable of receiving AIS transmissions from ships have been installed in the various US ports and waterways with vessel traffic service (VTS) capability. Efforts are underway to expand AIS coverage to virtually all US ports and waterways, as well as offshore, through the use of such things as oceanographic buoys and offshore structures. Tests are underway to determine whether satellites can be used to receive AIS signals.

While the initial domestic requirement for installation and use of AIS did not go far beyond the international requirement, all indications are that this is about to change in a significant way for owners and operators of domestic vessels.

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On December 16, 2008, the US Coast Guard issued a Notice of Proposed Rulemaking (NPRM) that would, if eventually adopted, make significant changes to the AIS carriage requirement (as well as to the notice of arrival and departure requirements). First, domestic vessels could only utilize AIS equipment that has been type-approved by the Coast Guard. Second, the regulations would be restated so as to clarify the requirement that the AIS be properly installed and operated using guidelines set forth by IMO Safety of Navigation Circulars (SN/Circ.) 227, 236,244, and 245 and Resolution A.917(22). This requirement effectively makes mandatory for numerous domestic vessels a series of voluntary international standards. Failure to follow those IMO guidelines would constitute a USCG regulatory violation and might have significant consequences in the event of a marine casualty.

Currently, the AIS carriage requirement for domestic vessels is largely limited to self-propelled commercial vessels of 65 feet or more in length engaged on an international voyage or operating in a designated VTS area. This will greatly change under the Coast Guard proposal. The VTS area provision will be eliminated, along with the international voyage provision. Also eliminated would be the blanket exemption for fishing vessels.

Under the proposal, the following domestic vessels would be required to have onboard a properly installed, operational, Coast Guard type-approved AIS:

- (1) A self-propelled vessel of 65 feet or more in length, engaged in commercial service;
- (2) A towing vessel of 26 feet or more in length and more than 600 horsepower, engaged in commercial service;
- (3) A self-propelled vessel carrying 50 or more passengers, engaged in commercial service;
- (4) A vessel carrying more than 12 passengers for hire and capable of speeds in excess of 30 knots;
- (5) A dredge or floating plant engaged in or near a commercial channel or shipping fairway in operations likely to restrict or affect navigation of other vessels (except for an unmanned or intermittently manned floating plant under the control of a dredge); and
- (6) A self-propelled vessel carrying or engaged in the movement of certain dangerous cargoes (CDC).

Domestic vessels, for the most part, could utilize either the Coast Guard type-approved AIS Class A or Class B equipment, but use of Class B equipment is not recommended for vessels that are highly maneuverable, navigate at high speed, or routinely operate on or near very congested waterways or in close-quarter situations with other AIS equipped vessels. Certain domestic vessels would not, though, be allowed to utilize Class B equipment. The more restrictive requirement of Class A equipment would apply to the following domestic vessels:

- (a) A vessel of 500 gross tonnage or more;
- (b) A vessel of 300 gross tonnage or more on an international voyage; and
- (c) A vessel of 150 gross tonnage or more when carrying more than 12 passengers on an international voyage.

Operational requirements would be specifically imposed for the first time. There must be the ability to reinitialize the AIS should the need arise. This could require access to and knowledge of the AIS power source and password. There must be the ability to access AIS information from the primary conning position of the vessel. The AIS must accurately broadcast the properly assigned Maritime Mobile Service Identity (MMSI) number. All AIS data (such as the vessel's name and type and the destination of the vessel) must be accurately input and kept up-to-date. AIS system updates must be promptly and accurately installed.

AIS devices must be able to broadcast the vessel's position, course, and speed, and may require the input of an external positioning device (e.g., DGPS) to do so. Although of great benefit, the integration of existing, or installation of, other external devices or displays (e.g., transmitting heading device, gyro, rate of turn indicator, ECDIS/ECS, and radar) is highly recommended but not currently required.

With limited exceptions, the AIS and its associated devices must be continually operated at all times the vessel is underway, at anchor, or moored in or near a commercial channel or shipping fairway in operations likely to restrict or affect the navigation of other vessels. Continual operation of the AIS may be interrupted when use of AIS would compromise the safety or security of the vessel or a security incident is imminent. In that event, though, the AIS should be returned to continuous operation as soon as the compromise has been mitigated or the security incident has passed. The AIS operational interruption should be recorded in the vessel's log book and the interruption should be reported to the nearest USCG Captain of the Port (COTP) or Vessel Traffic Center.

AIS messaging must be conducted in English and used solely to exchange or communicate navigation safety information (e.g., SECURITE). Although not prohibited, AIS messaging should not be relied upon as the primary means for broadcasting distress or urgent communications.

Stating the obvious, the proposed regulation would note that AIS is primarily intended for use by the master or the person designated by the master to pilot or direct the movement of the vessel (otherwise known as the officer in charge of the navigational watch). This person must maintain a periodic watch for AIS information.

The portable AIS regulation would not change, but minor changes would be affected to the regulation regarding the pilot port on the AIS device. The requirement for a pilot port or plug would change from "each vessel over 1,600 gross tons on an international voyage" to "any vessel subject to pilotage". Rather than being "available for pilot use", the port would have to be readily available and easily accessible". The power receptacle requirement would change from "near a 120 Volt, AC power, 3-prong receptacle" to "within at least 3 feet of a 120-volt 50/60 Hz AC power receptacle".

A narrow exception to the broadly expanded AIS carriage requirement would be allowed for otherwise-covered vessels that operate solely within a vessel confined area (such as less than one nautical mile radius, a shipyard, or a fleeting area), or on short and fixed schedules (such as a bank-to-bank river ferry service), or that otherwise are not likely to encounter another AIS-equipped vessel. The owner or operator of a vessel seeking such an exception, which would only be granted on a year-to-year basis, must request a deviation in writing.

Vessels that would by this proposal be newly-required to carry an AIS device would have seven months after publication of the final rule in order to install the device.

The proposal does not directly address the training requirement, but this must be borne in mind by the owner and operator. The AIS device will be of little or no value if the persons in charge of navigation of the vessel are unfamiliar with its use and maintenance. As noted above, the proposal includes specific operational requirements. The individuals in charge of navigation must be able to perform these tasks. Marine casualty investigation reports are replete with instances where the person charged with navigation of the vessel did not know how to properly operate a particular piece of navigational equipment. Regulatory agencies and courts show little leniency in cases where a casualty is caused by such lack of training.

While I think AIS has some inherent flaws for use as a security system, I firmly believe that it is an excellent means of enhancing maritime safety. Therefore, I heartily concur with efforts to expand its use. There may be good reasons for granting certain limited exemptions, but on the whole, the more vessels carrying and utilizing AIS, the better. Experience will determine which vessels can get by with the Class B device as opposed to the more sophisticated Class A. As with other pieces of technology, we should expect that prices for this equipment will decrease over time and capability will increase. In the not-too-distant future, AIS may be as ubiquitous as radar.