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Sewage Happens

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Regulation of sewage from ships varies from one location to another. In this respect, it is similar to so much else in the supposedly uniform international shipping industry. This paper will attempt to shed a modest amount of light on the current international and U.S. regulation of shipboard sewage. The issue, though, is subject to much confusion and possibly rapid change.

The discharge of raw or partially-processed sewage into the sea can create a health hazard. In coastal areas, it can also lead to oxygen depletion of the waters (adversely impacting aquatic life) as well as visual and olfactory pollution. The main source of human-produced sewage is from land, but sewage from ships can have significant local impacts in some places.

The International Regime

The international provisions relating to prevention of pollution of the sea by ship's sewage are found in optional Annex IV of the International Convention for the Prevention of Pollution from Ships (MARPOL Convention). For a variety of reasons, Annex IV did not enter into force until (following a significant amendment in 2000), even though it was initially adopted in 1973. Currently, Annex IV has been adopted by 101 nations.

Annex IV applies to ships engaged in international voyages with a tonnage of 400 gross tons or greater. It also applies to ships of less than 400 gross tons that are certified to carry more than 15 persons. The confusion starts now. While Annex IV entered into force on September 27, 2003, it actually only applies to new ships built on or after that date. Existing ships do not come under Annex IV until five years later – September 27, 2008.

The confusion gets worse. A major revision to Annex IV was adopted on April 1, 2004. This amendment enters into force on 1 August 2005. The IMO has recommended that Member States apply the revised Annex IV upon entry into force of the existing Annex IV. However, it also recommended that, during the transition period (from September 27, 2003 until August 1, 2010) Member States not apply, for purposes of port state control or for punitive measures, requirements of the existing Annex IV to those ships that will be exempted from application of revised Annex IV.

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The end result internationally is that there are three versions of Annex IV: (a) the original 1973 version that never came into effect; (b) the existing 2000 version that is technically in effect, but whose enforcement is being soft-pedaled; and (c) the revised 2004 version that officially comes into effect on August 1, 2005, but which the IMO recommends be implemented early by the Member States.

Annex IV consists of regulations regarding discharge of sewage into the sea, shipboard equipment and systems for control of sewage discharge, provision of facilities at ports and terminals for reception of sewage, and requirements for survey and certification of ships for compliance with the regulations. It also provides for an International Sewage Pollution Prevention (ISPP) Certificate to be issued by or on behalf of flag administrations to compliant ships under their jurisdiction. Ships are to have either: (1) an approved sewage treatment plant; (2) an approved sewage comminuting and disinfecting system [along with facilities for temporary storage of sewage when the ship is less than three miles from the nearest land]; or (3) an approved holding tank for retention of sewage until the ship returns to port. They are also to have standard sewage discharge connections to enable pipes of discharge facilities to be connected to the ships' sewage system.

A ship may discharge comminuted and disinfected sewage at a distance of more than three nautical miles from the nearest land. A ship may discharge sewage that has not been comminuted and disinfected at a distance of more than twelve nautical miles from the nearest land. In either case, if the sewage has been stored in a holding tank, the sewage may not be discharged instantaneously but at a moderate rate when the ship is en route and proceeding at not less than four knots, with the rate of discharge to be approved by the flag administration. If the ship has an approved sewage treatment plant and the test results for the plant are laid down in the ship's ISPP Certificate, the above distance and underway restrictions do not apply so long as the effluent does not produce visible floating solids nor cause discoloration of the surrounding waters.

The U.S. Regimes

In the United States, confusion is at an especially high level. Depending on the type of ship and where it operates, a ship may be subject to a primary federal system; a special federal system applicable to southeast Alaska; state systems in Alaska, California, and Maine; and voluntary systems in Florida, Hawaii, and Washington State. In addition, even though the United States has not acceded to Annex IV, it has acknowledged the impact of the international regime. The U.S. Coast Guard promulgated guidelines for equivalent compliance by U.S. ships with Annex IV. These guidelines provide for issuance of a Statement of Voluntary Compliance to U.S. ships meeting the requirements of Annex IV. The Statement of Voluntary Compliance serves the legal purpose of an ISPP Certificate for clearance in ports of nations that are party to Annex IV.

Federal Programs

The Federal Water Pollution Control Act (FWPCA) provides for marine sanitation devices (MSDs) on vessels. The Environmental Protection Agency (EPA) is charged with establishing the standard of performance for MSDs. The U.S. Coast Guard is charged with promulgating regulations for design, construction, installation, and operation of MSDs. Operation on waters of the United States of a vessel with installed toilet facilities is prohibited unless the vessel is equipped with an operable approved MSD. The statute also allows the EPA, at the request of a state, to designate certain waters as “no discharge zones” if the state demonstrates the need for such protection and the existence of sufficient reception facilities in the vicinity.

Following complaints from environmental advocacy groups and various citizens about the rapidly increasing number of cruise ships operating in waters of southeast Alaska and the potential impact on the environment, Congress enacted a special sewage restriction applicable to cruise ships in these waters. Cruise ships authorized to carry 500 or more passengers operating in waters of the Alexander Archipelago or the Kachemak Bay National Estuarine Research Reserve are prohibited from discharging untreated sewage. Effluent standards have been established for treated sewage and graywater. Treated sewage or graywater may be discharged only if the cruise ship is underway at a speed of not less than six knots, the cruise ship is not less than one nautical mile from the nearest shore, the discharge complies with the applicable effluent standard, and the ship is not in a designated no discharge zone. Cruise ships must participate in a program for sampling and analysis of treated sewage and graywater and regularly certify to the Coast Guard that their effluent meets the applicable standards. The ships must also maintain a sewage and graywater discharge record book. Effluent discharges that are not in compliance with the applicable standards must be immediately reported to the Coast Guard. The ships are subject to unannounced inspections and ships that are not in compliance with the requirements may be denied entry into the applicable waters.

State Programs

Shortly after passage by the U.S. Congress of the special sewage restrictions applicable to certain waters of southeast Alaska, the State of Alaska adopted its own sewage control regime. For large passenger vessels, the state regime largely followed the federal provisions. The Alaska regime, though, adopted a less-stringent regime applicable to small passenger vessels. The duplicative state regime means that cruise ships operating in these waters must report to and are subject to inspections by two enforcement entities: the U.S. Coast Guard and the Alaska Department of Environmental Conservation (ADEC).

In 2003, California adopted a law prohibiting discharge of sewage sludge into California waters from any large passenger vessel. The term “sewage sludge” was borrowed from the EPA and is defined as solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. It is unclear what this law will accomplish, particularly since the agency assigned to run the program has yet to issue implementing regulations.

Also in 2003, Maine adopted legislation regulating graywater and blackwater discharges from commercial passenger vessels. Beginning January 1, 2006, a large commercial passenger vessel may discharge graywater or blackwater into coastal waters of Maine only if the discharge meets the standards that would be applicable under federal law for similar discharges of effluent in waters of southeast Alaska. The ship must maintain a discharge record book such as would be required for operations in Alaska and must also meet the sampling and reporting requirements.

Voluntary Programs

In 2000, the cruise industry and the State of Florida entered into a Memorandum of Understanding (MOU) establishing an environmental management program for cruise ships operating out of Florida ports. Among other things, the MOU provides that cruise ships will not discharge waste waters (sewage) in Florida territorial waters. Subsequently, similar MOUs were executed by the cruise industry with the States of Hawaii and Washington.

These voluntary arrangements have adopted the industry guidelines “Waste Management Practices and Procedures” as the standard to which the cruise ships will be held. The guidelines address waste minimalization and hazardous waste streams, in addition to sewage processing.

The Bottom Line

More and more people are being carried by more and more ships. Expectations for the cleanliness of water are continually rising, but unevenly so. As a result, the pressure on ship owners and operators to discharge only clean water continues to build. This is a messy problem that won't go away and will continue to require close attention by equipment manufacturers, ship builders, owners, operators, and crew. Confusion reigns and sewage happens.