

## **CMTS Environmental Stewardship Discussion Group**

July 16, 2012 from 1:00 - 2:00 pm

U.S. Department of Transportation

Room W24-101 (MARAD)

### **The Magic Pipe Epidemic: Combating illegal dumping of oily bilge water from vessels in Federal and international waters.**

**Guest Speakers:** LCDR Charles Fluke – U.S. Coast Guard  
Joseph Poux – U.S. Department of Justice  
Michael Carter – U.S. Maritime Administration

Background:

#### **1) What is an oil-water separator (OWS)?**

Oil-water separators are flow-through devices designed to remove free and unemulsified oils from water, i.e., to separate oil from bilge water before the bilge water is discharged overboard.

The bilge is the lowest compartment on a ship, where the two sides meet at the keel. Bilge water is the water that collects in this area. Bilge water must be pumped out to prevent the bilge from becoming too full and threatening to sink the ship.

A principal source of water pollution in the shipping industry (and addressed by the MARPOL Protocol) is the oil sludge and oil-contaminated water generated by virtually all large ships. The normal operation of an ocean-going ship produces a significant quantity of oil sludge because of the processing of fuel oil and lubricating oil. In addition, the engineering machinery of virtually all ocean-going vessels produces large amounts of oily water that collects in a ship's bilges and which must be discharged for the ship to remain seaworthy. The oil sludge and oil-contaminated bilge water are collected in tanks designed to hold the oily wastes for proper disposal.

#### **2) How does it work?**

Oil-water separators rely on the differential in specific gravity between oil and water to do the separation. Based on that design criterion, most of the suspended solids will settle to the bottom of the separator as a sediment layer; the oil will rise to top of the separator, and the wastewater will be the middle layer between the oil on top and the solids on the bottom.

#### **3) Why do we need it?**

By international agreement under the MARPOL convention, most commercial vessels need to be fitted with an oil-water separator to remove oil contaminants before bilge water is pumped overboard. Recently it has become evident that oil-water separators have not been as effective as had been assumed, and alleged improper operation of this equipment by crewmembers (sometimes called the magic pipe) has resulted in criminal prosecutions.

MARPOL 73/78 is the International Convention for the Prevention of Pollution from Ships, 1973 as modified by the Protocol of 1978. It was designed to minimize pollution of the seas, including dumping

oil and exhaust pollution. Its stated object is to preserve the marine environment through the complete elimination of pollution by oil and other harmful substances and the minimization of accidental discharge of such substances.

#### **4) What is a “Magic Pipe”?**

A magic pipe is a surreptitious change to a ship's oil-water separator, or other waste-handling equipment, which allows waste liquids to be discharged in contravention of maritime pollution regulations. The pipe may be improvised, aboard ship, from available hoses and pumps, to discharge large volumes of waste directly into the sea. As ships are often required to keep records of waste and its treatment, magic pipe cases often involve falsification of these records.

#### **5) How do we know when a ship is violating MARPOL?**

The Coast Guard is authorized to conduct inspections to determine whether vessels in US waters are in compliance with APPS, MARPOL and other applicable federal regulations. In connection with these inspections, the Coast Guard is authorized to and does examine the vessel's Oil Record Book (ORB) to determine, among other things, whether the vessel had operable pollution prevention equipment, whether the vessel posed a danger to U.S. ports and waters, and whether the vessel had discharged oily waste in violation of the law [33 C.F.R. §§ 151.23(a)(3) and 151.7.3(c)]. In conducting these inspections, the Coast Guard relies on the vessel's ORB and statements of the crew to determine whether the vessel's crew was properly handling the vessel's oily waste [33 C.F.R. § 151.23(c)].

Some indications of recurring violations may be an ORB entry in which the amount of bilge water or sludge processed exceeds the rated capacity of the pollution prevention equipment that is indicated on the IOPP; ORB entries that utilize the wrong code for the task performed; ORB entries that are not in chronological order; missing pages in the ORB or entries that are concealed by White-Out; repetitive entries that are indicative of the falsification of ORB activities; significant variance among ORB inspection entries recording waste oil, sludge, bilge, and other tank levels; and recorded quantities of oily bilge water pumped to holding or processed by the oil-water separator directly from the bilge wells that do not compare to observed conditions within the machinery space.