

Attachment 1

Cruise Industry Waste Management Practices/Procedures

Attachment to ICCL Standard E-1-01 (Revision 1)**CRUISE INDUSTRY
WASTE MANAGEMENT
PRACTICES AND PROCEDURES**

(REVISED: December 1, 2001)

The cruise industry is dedicated to preserving the marine environment and oceans upon which our ships sail. As a stated industry standard, ICCL members have adopted aggressive programs of waste minimization, waste reuse and recycling, and waste stream management set forth in the following. In addition ICCL members are working in a number of areas to identify and implement new technologies in order to improve the environmental performance of their ships. ICCL member lines currently have agreed to utilize waste management practices and procedures, which meet or exceed the stringent standards as set forth in international treaties and applicable U.S. laws.

Introduction

The cruise industry is inextricably linked to the environment. Our business is to bring people to interesting places in the world, over the water. Recognizing the future of the industry depends on a clean and healthy environment, cruise industry senior management is committed to stewardship of the environment and establishing industry practices that will make ICCL member cruise ship operators leaders in environmental performance.

This document outlining member line practices has been developed under the auspice of the industry's professional organizations, the International Council of Cruise Lines (ICCL), the Florida Caribbean Cruise Association (FCCA), and the Northwest Cruise Ship Association (NWCA). The purpose of this document is to set forth cruise industry waste management practices and procedures that ICCL member cruise vessel operators have agreed to incorporate into their respective Safety Management Systems.

In the development of industry practices and procedures for waste management, the members of the International Council of Cruise Lines have endorsed policies and practices based upon the following fundamental principles:

- Full compliance with applicable laws and regulations
- Maintaining cooperative relationships with the regulatory community
- Designing, constructing and operating vessels, so as to minimize their impact on the environment
- Embracing new technology
- Conserving resources through purchasing strategies and product management
- Minimizing waste generated and maximize reuse and recycling
- Optimizing energy efficiency through conservation and management
- Managing water discharges
- Educating staff, guests and the community.

Discussion

Just as on shore, ship operations and passengers generate waste as part of many daily activities. On ships, waste is generated while underway and in port. Because ships move, the management of these wastes becomes more complicated than for land-based activities, as the facilities and laws change with the location of the ship. Facilities on the ships and management practices must be designed to take into account environmental laws and regulations around the world. Moreover, because waste management ultimately becomes a local activity, the local port infrastructure, service providers, and local waste disposal vendors are factors in the decision-making processes.

On an international level, environmental processes are an important part of the International Maritime Organization's (IMO's) policies and procedures for the maritime industry. ICCL member lines have agreed to incorporate environmental performance into Safety Management Systems (SMS) and MARPOL mandated Waste Management Manuals. Under agreements and laws specific to many nations, these programs are routinely reviewed by Port States to ensure compliance. For example, in the United States, the US Coast Guard has jurisdiction over environmental matters in ports and waterways and conducts passenger ship examinations that include review of environmental systems, SMS documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book.

The industry effort to develop waste management practices and procedures has focused on the traditional high volume wastes (garbage, graywater, blackwater, oily residues (sludge oil) and bilge water), pollution prevention, and the small quantities of hazardous waste produced onboard. In the process, ICCL members have shared waste management strategies and technologies, while focusing on a common goal of waste reduction.

The process of waste reduction includes waste prevention, the purchasing of products that have recycled content or produce less waste (e.g. source reduction), and recycling or reuse of wastes that are generated. The ultimate goal is to have the waste management culture absorbed into every facet of cruise vessel operation. A fully integrated system beginning with the design of the vessel should address environmental issues at every step.

Management practices for waste reduction should start before a product is selected. Eco-purchasing and packaging are vital to the success of any environmental program, as are strategies to change packaging, processes and management to optimize the resources used.

The commitment of the industry to this cooperative effort has been quite successful, as companies have shared information and strategies.

Industry Standard Waste Handling Procedures

ICCL member lines have agreed that hazardous wastes and waste streams onboard cruise vessels will be identified and segregated for individual handling and management in accordance with appropriate laws and regulations. They have further agreed, hazardous wastes will not be discharged overboard, nor be commingled or mixed with other waste streams.

- A. **Photo Processing, Including X-Ray Development Fluid Waste:** *ICCL member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations or by treating all photo processing and x-ray development fluid waste (treated or untreated) as a hazardous waste and landing ashore in accordance with RCRA requirements.*

There are several waste streams associated with photo processing operations that have the potential to be regulated under the Resource Conservation and Recovery Act (RCRA). These waste streams include spent fixer, spent cartridges, expired film and silver flake.

Photographic fixer removes the unexposed silver compounds from the film during the developing process. The spent fixer can have as much as 2000-3000 parts per million (ppm) of silver. Silver bearing waste is regulated by RCRA as a hazardous waste if the level of silver exceeds 5 ppm as determined by the Toxicity Characteristic Leaching Procedure (TCLP) test.

Silver recovery units may be used to reclaim the silver from the used fixer waste stream. There are two types of recovery units. These are active (with electricity) and passive (without electricity) units. The active unit uses electricity to plate silver onto an electrode. The passive unit uses a chemical reaction between steel wool and silver to remove most of the silver from solution. Utilizing the best available technology, the equipment currently onboard ICCL member cruise ships is conservatively estimated to reduce the silver content of this effluent below 4 mg/l (milligrams/l or ppm)

The effluent from the silver recovery process must be tested before it can be discharged as a non-hazardous waste to be further diluted by addition to the ship's gray water. After the photographic and X-ray development fluids are treated for the removal of silver, the treated, non-hazardous effluent is then blended with the ship's graywater. In general, assuming that an entire week's photographic and X-ray development treated effluent stream is introduced into a single day's accumulation of graywater, the concentration of silver in the resulting mixture would be less than one-half of one part per billion (<0.5 micrograms/liter). Such mixing is not done on a weekly basis. Even at this assumed extreme however, it is expected that the silver concentration would only be approximately one fifth (1/5) the surface water quality standard for predominately marine waters specified in one state where cruise ships operate. When mixing is done on a daily basis it is evident that the resulting immediate concentration would be almost an order of magnitude less than this (1/50 of the current surface water quality standard). Additionally, it is evident that total mass of any discharges of silver would be negligible. Member lines have agreed that this discharge would be carried out only while their vessels are underway. Also, it should be noted that these estimates were carried out considering the largest cruise ships in service, which would produce the greatest amount of waste.

Handling Method 1 Employed by Member Lines:

Treat used photographic and x-ray development fluids to remove silver for recycling.

Verify that the effluent from the recovery unit is less than 5 parts per million (ppm) silver, as measured by EPA-approved methodology.

After treatment, the residual waste stream fluid is non-hazardous and landed ashore or discharged in accordance with the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and other prevailing regulations.

Handling Method 2 Employed by Member Lines:

Used photographic and x-ray development fluids, either treated or untreated, may be assumed to be a hazardous waste. In this event, they are landed ashore in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA).

- B. Dry-cleaning waste fluids and contaminated materials:** *ICCL member lines have agreed to prevent the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment.*

Shipboard dry cleaning facilities use a chlorinated solvent called perchlorethylene (also known as PERC or tetrachloroethylene) as a dry cleaning fluid. This is the approved dry cleaning solvent for these units. Operators must receive specific required training for the correct use of this chemical and its associated precautions. This solvent should be used in accordance with all safety procedures including appropriate personal protective equipment (PPE).

The dry cleaning units produce a small volume waste from condensate, the bottoms of the internal recovery stills, waste products from button and lint traps, spent perchloroethylene and filter media. This waste is comprised of dirt, oils, filter material, and spent solvent. Each ship utilizing these dry-cleaning units produces approximately two pounds of waste material weekly. However, the amounts may vary greatly by season and passenger load. This material is classified as hazardous waste under RCRA and must be handled accordingly.

Handling Method 1 Employed by Member Lines:

Perchloroethylene (PERC) and other chlorinated dry-cleaning fluids, contaminated sludge and filter materials are hazardous waste and landed ashore in accordance with the requirements of RCRA.

- C. Print Shop Waste Fluids:** *ICCL member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.*

Print shop waste may contain hazardous waste. Printing solvents, inks and cleaners all may contain hydrocarbons, chlorinated hydrocarbons, and heavy metals that can be harmful to human and aquatic species. Recent advances in printing technology and substitution of chemicals that are less hazardous reduces the volume of print shop waste generated and reduces the impact of these waste products.

ICCL member lines have agreed to utilize, whenever possible, printing methods and printing process chemicals that produce both less volume of waste and less hazardous waste products, that shipboard printers will be trained in ways to minimize printing waste generated, and that alternative printing inks such as soy based, non-chlorinated hydrocarbon based ink

products will be used whenever possible. The member lines have further agreed that all print shop waste including waste solvents, cleaners, and cleaning cloths will be treated as hazardous waste, if such waste contains chemical components that may be considered as hazardous by regulatory definitions, and that all other waste may be treated as non-hazardous.

Handling Method 1 Employed by Member Lines:

When using traditional or non-soy based inks and chlorinated solvents, all print shop waste is treated as hazardous, and discharged ashore in accordance with RCRA.

Handling Method 2 Employed by Member Lines:

Shipboard printing processes use non-toxic based printing ink such as soy based, non-chlorinated solvents, and other non-hazardous products to eliminate hazardous waste products.

- D. Photo Copying and Laser Printer Cartridges:** *ICCL member lines have agreed to initiate procedures so as to maximize the return of photocopying and laser printer cartridges for recycling, and in any event, have agreed that these cartridges will be landed ashore.*

Increased use of laser and photo copying equipment on shore as well as onboard ship results in the generation of increased volumes of waste cartridges, inks, and toner materials. ICCL member lines have agreed to use only such inks, toners and printing/copying cartridges that contain non-hazardous chemical components, and that none of these cartridges or their components should be disposed of by discharge into the marine environment. In recognition of the member lines' goal of waste minimization, they have further agreed these cartridges should, whenever possible, be returned to the manufacturer for credit, recycling, or for refilling.

Handling Method Employed by Member Lines:

ICCL member lines have agreed that wherever possible, photo copying and laser printer cartridges will be collected, packaged and returned for recycling and when this is not possible, that these materials will not be discharged into the sea or other bodies of water but will be handled as other shipboard waste that is landed ashore for further disposal.

- E. Unused And Outdated Pharmaceuticals:** *ICCL member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed in accordance with legal and environmental requirements.*

In general ships carry varying amounts of pharmaceuticals. The pharmaceuticals carried range from over-the-counter products such as anti-fungal creams to prescription drugs such as epinephrine. Each ship stocks an inventory based on its itinerary and the demographics of its passenger base. ICCL member lines have agreed that all pharmaceuticals will be managed to ensure that their efficacy is optimized and that disposal is done in an environmentally responsible manner.

ICCL member lines have further agreed that when disposing of pharmaceuticals, the method used will be consistent with established procedures, and that pharmaceuticals and medications which are off specification or which have exceeded their shelf-life, and stocks that are unused and out of date, cannot be used for patients and therefore will be removed from the ship. Further, each regulatory jurisdiction has a posting of listed pharmaceuticals that must be

considered hazardous waste once the date has expired or the item is no longer considered good for patient use.

Through onboard management of the medical facility, ICCL member lines have agreed that stocks of such listed pharmaceuticals are returned to the vendor prior to date of expiration. Pharmaceuticals that are being returned and which have not reached their expiration date are shipped using ordinary practices for new products.

Safety and Health

ICCL member lines have agreed that all expired listed pharmaceuticals will be handled in accordance with established procedures and all personnel handling this waste will receive appropriate training in the handling of hazardous materials. As guidance, the US Environmental Protection Agency (EPA) has issued a report that clarifies the fact that residuals, such as epinephrine, found in syringes after injections are not considered an acutely hazardous waste by definition and may be disposed of appropriately in sharps containers. Member lines have agreed that all Universal Precautions will be adhered to when handling sharps.

Handling Method 1 Employed by Member Lines:

Establish a reverse distribution system for returning unexpired, unopened non-narcotic pharmaceuticals to the original vendor.

Handling Method 2 Employed by Member Lines:

Appropriately destroy narcotic pharmaceuticals onboard ship in a manner that is witnessed and recorded.

Handling Method 3 Employed by Member Lines:

Land listed pharmaceuticals in accordance with local regulations. Listed pharmaceuticals are a hazardous waste having chemical compositions which prevent them from being incinerated or disposed of through the ship's sewer system. Listing of such pharmaceuticals may vary from state to state.

Handling Method 4 Employed by Member Lines:

Dispose of other non-narcotic and non-listed pharmaceuticals through onboard incineration or landing ashore.

F. Fluorescent And Mercury Vapor Lamp Bulbs: *ICCL member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable disposal.*

The recycling of fluorescent lights and high intensity discharge (HID) lamps is a proven technology capable of reliably recovering greater than 99 percent of the mercury in the spent lights. This is done by using a crush-and-sieve method. In this process, the spent tubes are first crushed and then sieved to separate the large particles from the mercury containing phosphor powder. The phosphor powder is collected and processed under intense heat and pressure. The mercury is volatilized and then recovered by condensation. The glass particles are segregated and

recycled into other products such as fiberglass. Aluminum components are also recycled separately.

Storage and handling of used lights pose no compatibility problems; nevertheless, storage and shipment of the glass tubes is best done keeping the glass tubes intact. These items are classified as "Universal Waste" when they are shipped to a properly permitted recycling facility; as such, testing is not required.

Safety and Health

Fluorescent and Mercury Vapor lamps contain small amounts of mercury that could potentially be harmful to human health and the environment. To prevent human exposure and contamination of the environment, ICCL member lines have agreed that these lamps will be handled in an environmentally safe manner. Recycling of mercury from lamps and other mercury containing devices is the preferred handling method and is encouraged by various states. The recycling of fluorescent lights and HID lamps keeps potentially hazardous materials out of landfills, saves landfill space and reduces raw materials production needs.

Handling Method Employed by Member Lines:

Fluorescent and mercury vapor lamps are collected and recycled or landed for recycling or disposal in accordance with prevailing laws and regulations.

- G. Batteries:** *ICCL member lines have agreed to prevent the discharge of spent batteries into the marine environment.*

If not properly disposed of, spent batteries may constitute a hazardous waste stream. Most of the large batteries are on tenders and standby generators. Small batteries used in flashlights and other equipment and by passengers, account for the rest. There are four basic types of batteries used.

Lead-acid batteries – These are used in tenders and standby generators. They are wet, rechargeable, and usually six-celled. They contain a sponge lead anode, lead dioxide cathode, and sulfuric acid electrolyte. The electrolyte is corrosive. These batteries require disposal as a hazardous waste, unless recycled or reclaimed.

Lead-acid batteries use sulfuric acid as an electrolyte. Battery acid is extremely corrosive, reactive and dangerous. Damaged batteries will be drained into an acid-proof container. A damaged and leaking battery is then placed in another acid-proof container, and both the electrolyte and the damaged battery placed in secure storage for proper disposal as a hazardous waste.

Nickel-cadmium (NiCad) batteries – These are usually rechargeable, and contain wet or dry potassium hydroxide as electrolyte. The potassium hydroxide is corrosive and the cadmium is a characteristic hazardous waste. Therefore, NiCad batteries will be disposed of as hazardous waste, unless recycled or reclaimed.

Lithium batteries – These are used as a power source for flashlights and portable electronic equipment. All lithium batteries will be disposed of as hazardous waste, or sent out for reclamation.

Alkaline batteries – These are common flashlight batteries and are also used in many camera flash attachments, cassette recorders, etc. They should be recycled, properly disposed or reclaimed.

Handling Method Employed by Member Lines:

Spent batteries are collected and returned for recycling and/or disposal in accordance with prevailing regulations. Discarded batteries are isolated from the refuse waste stream to prevent potentially toxic materials from inappropriate disposal. The wet-cell battery-recycling program is kept separate from the dry battery collection process. Intact wet-cell batteries are sent back to the supplier. Dry-cell batteries are manifested to a licensed firm for recycling.

H. Bilge and Oily Water Residues: *ICCL member lines have agreed to meet and exceed the international requirements for removing oil from bilge and wastewater prior to discharge.*

The area of the ship at the very bottom of the hull is known as the bilge. The bilge is the area where water collects from various operational sources such as water lubricated shaft seals, propulsion system cooling, evaporators, and other machinery. All engine and machinery spaces also collect oil that leaks from machinery fittings and engine maintenance activities. In order to maintain ship stability and eliminate potential hazardous conditions from oil vapors in engine and machinery spaces, the bilge spaces should be periodically pumped dry. In discharging bilge and oily water residues, both international regulations (MARPOL) and United States regulations require that the oil content of the discharged effluent be less than 15 parts per million and that it not leave a visible sheen on the surface of the water.

All ships are required to have equipment installed onboard that limits the discharge of oil into the oceans to 15 parts per million when a ship is en route and provided the ship is not in a special area where all discharge of oil is prohibited. Regulations also require that all oil or oil residues, which cannot be discharged in compliance with these regulations, be retained onboard or discharged to a reception facility. The equipment and processes implemented onboard cruise ships to comply with these requirements are complex and sophisticated.

The term “*en route*” as utilized in MARPOL (73/78) Regulation 9(b) is taken to mean while the vessel is underway. The U.S. Coast Guard has informed ICCL that it agrees with this meaning of “*en route*.”

In accordance with MARPOL (73/78) Regulation 20, ICCL member lines have agreed that every ship of 400 gross tons and above shall be provided with an oil record book which shall be completed on each occasion whenever any of numerous specified operations take place in the ship and that operations include:

- a. Ballasting or cleaning of fuel oil tanks,
- b. Discharge of dirty ballast or cleaning water from the fuel oil tanks above,
- c. Disposal of oily residues,
- d. And discharge of bilge water that accumulated in machinery spaces.

Requirements regarding the keeping of an Oil Record Book as well as the form of the Oil Record Book are also found in MARPOL and in U.S. Coast Guard regulations (33CFR151).

Handling Method Employed by Member Lines:

Bilge and oily water residue are processed prior to discharge to remove oil residues, such that oil content of the effluent is less than 15 ppm as specified by MARPOL Annex 1.

- I. **Glass, Cardboard, Aluminum and Steel Cans:** *ICCL member lines have agreed to eliminate, to the maximum extent possible, the disposal of MARPOL Annex V wastes into the marine environment through improved reuse and recycling opportunities. They have further agreed that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.*

Management of shipboard generated waste is a challenging issue for all ships at sea. This is true for cruise vessels, other commercial vessels, military ships, fishing vessels and recreational boats. Waste products in earlier days were made from natural materials and were mostly biodegradable. Today's packaging of food and other products presents new challenges for waste management. A large cruise ship today can carry over three thousand passengers and crew. Each day, an average cruise passenger will generate two pounds of dry trash and dispose of two bottles and two cans.

A strategy of source reduction, waste minimization and recycling has allowed the cruise industry to significantly reduce shipboard generated waste. To attain this, ICCL member lines have agreed to adopt a multifaceted strategy that begins with waste minimization to decrease waste from provisions brought onboard. This means purchasing in bulk, encouraging suppliers to utilize more efficient packaging, reusable packaging, and packaging materials that are more environmentally friendly—those that can be more easily disposed of or recycled. In fact, through this comprehensive strategy of source reduction, total waste on passenger vessels has been reduced by nearly half over the past ten years.

Another important component of the industry's waste reduction strategy is product or packaging recycling. Glass, aluminum, other metals, paper, wood and cardboard are, in most cases, recycled.

Handling Method Employed by Member Lines:

MARPOL Annex V ship waste is minimized through purchasing practices, reuse and recycling programs, landing ashore and onboard incineration in approved shipboard incinerators. Any Annex V waste that is discharged at sea will be done in strict accordance with MARPOL and any other prevailing requirements.

- J. **Incinerator Ash:** *ICCL member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities, and that the discharge of incinerator ash containing hazardous components will be prevented through a program of waste segregation and periodic ash testing.*

Incinerator ash is not normally a hazardous waste. Through relatively straightforward waste management strategies, items that would cause the ash to be hazardous are separated from the waste stream and handled according to accepted hazardous waste protocols. In general, source segregation for waste streams is foundational for onboard waste management and is incorporated into the waste management manual required by MARPOL. Waste management for onboard waste streams include the following: source reduction, minimization, recycling,

collection, processing and discharge ashore. This allows the incinerator to be used primarily for food waste, contaminated cardboard, some plastics, trash and wood.

Member lines have agreed that incinerator ash will be tested at least once quarterly for the first year of operation to establish a baseline and that testing may then be conducted once a year. The member lines have further agreed that a recognized test procedure will be used to demonstrate that ash is not a hazardous waste. A recognized test procedure includes the following metals as indicators for toxicity - arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Special attention is placed on the removal of batteries from the incinerator waste stream. The use of incinerators saves landfill space and prevents the build up of material onboard that could become the breeding ground for insects, rodents and other vermin.

Handling Method Employed by Member Lines:

Proper hazardous waste management procedures are to be instituted onboard each ship to assure that waste products, which will result in a hazardous ash, are not introduced into the incinerator. Non-hazardous incinerator ash may be disposed of at sea in accordance with MARPOL Annex V. Ash identified as being hazardous is disposed of ashore in accordance with RCRA.

K. Wastewater reclamation

Because of the amounts of fresh water involved, and its restricted availability onboard ship (all fresh water must be either purchased or generated onboard), fresh water is a valuable commodity. Therefore, water management is extremely important and takes the form of both minimizing water usage and the potential reclamation and reuse of water for non-potable purposes. Many ICCL companies are researching new technology and piloting graywater treatment systems onboard their vessels. ICCL member operators also take numerous steps in onboard water management. Water management techniques include:

- a. Use of technical water (for example: air conditioning condensate) where possible.
- b. Use of water recovery systems (for example: filtering and reuse of laundry water – last rinse use for first wash).
- c. Reclamation and reuse as technical water (flushing toilets, laundry, open deck washing) of properly treated and filtered wastewaters.
- d. Active water conservation (for example: use of reduced flow showerheads, vacuum systems for toilets, vacuum food waste transportation and laundry equipment that utilizes less water).

L. Graywater: *ICCL member lines have agreed to discharge graywater only while the ship is underway and proceeding at a speed of not less than 6 knots; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations.*

The term graywater is used on ships to refer to wastewater that is generally incidental to the operation of the ship. The International Maritime Organization (IMO) defines graywater as including drainage from dishwasher, shower, laundry, bath and washbasin drains. The US Clean Water Act (formally know as the Federal Water Pollution Control Act) includes galley, bath and shower water in its definition of graywater. The US regulations implementing this act do not

include a further definition of gray water. However, the regulations do include a provision that exempts all of the wastewater included in the IMO definition and other discharges incidental to the operation of a ship from the Clean Water Act's permitting program (formally known as the National Pollution Discharge Elimination System (NPDES) program). Finally, the US Coast Guard regulations include provisions that essentially combine the two definitions from the IMO and the Clean Water Act. None of the definitions of graywater include blackwater (discussed below) or bilgewater from the machinery spaces. Recent U.S. Legislation places limits on the discharge of graywater in the Alaska Alexander Archipelago.

Handling Method Employed by Member Lines:

Graywater is discharged only while ships are underway and proceeding at a speed of not less than 6 knots, in recognition that dispersal of these discharges is desirable and that mixing of these waters, which are discharged approximately 10-14 feet below the surface, by the action of the propellers and the movement of the ship, provides the best dispersal available.

M. Blackwater: *ICCL member lines have agreed to discharge blackwater only while the ship is underway traveling at a speed of not less than 6 knots and in accordance with applicable regulation, and that blackwater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law, except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of blackwater will comply with all applicable laws and regulations.*

Waste from toilets, urinals, medical sinks and other similar facilities is called "blackwater." Most cruise ships separate blackwater from other wastewaters before processing and/or discharge.

Treated blackwater is processed using an approved "Marine Sanitation Device" (MSD) that is intended to prevent the discharge of untreated or inadequately treated blackwater. Marine Sanitation Devices use physical, chemical and/or biological processes to allow effluent from the process to be discharged with characteristics that are similar to effluents from conventional, shoreside wastewater treatment plants.

All MSDs are certified and approved by the US Coast Guard. The US Coast Guard consults with the Environmental Protection Agency in evaluating processes used to certify MSDs.

The US Coast Guard regularly inspects MSDs while onboard ships for proper operation during their Control Verification Examinations. If the Coast Guard has reason to believe that an MSD is not properly operating, it can require the vessel owner to have the effluent sampled and analyzed by a qualified wastewater laboratory, with the results reported to the Coast Guard.

Handling Method 1 Employed by Member Lines:

Blackwater is treated by a properly working, approved Marine Sanitation Device prior to discharge. As agreed with and required by the U.S. Coast Guard, MSDs are tested periodically to ensure continued operation in accordance with certification standards.

Handling Method 2 Employed by Member Lines:

Untreated blackwater is discharged into the ocean at a distance greater than 12 nautical miles from any land, coral reef or designated sensitive area in accordance with MARPOL or such other distance as agreed to with authorities having jurisdiction

N. Advanced Wastewater Treatment Systems:

To improve environmental performance, cruise lines are testing and installing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing standards for secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

O. Training and Educational Materials

Training is an important and ongoing part of every position and tasking onboard cruise ships. Not only is training necessary for the safe and economical operation of a ship, it is required by numerous international conventions and flag state regulations. The International Convention on Standards of Training Certification and Watchkeeping (STCW) for example, sets forth requirements for knowledge, experience and demonstrated competency for licensed officers of the deck and engineering departments and for ratings forming part of a navigation or engineering watch. These detailed requirements address not only the navigation of the ship but also the proper operation of the shipboard machinery and knowledge of and ability to assure compliance with the environmental protection requirements of MARPOL and the safety regulations of The International Convention on Safety of Life at Sea (SOLAS). SOLAS also requires that the ship's training manual (which contents are prescribed by regulation) be placed in the crew messes and recreation rooms or in individual crew cabins.

ICCL member lines have developed programs that raise the level of environmental awareness on the part of both the passengers and the crew. Each ship's crew receives training regarding shipboard safety and environmental procedures. Advanced training in shipboard safety and environmental management procedures is provided for those directly involved in these areas. Those directly responsible for processing wastes are given specific instruction in their duties and responsibilities and in the operation of the various equipment and waste management systems. Specific actions that our member lines have taken to train employees and increase passenger awareness include:

- a. Announcements over the public address system and notices in ship newsletters that caution against throwing any trash overboard,
- b. Signage and colorful posters placed in crew and passenger areas encouraging environmental awareness and protection,
- c. Safety and environmental information booklets in crew cabins and crew lounges,
- d. Regular meetings of ship safety and environmental committees consisting of officers and crew from all departments to review methods of improving performance, including better and more effective environmental practices.

STCW, SOLAS and the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) require that training be fully documented. Individual training is documented in each crewmember's file. Ship training exercises, such as fire drills and emergency response exercises, are documented in the appropriate ship's logs. All of these

training documents are required to be available for oversight examination by both the ship's flag state inspectors and by port state authorities such as the United States Coast Guard.

Placards warning of the prohibition of the discharge of oil are posted on all ships operating in the navigable waters of the United States as required by U.S. Coast Guard regulations (33CFR155.450). Additionally, as part of required shipboard waste management plans, both Coast Guard regulations (33CFR151.59) and MARPOL (Annex V Regulation 9) require the posting of placards that notify the passengers and the crew of the disposal requirements for garbage. These placards are to be written in the official language of the State whose flag the ship is entitled to fly and also in English or French if neither of these is the official language. Once again, oversight of compliance with these requirements is conducted by ISM audits and frequent inspections by flag states and the United States Coast Guard.

The Safety of Life at Sea Convention mandates compliance with the ISM Code. This comprehensive Code requires that each vessel operating company and each vessel participate in a very strictly defined management program, under both internal and external audit and regulatory oversight, that sets forth detailed procedures for assuring compliance with safety, environmental protection, emergency response and training mandates.

Equivalent equipment, practices and procedures

ICCL member lines have agreed that the use of equivalent or other acceptable practices and procedures shall be communicated to ICCL. As appropriate, such practices and procedures shall be included as a revision to this document. As an example, when improved systems for treating blackwater and graywater are perfected, shown to meet the requirements for MSDs and accepted by appropriate authorities for the treatment of graywater, the new systems and associated technology will be included together with their impact on the current standard of discharging graywater only while underway.

Attachment 2

Public Testimony before the Task Force



**Testimony before the California Cruise Ship Environmental Task Force
Public Input Session
May 3, 2001
Sausalito, CA**

Good morning, my name is Kira Schmidt. I am a campaign director with Bluewater Network, a national environmental group based in San Francisco that works to fight environmental damage caused by the oil, shipping and motorized recreation industries. I want to thank you for holding these public input sessions and for giving me this opportunity to voice our concerns about cruise ship pollution in California.

We were the sponsor of AB 2746, the legislation passed last year which created the California Cruise Ship Environmental Task Force. We sponsored the legislation because we believe that the waste management practices of the cruise industry are inadequately monitored by regulatory agencies; and that cruise ships are a significant and growing source of pollution.

Cruise ships generate enormous volumes of waste. Yet cruise ships are exempt from key regulations, including monitoring and reporting requirements, that govern other industries. As a result, there is inadequate monitoring and oversight of what cruise ships do with the huge amounts of waste they produce.

Furthermore, the cruise industry has a history of polluting the seas. The US General Accounting Office recently reported that, from 1993 to 1998, cruise ships were responsible for 87 confirmed cases of illegal discharges of oil, garbage, and hazardous wastes into US waters. Twelve of these cases occurred in California. The Associated Press recently reported that from 1991 through 2000, cruise ships were suspected of causing 172 spills, based on their query of the Coast Guard pollution database.

This series of pollution incidents is of particular concern in light of the industry's rapidly growing presence in California's coastal waters. The cruise industry grew by 67% in California from 1990-1998 based on the number of total embarkations. Last year, 37 cruise ships plied California waters, making 600 calls at our ports. The industry plans to introduce more than 50 new ships in the next few years, up from the current number of approximately 145.

Many of our ports are actively lobbying for amendment of the Passenger Vessel Services Act, which, if successful, would result in even more explosive growth in cruise ship traffic in California. Without such amendments, cruise traffic in San Francisco was expected to increase by 72% from 1996 to 2003; with its amendment, traffic would increase there by 288%. We recommend that the TASK FORCE monitor any policy developments on this front, and include in their assessment an examination of the additional environmental impacts of the cruise industry in California if the PSA were to be amended.

The San Francisco Port Commission estimates that the number of cruise ships calling on San Francisco is likely to increase by 50% in the next two years alone, from the current 40 to 60 by 2003. And that is before the new cruise ship terminal which is being constructed in San



Francisco at Pier 30-32 is scheduled for completion in 2004. Cruise companies are also actively seeking access to Monterey Bay.

With the significant increase in the number of cruise ships in CA waters, and given that pollution from cruise ships has to date been inadequately monitored, cruise industry waste discharges and management practices should be better monitored and assessed by regulatory agencies.

The formation of the Task Force comes at a time when several other efforts are underway to better understand and control the environmental impacts of cruise ships, so we've recommended that the Task Force establish formal relationships and communications with the agencies overseeing these other processes, particularly the Alaska Dept of Environmental Conservation, the Florida Dept of Environmental Protection, the US EPA Office of Water, and the Dept. of Justice Environmental Crimes Division. It will be important for this Task Force to learn from the experiences and lessons of these processes, which have already been underway for some time.

For example, the Alaska Cruise Ship Initiative, coordinated by the Alaska Dept of Environmental Conservation (DEC), has generated a significant amount of information on cruise ship wastewater discharges and air emissions. It is particularly important that the Task Force be informed of the results of monitoring and sampling in Alaska, because most of the cruise ships that operate in Alaska also operate in California. Therefore, it is crucial that the Task Force obtain timely information about which ships have proven to have compliance problems in the areas of air or wastewater discharges.

DEC and EPA conducted monitoring of visible emissions from cruise ships last summer. Fifteen percent were in violation of state and federal clean air rules. They will be monitoring again this summer. The Task Force should collect timely and detailed information from DEC on which ships have been cited. The Task Force can then use this information to advise CARB to target these ships when conducting their inspections of cruise ships' visible emissions in California ports.

Last year's sampling also identified exceedences of water quality standards for several heavy metals, mercury and phthalates as well as extremely high levels of conventional pollutants. Those ships which have shown particularly high levels of bacteria and pollutants in the sewage and graywater samples taken in Alaska last summer and again this coming summer should be targeted for solicitation of additional information from the Task Force.

This Task Force should request that cruise ships conduct samples of graywater and sewage discharges, submit copies of engine room logbooks, and be targeted for more detailed inspection by the Coast Guard during their routine examinations. When making its recommendations to the CA legislature regarding needed regulatory improvements, we strongly recommend that the Task Force use Senator Murkowski's legislation passed by Congress last year and the state legislation emerges from the current session of the Alaska Legislature as a model. The Task Force should look to the outcomes of Alaska's legislative and regulatory improvements as instructive of what should be done here in California.



We've also recommended that the Task Force look to the Florida Dept of Environmental Protection, or DEP for guidance on cruise ship hazardous waste management. In 1999, DEP initiated a dialog with the cruise industry after finding a pattern of violations of hazardous waste management regulations by cruise ships, and have since been developing a hazardous waste checklist for the Coast Guard to incorporate into its routine ship inspections. It is my understanding that the Coast Guard will be adding these hazardous waste inspections into its cruise ship examinations in California as well; we would urge the Task Force to ensure that the checklist is amended if necessary to incorporate any state hazardous waste management regulations which may be more stringent than Florida or federal regulations.

More generally, given problems with hazardous waste management by cruise ships in Florida, we've suggested that the Task Force pay particularly close attention to ensuring that all hazardous waste generated aboard cruise ships in California is properly handled and tracked.

As a result of both the Alaska and Florida processes, some cruise companies operating in those states have forged voluntary agreements with the state agencies to pledge zero discharge of gray water and sewage in state waters. We've urged the Task Force to pursue such agreements with cruise companies operating in California.

Another item that we've urged the Task Force to look closely at is the quarterly environmental compliance reporting which Royal Caribbean is required to undertake under its plea agreement for past illegal dumping cases. The external environmental audits of the RCCL ships that are required under this plea agreement reveal a continuing pattern of problems in certain areas, such as improper discharge of photo shop wastewater, spills of oil, paint or chemicals, discrepancies with entries in record books, and incorrect completion of hazardous waste manifests and land disposal restriction (LDR) notifications. We suggest that the Task Force scrutinize the LDRs and record books to ensure that they are completed in accordance with all applicable regulations, and to target those ships whose audits reveal particular and ongoing problems in these areas.

We've encouraged the Task Force to request copies of environmental audits that other cruise companies operating in California may undergo. These will be useful in shedding light on particular waste streams or management practices which have been problematic and require increased attention.

We also recommend that the Task Force request information on what types of wastewater treatment technologies the cruise ships operating in California employ, as well as what types of fuel they use in their engines and incinerators, and what types of legal "incidental" discharges are routinely made into California waters (such as deck wash, swimming pool water) and where. This information will be invaluable to various parties in their ongoing work to improve cruise ship waste management.

Bluewater has also strongly encouraged the Task Force to establish lines of communication with port authorities at all CA ports where cruise ships dock, with provisions to ensure that port authorities report any problems or issues that may arise with cruise ship pollution or waste management in port areas. We've also recommended that the Task Force educate itself about problems that other cruise ship ports have faced in terms of waste reception facilities and



services, and advise the authorities of the ports of San Francisco and Long Beach to take these issues into careful consideration as they develop their new cruise ship terminals.

We've also urged the Task Force to ensure that prompt and adequate enforcement actions are taken in response to any violations of state or federal regulations that may be revealed by their investigations, and that there is full public disclosure of information gathered and conclusions made by the Task Force.

One final note that I would like to make for those who were not present at the previous hearing in LA last week. At that hearing, a representative of Carnival Cruises explained that its first quarterly report to the Task Force reported a discharge of graywater, I believe into the Port of LA. I bring this up because this has occurred in the very first quarter after the legislation that created this Task Force went into force, despite repeated assertions by cruise industry representatives during negotiations of the legislation last year that cruise ships never discharge sewage or graywater into CA waters as a matter of voluntary policy. Although I have not yet received the first quarterly reports, which by the way are a matter of public record and easily obtainable by any citizen through formal request to the Task Force, I would enquire whether the ship was underway and proceeding at a speed of not less than six knots when the discharge occurred. If not, I would respectfully inquire whether Carnival has as a result been expelled from the International Council of Cruise Lines, which recently made this and other waste management practices "mandatory" and a condition of continued membership to the Council. It would be useful for the Task Force to understand how well self-regulation by the cruise industry is functioning.

In closing, the Task Force's investigations are an important step towards determining the scope of the problem of cruise ship pollution and its impacts on California's water quality, air quality, human health and the marine environment. The Task Force's work will provide the Legislature with much-needed information and recommendations about how to better protect our waters from pollution by cruise ships.

Bluewater Network appreciates the important work the Task Force is undertaking and looks forward to its findings. Again, thank you very much for holding these hearings and giving us the opportunity to speak.



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TESTIMONY
Of
TIM EICHENBERG
Of the
CENTER FOR MARINE CONSERVATION
Before the
STATE OF CALIFORNIA
CRUISE SHIP ENVIRONMENTAL TASK FORCE
May 3, 2001

My name is Tim Eichenberg. I am Program Counsel of the Center for Marine Conservation. CMC appreciates the opportunity to testify today before the California Cruise Ship Environmental Task Force. CMC has been involved in cruise ship issues for many years. CMC initiated a Cruise Watch Program to enlist passengers in assessing impacts of cruise vessels in 1991. We participated in the 1994 National Research Council study that led to the report "Clean Ships, Clean Ports, Clean Oceans – Controlling Garbage and Plastic Wastes at Sea", as well as the General Accounting Office report on the cruise line industry issued in February, 2000. We developed and conducted an education program on ship-generated waste for International Maritime Organization in the Caribbean, and worked with the industry on waste management seminars, and CMC's International Coastal Cleanup and Model Communities Program. Finally, CMC joined 53 groups in filing a rulemaking petition with EPA to address impacts of cruise ship wastes on the marine environment in March, 2000.

Cruise Industry Growth

Cruising is a growth industry experiencing unprecedented expansion. In 1998 more than 223 cruise ships carried nearly 10 million passengers. This represented a 50% increase over the past 5 years.¹ In 2000, the industry experienced the single largest increase in the number of passengers carried in North America since the industry began reporting numbers in 1980. The 7 million passengers carried more than doubled the previous high,

¹ U.S. Environmental Protection Agency, Cruise Ship White Paper, August 22, 2000.

and the 16% increase in passengers carried outstripped the 11% growth in berths.² California experienced a 67% increase in cruise ship traffic between 1990-1998. Last year 37 cruise ships made about 600 calls in California ports, and cruise ship traffic is expected to increase by 70% in San Francisco by 2004. More than 50 new cruise ships worth approximately \$15 billion are scheduled to come into service over the next four years - 16 in North America this year alone - increasing passenger capacity by about 35%.³

These immense cruise ships are actually floating cities. The largest, 1017 feet in length, carries more than 5,000 passengers and crew, and has its own zip code.⁴ Feeding, housing, cleaning, caring for and moving the people in these floating cities produces a tremendous amount of waste.

Cruise lines generate about 24% of the vessel garbage produced by the maritime sector within U.S. waters. During a one-week voyage, a typical cruise ship will generate about: 210,000 gallons of sewage (known as black water); 1 million gallons of wastewater from sinks, showers galleys and laundries (known as gray water); 120 gallons of toxic wastes from photo labs, dry cleaning, medical and dental wastes, and used paints; 8 tons of garbage; and 25,000 gallons of oily bilge water.⁵ Cruise ships also pollute the air, damage reefs, and bury marine habitat under sediment.

Black Water

The volume of sewage discharged each day from a large contemporary cruise ship is comparable to the volume of effluent from a small city. However, most cities have sewage treatment plants to treat their wastes, limit the amount of pollution discharged, and monitor and report discharges. Cruise ship effluent, on the other hand, is not regulated under the Clean Water Act discharge permit requirements applicable to sewage treatment plants. Sewage from cruise ships is regulated under provisions that apply to recreational sailboats and motorboats. Thus cruise ships are not required to monitor or report wastewater discharges.

Section 312 of the Clean Water Act requires vessels, including cruise ships, to install and use Coast Guard-approved marine sanitation devices (MSDs) capable of treating or holding raw sewage. Federal regulations prohibit the discharge within 3 nautical miles of the shore of untreated or inadequately treated sewage with a coliform bacterial count greater than 200 colonies per 100 milliliters, or total suspended solids exceeding 150 mg/100 ml. However, raw sewage can be discharged beyond the three-mile zone.

² Cruise News and Specials, "Cruise Industry Records 16% Growth in 2000" (March 5, 2001).

³ Cruise Business Review, January 2001. The Carnival Corporation alone has commissioned 9 ships for delivery by 2004 costing \$4 billion. See also www.cruisebusiness.com.

⁴ Voyager of the Seas, Royal Caribbean Cruise Line.

⁵ Rulemaking Petition Before the EPA to Address Pollution by Cruise Ships, Bluewater Network, March 17, 2000.

Inspection and Monitoring

Cruise ship MSDs are poorly inspected and discharges are almost never sampled or monitored. Coast Guard inspectors certify waste treatment equipment during quarterly inspections. However, no testing is required to determine whether effluent discharged after treatment complies with water quality standards. Budget constraints and lack of personnel have reduced the Coast Guard cruise ship inspection and surveillance programs to a minimal presence; only a few hours per year is devoted to checking for compliance with environmental regulations on each cruise vessel. Moreover, company officials and crew members know of these inspections weeks and even months in advance.

To address this problem, the State of Alaska initiated a monitoring program with the Coast Guard in the summer 2000 that tested treated sewage, gray water and air emissions from cruise ships. What they found was shocking. None of the 22 cruise ships tested were in full compliance with black water standards, and 78% of the gray water samples exceeded federal fecal coliform sewage standards. The tests registered fecal coliform levels as high as 9-24 million colonies per 100 milliliter sample, exceeding federal limits by 10,000-100,000 times.⁶ It was discovered that the marine sanitation devices on many of the ships were either being operated incorrectly or were improperly maintained. Air emission tests also found 34 readings that exceeded the State's opacity standard, and 20 ships were cited by the State and the EPA for violations of clean air standards.

Gray Water

A major problem with the regulation of cruise ship wastes is a loophole in the Clean Water Act that exempts from regulation the largest cruise ship discharges, gray water from galleys, laundries, baths and showers. Gray water can contain pollutants such as fecal coliforms, food wastes, oil and grease, detergents, shampoos, cleaners, pesticides, heavy metals and, sometimes, medical and dental wastes. Normal gray water discharges contain organic as well as inorganic compounds such as nitrogen and phosphorous, and contribute to biological and chemical oxygen demand, which depletes the amount of oxygen dissolved in the water.

As noted earlier, Alaska also found that gray water from galleys and sinks tested higher for fecal coliforms than the ship's sewage. In addition to the contamination from fecal coliform bacteria, gray water samples taken by Alaska found heavy metals and dissolved plastics. Although an adequate explanation has not yet been given for the high contamination in cruise ship gray water in Alaska, various reasons have been postulated: the washing of contaminated food in the galley; unsanitary practices by ship personnel; the buildup of substrates in the plumbing that serve as sites for bacterial growth; and extensive gray water storage time (ships were designed for open sea operation with the expectation that the discharge of gray water would be virtually continuous).

⁶ Alaska Department of Environmental Conservation, Alaska Cruise Ship Initiative (Draft), May, 2001.

Enforcement

The General Accounting Office reports that cruise ships were involved in 87 confirmed cases of illegal discharges from 1993-1998.⁷ While the number of cases against cruise lines have declined recently, and represent only a small portion of the cases against other types of ships, some violations were intentional, involved hundreds of separate dumping incidents, and resulted in criminal penalties of approximately \$30 million. In addition, many other alleged violations were not prosecuted either because the incidents occurred outside U.S. waters or because jurisdiction could not be clearly ascertained. Most of the cases where violations were referred to foreign flag nations went unheeded, which may be one reason why many cruise ship companies prefer to register their vessels outside the U.S.

For these reasons, it is not surprising that the cruise line industry has come under increased scrutiny from government agencies and regulators. The U.S. Environmental Protection Agency, Coast Guard, General Accounting Office, and Department of Justice have all recently undertaken a hard look at the industry. State legislatures are also placing the industry under increased scrutiny, and Congress recently placed tough new restrictions on cruise ships in Alaska.

New Legislation

Title XIV of HR 4577 ("Certain Alaskan Cruise Ship Operations") enacted on December 21, 2000, requires cruise ships in Alaska to document and test sewage and gray water discharges, and prohibits ships from discharging any untreated sewage within state waters. It prohibits discharging treated sewage and gray water within one mile of shore and at speeds less than 6 knots unless the discharges are in compliance with new EPA effluent standards. Stringent interim effluent standards are established until EPA issues new permanent standards,⁸ and penalties for violating the new discharge requirements and prohibitions are strengthened. To implement this new law in Alaska, the Coast Guard is proposing regulations to require cruise ships to:

- maintain for periodic inspections sewage and gray water discharge record books;
- certify before entering the state that discharges meet the minimum effluent standards established by the EPA for treated sewage and gray water; and
- have discharges sampled at least twice within Alaskan waters to ensure they meet the new standards.

California deserves at least the same protections.

⁷ General Accounting Office, Progress Made to Reduce Marine Pollution by Cruise Ships, But Important Issues Remain February, 2000.

⁸ The geometric mean of samples during a 30-day period must not exceed 20 fecal coliform/100 ml, and not more than 10% can exceed 40 fecal coliform/100ml. Total chlorine may not exceed 10.0 mg/l. Cruise ships must demonstrate to the Coast Guard that discharges conform to these new standards through tests using at least 5 samples over a 30-day period. Section 1404(c).

Recommendations

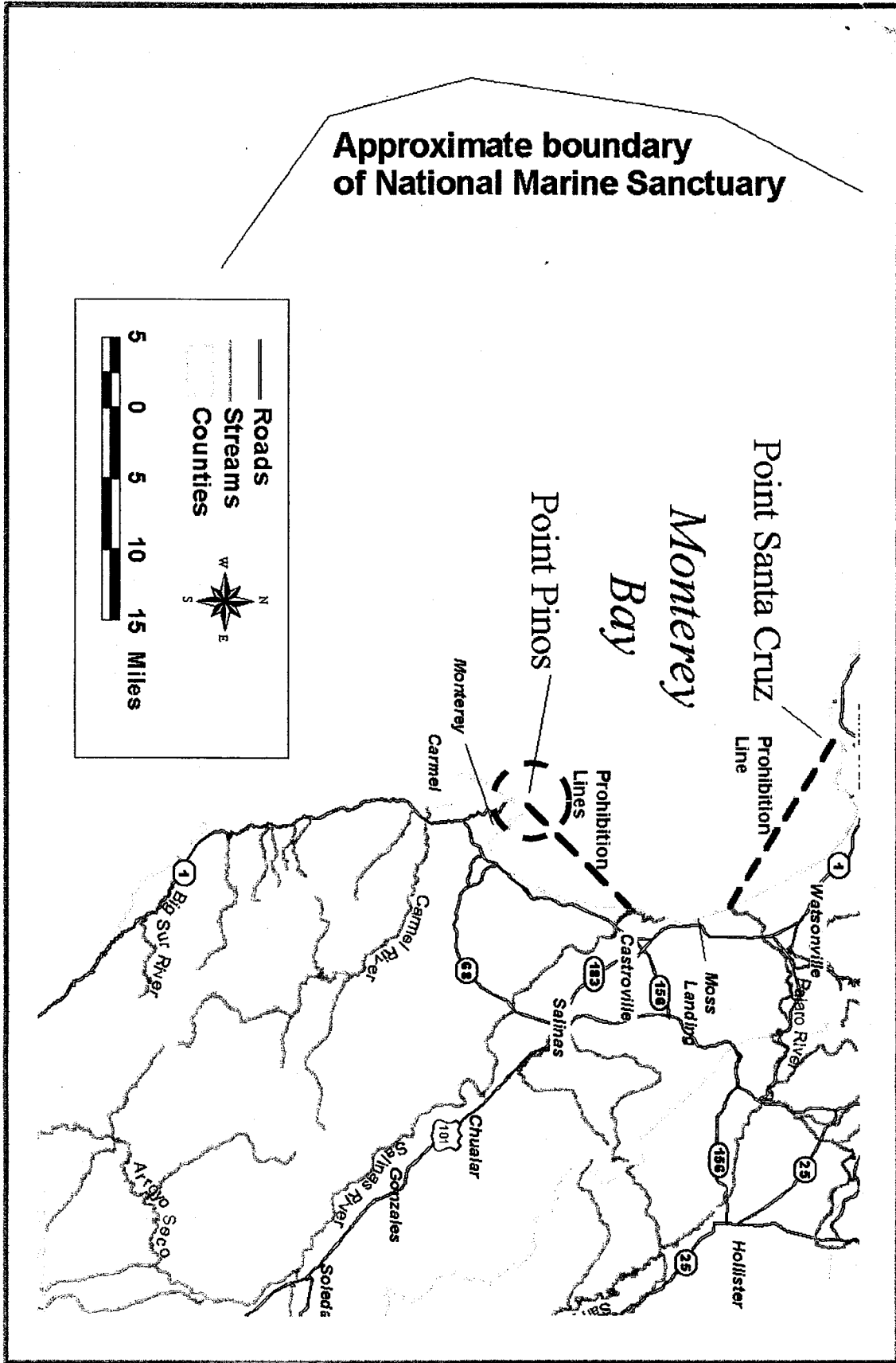
The cruise line industry is making progress in designing new ships with better waste treatment systems, and is entering into voluntary agreements with some states to manage discharges, minimize wastes and develop new technologies. While these voluntary agreements are helpful, they are not a substitute for enforceable regulation. We urge the Task Force to protect California's precious and vital marine resources by recommending that the state legislature enact laws to:

- Prohibit the discharge of untreated sewage into state waters;
- Prohibit the discharge of treated sewage and gray water unless a cruise ship is underway, traveling at least 6 knots and is at least one mile from shore;
- Undertake a vigorous inspection program to verify that pollution control equipment is working properly;
- Undertake a vigorous monitoring and reporting program to ensure that discharges meet state and federal air and water quality standards;
- Provide incentives for third party reporting of environmental violations (crew, passenger, and citizens);
- Require a head tax to pay for sampling, inspection and enforcement activities;
- Require ships to plug into the local power grid to reduce air emissions when in port; and
- Establish no discharge zones to prevent impacts on ecologically sensitive marine areas such as marine protected areas, sea grass beds, fish habitat and Areas of Special Biological Concern.

Attachment 3

Monterey Bay Discharge Prohibition Areas

Monterey Bay Discharge Prohibition Areas



Attachment 4

Areas of Special Biological Significance

Regulation of Cruise Ships in California
June 1, 2003

Attachment 4

**Excerpt from the Central Coast Regional Water Quality Control Board Basin Plan
IV.C.1. AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE**

Discharge of waste is prohibited where it will alter natural water quality conditions in Areas of Special Biological Significance. Areas of Special Biological Significance are:

1. Ano Nuevo Point and Island, San Mateo County, including ocean waters within three (3) nautical miles offshore and defined by extensions of Cascade Creek on the north and the Santa Cruz-San Mateo County line on the south.
2. Pacific Grove Marine Gardens Fish Refuge and Hopkins Marine Life Refuge, Monterey County, including Monterey Bay waters bounded by Point Alones on the east, by Point Pinos on the west, and extending offshore to the 60-foot depth contour (about 0.7 miles).
3. Carmel Bay, Monterey County, including all bay waters enclosed by an imaginary line extending between Pescadero Point and Granite Point.
4. Point Lobos Ecological Reserve, Monterey County, including ocean waters within one-quarter (0.25) mile offshore from Granite Point southerly to the southernmost boundary of Point Lobos Reserve State Park.
5. Julia Pfeiffer Burns Underwater Park, Monterey County, including ocean waters within an area extending about one (1.0) mile offshore and about two and one-half (2.5) miles south of Partington Point.
6. Salmon Creek, Monterey County, including ocean waters within one-thousand (1000) feet or more offshore, bounded on the south by an extension of the Monterey-San Luis Obispo County line, and extending northward about three (3) miles.
7. San Miguel, Santa Rosa, and Santa Cruz Islands, Santa Barbara County, including ocean waters within about one (1) nautical mile offshore.

The discharge of municipal and industrial waste sludge and sludge digester supernatant directly to the ocean, or into a waste stream that discharges to the ocean without further treatment, is prohibited.

The bypassing of untreated waste to the ocean is prohibited.

Excepting vessel washdown waters, disposal of waste matter or untreated waste from vessel to tidal water is prohibited.

The discharge of oil or grease, from other than natural sources, which produces a visible or measurable effect to tidal waters of the basin is prohibited.

New thermal waste discharges to coastal waters, enclosed bays and estuaries having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

Attachment 5

Draft Monterey Sanctuary Work Plan Summary

Attachment 5

Draft Monterey Sanctuary Work Plan Summary - 10/8/02

Cross Cutting Issues to be Addressed with GFNMS and / or CBNMS in the Management Plan Review											
Issue	Description	Process	Product	Timeline							
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Administration	Sanctuaries will develop a program that identifies procedures and protocols for how sites can better protect resources through coordinated education, research, and resource protection activities and improve management efficiency.	Internal Team	Issue Resolved	←			→				
Boundary Issues	Issue 1: Sanctuaries will develop criteria/protocol for proper definition of ecosystem boundaries and resolve GF/MB shared boundary administration issue; Issue 2: Look into whether or not to close SF Exemption zone.	Internal Team	Issue Resolved	←			→				
Community Outreach	Sanctuaries will develop a regional strategic community outreach plan.	Working group	Issue Resolved	←			→				
Cultural Resources	Sanctuaries will outline a program to identify and characterize cultural resources within the three sanctuaries and then identify shipwrecks that pose threats to natural resources (oil leaks, hazards).	Working group	Framework	←			→				
Ecosystem Monitoring	Sanctuaries will develop a coordinated regional ecosystem monitoring program Implement Simon program in Monterey,	Working group	Framework / Implementation Program	←			→				→
Fishing	Sanctuaries will clarify the program's relationship to state fishery managers and the National Marine Fishery Service and how certain ecosystem protection measures that affect fishing activities, such as marine reserves, will be developed and implemented.	Internal Team	Issue Resolved	←			→				
Site Specific Issues to be Addressed by the Monterey Bay National Marine Sanctuary Management Plan Review											
Administration	MBNMS will address administrative issues such as minor boundary and regulatory corrections, permit processing improvements, and identify staffing and infrastructure resource needs.	Internal Team	Issue Resolved	←			→				→
Big Sur Coastal Ecosystem Plan	MBNMS will work with at least seven other agencies and the public to identify a framework for a comprehensive multi-agency ecosystem plan for the Big Sur Coast, integrating resource protection, education and outreach, and research and monitoring activities specifically for the Big Sur area.	Working group	Framework		←		→				

Draft Monterey Sanctuary Work Plan Summary - 10/8/02

Issue	Description	Process	Product	Timeline							
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Exotic Species	Exotic Species remain a concern for the MBNMS however development of a program to address exotics and invasives will be deferred until a later date. MBNMS staff will review, and if appropriate, incorporate related work on wetlands undertaken by GFNMS staff. Prohibit release of exotic species as part of Management Plan Review	Deferred	Deferred (with prohibition)								
Interpretative Facilities	MBNMS will create a plan to develop and outfit a visitor center with regional partners and further its outreach through expanded signage and kiosks throughout the Sanctuary.	Internal Team	Issue Resolved								
Multicultural Outreach – MERITO	MBNMS will integrate the implementation of the MERITO (Multicultural Education for Resource Issues Threatening Oceans) into the Management Plan and other education efforts.	Internal Team	Implementation Program								
Water Quality											
Beach Closures & Coliform Contamination	Many of the Sanctuary's beaches are regularly closed or posted by county health departments as showing elevated levels of contamination from coliform bacteria. MBNMS will outline a regional program to monitor, identify sources and causes, and reduce coliform levels in runoff.	Working group	Framework								
Desalination	MBNMS will work with various stakeholders in the development and implementation of regional desalination guidelines and recommendations. Discourage proliferation of small plants and minimize impacts to the marine environment.	Working group	Issue Resolved								
Revise MOA	The MBNMS developed a Water Quality Management Memorandum of Agreement (MOA) with key agencies as part of the 1992 Management Plan which integrates the mandates and expertise of existing coastal and ocean resource managers to protect the resources, qualities, and compatible uses of the Sanctuary. This will be updated as part of the management plan review.	Working group	Issue Resolved								
Riparian Habitat	Wetlands and riparian corridors adjacent to the sanctuary suffer from degradation due to over-development, invasive species, pollution and erosion. Development of a program will be deferred, however a conceptual framework and schedule will be developed as part of the draft management plan.	Deferred	Deferred								
Water Quality Protection Program Implementation	The Sanctuary's Water Quality Protection Program contains multistakeholder plans for urban runoff, marinas and boating, agriculture and rural lands, and water quality monitoring. The MBNMS will develop a program to fully implement the Water Quality Protection Program.	Working group	Implementation Program								

Draft Monterey Sanctuary Work Plan Summary - 10/8/02

Issue	Description	Process	Product	Timeline							
				Oct	Nov	Dec	Jan	Feb	Mar	Apr	
Wildlife Disturbance											
Marine Mammal / Seabird / Turtle Disturbance	MBNMS will develop a framework to review current marine mammal, sea turtle, and seabird disturbance protective measures, and to develop new measures. Framework will include development of viewing guidelines, educational and outreach strategies, and enforcement measures.	Working group	Framework		←						→
Motorized Personal Watercraft	MBNMS will revise current MPWC definition. Action plan will include identification of allowed uses, and evaluation of need for some or all MPWC zones, and the buoy demarcation system, as well as development of an effective enforcement and education program for MPWC uses/prohibitions.	Working group	Issue Resolved		←						→
Tidepool Protection	MBNMS will develop a framework to develop tidepool interaction guidelines, education, and outreach programs	Working group	Framework		←						→

Management Plan Review Outputs

Issue Resolved: Many issues to be addressed during the management plan review will be resolved through the review process. In some cases, an action plan may be developed that will be implemented following adoption of the management plan. An action plan outlines what, who, why, when and how different strategies will be conducted as well as costs and performance expectations. In other cases, resolving the issue may be in the form of a new or modified regulation or marine zone but with no further development after adoption of the management plan.

Framework: A framework lays out the general goals and guidelines for how an action plan will be developed in the future. Generally, this will occur for issues that are known to be highly complex and could not be adequately addressed as part of the Joint Management Plan Review. In this case, the action plans will be developed after adoption of the management plan. The framework will also include a schedule for implementation of the action plan upon completion.

Implementation Program: The Sanctuary recently developed several major programs (e.g. MERITO, SIMoN) and is well into the process of developing other resource protection policy initiatives. These programs are well evolved, however a program for how they will be implemented as a part of overall management of the Sanctuary will need to be developed and integrated into the management plan.

Deferral: Certain issues have been identified as a high priority to be addressed by the Sanctuary however will not be addressed as part of this management plan. In these cases, a conceptual framework and schedule for future action will be developed and included in the management plan.

Attachment 6

Memorandum of Understanding between the State of Hawaii and the North West Cruise Ship Association

Attachment 6

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is entered into this 24 day of October 2002 by and between the State of Hawaii and the North West CruiseShip Association, hereinafter referred to as NWCA, representing Carnival Cruise Lines, Celebrity Cruises, Crystal Cruises, Holland America Line, Norwegian Cruise Line, Princess Cruises, Royal Caribbean Cruise Line, World Explorer, Radisson Seven Seas and Seabourn, as representatives of the Cruise Industry in Hawaii.

Whereas the State of Hawaii is charged with the responsibility of protecting and conserving Hawaii's environmental resources in relation to the Cruise Industry's environmental practices in Hawaii; and

Whereas, the NWCA is a non-profit entity organized for the purpose of representing member cruise lines which operate in and about Hawaii, whose current membership is identified in **Appendix I**, and

Whereas, the NWCA has adopted the "**Cruise Industry Waste Management Practices and Procedures**" as promulgated by the Cruise Industry's trade association, the International Council of Cruise Lines, herein referred to as ICCL, which practices and procedures are attached hereto as **Appendix II**, and

Whereas, NWCA cruise vessels operate in international waters and move passengers to destinations worldwide and, consequently, those cruise vessel waste management practices must take into account environmental laws and regulations in many jurisdictions and international treaties and conventions; and

Whereas, the NWCA and the State of Hawaii have met to develop waste management practices that preserve a clean and healthy environment and demonstrate the Cruise Industry's commitment to be a steward of the environment; and

Whereas, research is ongoing to establish the impact of ships' wastewater discharges on the ocean environment, and the results of this research will be taken into account in periodic review of the wastewater discharge practices described in this memorandum of understanding; and

Whereas, the cruise industry recognizes Hawaii's fragile marine environment and is committed to help protect this environment;

Now therefore, based upon mutual understanding, the parties enter into this Memorandum of Understanding to implement the following environmental goals, policies and practices:

Definition of terms for the purpose of this agreement:

"air emissions" refers to the airborne releases associated with the operation of the vessel;

"blackwater" means waste from toilets, urinals, medical sinks and other similar facilities;

"cruise ship" means any vessel that is owned or operated by a member of the NWCA;

"garbage" means solid galley waste, paper, rags, plastics, glass, metal, bottles, crockery, junk or similar refuse;

"graywater" includes drainage from dishwasher, shower, laundry, bath and washbasin drains;

"Hawaii marine areas" means those waters between the shoreline of the Hawaiian Islands and any point 4 nautical miles beyond the 100 fathom contour line as illustrated in Appendix III;

1. The State of Hawaii accepts the ICCL Industry Standard E-01 -01, titled *Cruise Industry Waste Management Practices and Procedures (Appendix II)* as ICCL member policy in the management of solid waste, hazardous wastes and wastewaters. In addition to the ICCL Practices, the members of NWCA operating in Hawaii agree to comply with the following unique practices among the Hawaiian Islands:

1.1 Wastewater Management

In recognition of the sensitive nature of Hawaii's marine environment, the NWCA agrees to prohibit the discharge of untreated black water, treated black water or gray water within the Hawaii marine area as defined above. (*Appendix III*).

Exception from this prohibition is as follows:

If the effluent from an advanced wastewater treatment system on board a ship meets standards for continuous discharge as set under federal Law - Title XIV - Certain Alaskan Cruise Ship Operations, Section 1404 Limitations on Discharge of Treated Sewage or Graywater, Subsection (c) (1), (2), (3), (4) (*Appendix VII*), the effluent from such advanced wastewater treatment systems may be discharged in the Hawaii marine area while the ship maintains a minimum speed of six knots and while the ship is more than one nautical mile from shore.

Prior to the discharge of effluent by a ship utilizing an advanced treatment system in the situation described above, the cruise ship company must first provide to the State of Hawaii test results as are required under the above referenced federal law to verify that the system meets or exceeds the federal law standards as described.

The NWCA and the State of Hawaii will continue discussions to determine whether maintaining these restrictions on advanced wastewater treatment systems is consistent with best available scientific information on the environmental effects of the discharges.

1.2 Solid Waste, Hazardous Waste Management:

The NWCA has adopted the ICCL policy guidelines as stipulated above. NWCA Ships sailing in Hawaiian waters will comply with these policies and best practices as presented in these standards. (*Appendix II*)

NWCA member ships operating in Hawaiian waters will eliminate, to the maximum extent possible, the disposal of wastes described under MARPOL Annex V into the marine environment through improved reuse and recycling opportunities. Where reuse and recycling are not feasible, waste will be discharged into the marine environment only if it has been properly processed and can be discharged in accordance with MARPOL, the ICCL best management practices, and other prevailing requirements. Whenever a member ship offloads solid waste in Hawaii, it shall ensure that such offloading be done in compliance with all state and local laws.

1.3 Air Emissions

1.3.1 NWCA members agree that their ships will not use their incinerators in any Hawaiian ports for the combustion of any waste materials.

1.3.2 NWCA members agree to limit visible emissions, excluding condensed water vapor, as follows:

Ships will not exceed 20% opacity for periods of time exceeding 6 minutes in any 60-minute period (Continuous emission monitor or EPA Method 9) except for the following:

- a. When the ship is maneuvering to or from the dock or anchor,¹
- b. In the event of a navigational or safety concern on the ship,
- c. When an equipment failure occurs². In the case of an equipment failure, the cruise line will upon request, provide information to the State that describes the subject equipment, the malfunction, the corrective actions taken and the start and end times of the malfunctioning period.

Note:

Depending on current, wind and port congestion, it may be necessary to have full engine capacity on standby to assure safe port navigation or compensate for equipment failure. In such cases of full engine deployment and low engine loads, higher than normal particulate emissions can result.

Footnotes

1. *Maneuvering is defined for the purpose of this MOU as: On departure from the dock or anchorage, maneuvering will commence with the startup of the additional engines required for safe ship handling on its departure from the dock or anchor. It will cease once the ship has established its course and*

speed towards the open sea and is clear of the last port navigational markers. On arrival, maneuvering will commence when the engine configuration for entering the port has been set by the Captain. It may call for additional engines to assure adequate power to allow for safe ship handling during docking procedures, or anchoring, and will cease when the ship is safely secured to the dock, or at anchor, and the additional engines are shut down.

2. Equipment failure (for example – boiler, engine injector or turbo failure) can cause periodic excess particulate matter. Some discretion from the visual emission standards is allowed if the failure has occurred on the current or previous voyage, as long as the repairs are waiting for either technical support or a critical spare part.

1.3.3 NWCA ships will have opacity-metering and recording capability and will continuously monitor the stack's visible emissions while sailing in Hawaiian waters.

1.3.4 The State of Hawaii recognizes that, as of the execution of this memorandum, there are no Cruise Steamships plying the waters of Hawaii. Notwithstanding the foregoing, NWCA members agree that they shall not discharge soot within 1,000 yards of the Hawaii coastline. Cruise Steamships shall not cause or permit the discharge if it would have been practical to emit the discharge before or after leaving land or if an alternative method could have been employed.

1.3.5 The NWCA member ships generally take on fuel in California, British Columbia, and Hawaii ports. The sulfur content of the fuel currently available at these locations is less than 2.8% by weight. It is the intent of the member cruise lines to continue to bunker their ships in these ports with fuel with a sulfur content of less than 2.8% by weight. If such fuel becomes unavailable in those ports, or is unavailable for any NWCA ship coming to Hawaii from other ports, the ship will advise the State of Hawaii in writing.

2. The State of Hawaii acknowledges that the waste management practices and procedures referenced and/or contained in section 1 above meet or exceed the standards set forth in Hawaii laws and applicable Hawaii regulations as pertaining to ship operations.

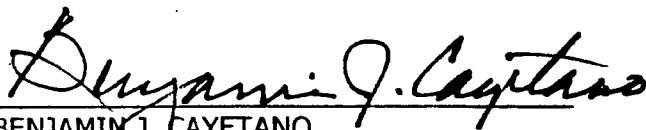
3. The State of Hawaii and the NWCA understand that the U.S. Coast Guard (USCG) has Federal jurisdiction over environmental matters in navigable waterways in the United States and conducts passenger ship examinations that include review of environmental systems, Safety Management System (SMS) documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book. Additionally, NWCA member cruise vessels will integrate such industry standards into SMS documentation that ensure compliance through statutorily required internal and third party audits.

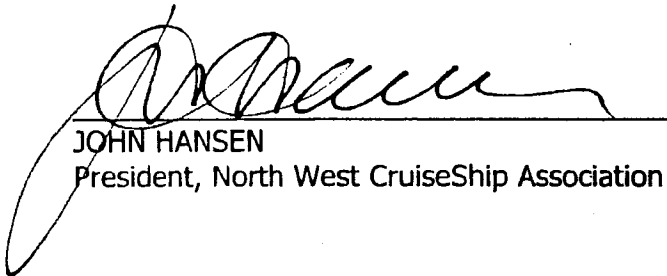
4. The USCG has developed guidelines relating to the inspection of waste management practices and procedures, which have been adopted by the cruise industry. The State of Hawaii accepts the USCG Navigation and Vessel Inspection Circular and Environmental Systems Checklist (*Appendix IV*), which will be incorporated into USCG 840 Guidebook as the procedure to conduct waste management inspections on board cruise vessels. To reduce administrative burden on the cruise ship industry, the State of Hawaii agrees to first request from the USCG any records for cruise vessels entering Hawaii territorial waters. Should records described above not be made available by the USCG, the cruise ship will provide them to the State.
5. The ICCL in consultation with NWCA is working with the Environmental Protection Agency (EPA) to develop a national practice for the assigning of an EPA Identification Number to the generator of hazardous wastes, which recognizes the multi-jurisdictional itineraries of a cruise vessel. Conceptually, the EPA has agreed that issuing a national identification number to cruise vessels operating in the U.S. is an acceptable procedure. EPA also proposes that the state where company offices are located may issue the national identification numbers provided the criteria and information submitted required for obtaining the number is standard for the United States. The State of Hawaii and NWCA agree to a uniform application procedure for the EPA national identification number in accordance with the Resource Conservation Recovery Act (RCRA) (*Appendix V*). The State of Hawaii shall have the right to inspect all such records upon written request to the cruise vessel operator. The State of Hawaii recognizes that in some cases EPA Identification Numbers may not be required under federal law because of the small amounts of waste generated.
6. The NWCA has adopted a uniform procedure for the application of RCRA to cruise vessels entering Hawaii (*Appendix VI*). The State of Hawaii accepts this procedure as the appropriate process for vendor selection and management of hazardous wastes in Hawaii. NWCA member lines agree to provide an annual report regarding the total hazardous waste offloaded in Hawaii by each cruise vessel.
7. The State of Hawaii and NWCA agree that all records required by RCRA for cruise vessels entering Hawaii territorial waters shall be available to the State of Hawaii upon written request to the cruise vessel operator.
8. The State of Hawaii recognizes that waste management practices are undergoing constant assessment and evaluation by cruise industry members. It is understood by the STATE OF HAWAII and the NWCA that the management of waste streams will be an on-going process, which has as its stated objectives both waste minimization and pollution prevention. Consequently, all parties agree to continue to work with each other in good faith to achieve the stated objectives. This may require additional meetings with federal regulators to discuss specific issues applicable to the cruise industry in the U.S.
9. The NWCA acknowledges that its operating practices are required to comply with the applicable provisions of the Marine Mammal Protection Act and the Invasive Species Act.
10. The State of Hawaii agrees that the performance required by the NWCA under the terms of this Memorandum of Understanding shall be directed only to its member cruise lines.

The NWCA acknowledges that its members operate cruise vessels engaged in cruise itineraries greater than one day duration; and further that its members do not operate one-day attraction ships or casino gambling ships.

11. All parties acknowledge that ongoing discussions of environmental goals are recognized as a necessary component to the successful implementation of management practices for waste minimization and reduction.
12. All parties acknowledge that this MOU is not inclusive of all issues, rules or programs that may arise in the future. The State of Hawaii reserves the right to enter into additional MOU to address or refine such issues, or to pursue appropriate legislation. All parties agree to at least one annual meeting to review the effectiveness of the MOU. The State of Hawaii and NWCA reserve the right to cancel this MOU upon 90 days written notice.

IN RECOGNITION OF THE MUTUAL UNDERSTANDINGS DISCUSSED HEREIN; THE PARTIES HERETO AFFIX THEIR SIGNATURES ON THIS 24th DAY OF October 2002.


BENJAMIN J. CAYETANO
Governor, State of Hawaii


JOHN HANSEN
President, North West CruiseShip Association

APPENDICES
MEMORANDUM OF UNDERSTANDING

- Appendix I** List of NWCA Member Lines
- Appendix II** ICCL Standards
- Appendix III** Navigational Chart of Hawaiian Waters denoting 4 nm outside demarcation of the 100 fathom zone
- Appendix IV** USCG Navigation & Vessel Inspection Circular and Environmental Systems Checklist
- Appendix V** Uniform application procedure for EPA National ID Number as per Resource Conservation Recovery Act
- Appendix VI** Uniform procedure for the application of RCRA to cruise vessels entering Hawaii
- Appendix VII** Title XIV – Certain Alaskan Cruise Ship Operations, Section 1404 Limitations on Discharge of Treated Sewage or Graywater, Subsection (c) (1), (2), (3), (4)

Appendix I – Hawaii MOU

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THE WEST
CRUISE SHIP
ASSOCIATION

Member Lines

Carnival Cruise Lines

Celebrity Cruises

Crystal Cruises

Holland America Line – Westours

Norwegian Cruise Line

Princess Cruises

Radisson Seven Seas Cruises

Royal Caribbean International

Seabourn Cruises

World Explorer Cruises



INTERNATIONAL COUNCIL
OF CRUISE LINES

ICCL INDUSTRY STANDARD E-01-01 (Revision 1)

**CRUISE INDUSTRY
WASTE MANAGEMENT
PRACTICES AND PROCEDURES**

The members of the International Council of Cruise Lines are dedicated to preserving the marine environment and in particular the pristine condition of the oceans upon which our vessels sail. The environmental standards that apply to our industry are stringent and comprehensive. Through the International Maritime Organization, the United States and other maritime nations have developed consistent and uniform international standards that apply to all vessels engaged in international commerce. These standards are set forth in the International Convention for the Prevention of Pollution from Ships (MARPOL). In addition, the U.S. has jurisdiction over vessels that operate in U.S. waters where U.S. laws such as the Resource Conservation and Recovery Act and the Federal Water Pollution Control Act apply. The U.S. Coast Guard enforces both international conventions and domestic laws.

The cruise industry commitment to protecting the environment is demonstrated by the comprehensive spectrum of waste management technologies and procedures employed on its vessels.

ICCL members are committed to:

- a. Designing, constructing and operating vessels, so as to minimize their impact on the environment;
- b. Developing improved technologies to exceed current requirements for protection of the environment;
- c. Implementing a policy goal of zero discharge of MARPOL, Annex V solid waste products by use of more comprehensive waste minimization procedures to significantly reduce shipboard generated waste;
- d. Expanding waste reduction strategies to include reuse and recycling to the maximum extent possible so as to land ashore even smaller quantities of waste products;
- e. Improving processes and procedures for collection and transfer of hazardous waste; and
- f. Strengthening comprehensive programs for monitoring and auditing of onboard environmental practices and procedures in accordance with the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code).

INDUSTRY WASTE MANAGEMENT STANDARDS: ICCL member cruise vessel operators have agreed to incorporate the following standards for waste stream management into their respective Safety Management Systems.

1. Photo Processing, Including X-Ray Development Fluid Waste: Member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations.
2. Dry-cleaning waste fluids and contaminated materials: Member lines have agreed to prevent the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment
3. Print Shop Waste Fluids: Member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.
4. Photo Copying and Laser Printer Cartridges: Member lines have agreed to initiate procedures so as to maximize the return of photo copying and laser printer cartridges for recycling. In any event, these cartridges will be landed ashore.
5. Unused And Outdated Pharmaceuticals: Member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed of in accordance with legal and environmental requirements.
6. Fluorescent And Mercury Vapor Lamp Bulbs: Member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable means of disposal.
7. Batteries: Member lines have agreed to prevent the discharge of spent batteries into the marine environment.
8. Bilge and Oily Water Residues: Member lines have agreed to meet and exceed the international requirements for removing oil from bilge and wastewater prior to discharge.
9. Glass, Cardboard, Aluminum and Steel Cans: Member lines have agreed to eliminate the maximum extent possible, the industry will eliminate the disposal of MARPOL Annex V wastes into the marine environment through improved reuse and recycling opportunities. They have further agreed that waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.
10. Incinerator Ash: Member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities.
11. Graywater: Member lines have agreed that graywater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having

jurisdiction or provided for by local law except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations.

12. Blackwater: Member lines have agreed that blackwater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots and in accordance with applicable regulations; and that treated Blackwater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law, except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of blackwater will comply with all applicable laws and regulations.

To improve environmental performance, some member cruise lines are field-testing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

Each ICCL cruise vessel operator has agreed to utilize one or more of the practices and procedures contained in the attached "*Cruise Industry Waste Management Practices and Procedures*" in the management of their shipboard waste streams. Recognizing that technology is progressing at a rapid rate, any new equipment or management practices that are equivalent to or better than those described, and which are shown to meet or exceed international and federal environmental standards, will also be acceptable. Member lines have agreed to communicate to ICCL the use of equivalent or other acceptable practices and procedures. As appropriate, such practices and procedures shall be included as a revision to the attached document. As an example, when improved systems for treating blackwater and graywater are perfected and shown to meet the requirements for MSDs and accepted by appropriate authorities, the new systems and associated technology will be included in the attachment as a revision.

ICCL and its Environmental Committee will work with the U.S. Coast Guard, the U.S. Environmental Protection Agency and other appropriate agencies to further implement the above commitments.

ATTACHMENT: *CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES* (Dated May 14, 2001)

Adopted: June 11, 2001
Revised: December 1, 2001
Effective Date: July 1, 2001

Attachment to ICCL Standard E-1-01 (Revision 1)

CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES

(REVISED: December 1, 2001)

The cruise industry is dedicated to preserving the marine environment and oceans upon which our ships sail. As a stated industry standard, ICCL members have adopted aggressive programs of waste minimization, waste reuse and recycling, and waste stream management set forth in the following. In addition ICCL members are working in a number of areas to identify and implement new technologies in order to improve the environmental performance of their ships. ICCL member lines currently have agreed to utilize waste management practices and procedures, which meet or exceed the stringent standards as set forth in international treaties and applicable U.S. laws.

Introduction

The cruise industry is inextricably linked to the environment. Our business is to bring people to interesting places in the world, over the water. Recognizing the future of the industry depends on a clean and healthy environment, cruise industry senior management is committed to stewardship of the environment and establishing industry practices that will make ICCL member cruise ship operators leaders in environmental performance.

This document outlining member line practices has been developed under the auspice of the industry's professional organizations, the International Council of Cruise Lines (ICCL), the Florida Caribbean Cruise Association (FCCA), and the Northwest Cruise Ship Association (NWCA). The purpose of this document is to set forth cruise industry waste management practices and procedures that ICCL member cruise vessel operators have agreed to incorporate into their respective Safety Management Systems.

In the development of industry practices and procedures for waste management, the members of the International Council of Cruise Lines have endorsed policies and practices based upon the following fundamental principles:

- Full compliance with applicable laws and regulations
- Maintaining cooperative relationships with the regulatory community
- Designing, constructing and operating vessels, so as to minimize their impact on the environment
- Embracing new technology
- Conserving resources through purchasing strategies and product management
- Minimizing waste generated and maximize reuse and recycling
- Optimizing energy efficiency through conservation and management
- Managing water discharges
- Educating staff, guests and the community.

Discussion

Just as on shore, ship operations and passengers generate waste as part of many daily activities. On ships, waste is generated while underway and in port. Because ships move, the management of these wastes becomes more complicated than for land-based activities, as the facilities and laws change with the location of the ship. Facilities on the ships and management practices must be designed to take into account environmental laws and regulations around the world. Moreover, because waste management ultimately becomes a local activity, the local port infrastructure, service providers, and local waste disposal vendors are factors in the decision-making processes.

On an international level, environmental processes are an important part of the International Maritime Organization's (IMO's) policies and procedures for the maritime industry. ICCL member lines have agreed to incorporate environmental performance into Safety Management Systems (SMS) and MARPOL mandated Waste Management Manuals. Under agreements and laws specific to many nations, these programs are routinely reviewed by Port States to ensure compliance. For example, in the United States, the US Coast Guard has jurisdiction over environmental matters in ports and waterways and conducts passenger ship examinations that include review of environmental systems, SMS documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book.

The industry effort to develop waste management practices and procedures has focused on the traditional high volume wastes (garbage, graywater, blackwater, oily residues (sludge oil) and bilge water), pollution prevention, and the small quantities of hazardous waste produced onboard. In the process, ICCL members have shared waste management strategies and technologies, while focusing on a common goal of waste reduction.

The process of waste reduction includes waste prevention, the purchasing of products that have recycled content or produce less waste (e.g. source reduction), and recycling or reuse of wastes that are generated. The ultimate goal is to have the waste management culture absorbed into every facet of cruise vessel operation. A fully integrated system beginning with the design of the vessel should address environmental issues at every step.

Management practices for waste reduction should start before a product is selected. Eco-purchasing and packaging are vital to the success of any environmental program, as are strategies to change packaging, processes and management to optimize the resources used.

The commitment of the industry to this cooperative effort has been quite successful, as companies have shared information and strategies.

Industry Standard Waste Handling Procedures

ICCL member lines have agreed that hazardous wastes and waste streams onboard cruise vessels will be identified and segregated for individual handling and management in accordance with appropriate laws and regulations. They have further agreed, hazardous wastes will not be discharged overboard, nor be commingled or mixed with other waste streams.

- A. Photo Processing, Including X-Ray Development Fluid Waste: *ICCL member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations or by treating all photo processing and x-ray development fluid waste (treated or untreated) as a hazardous waste and landing ashore in accordance with RCRA requirements.*

There are several waste streams associated with photo processing operations that have the potential to be regulated under the Resource Conservation and Recovery Act (RCRA). These waste streams include spent fixer, spent cartridges, expired film and silver flake.

Photographic fixer removes the unexposed silver compounds from the film during the developing process. The spent fixer can have as much as 2000-3000 parts per million (ppm) of silver. Silver bearing waste is regulated by RCRA as a hazardous waste if the level of silver exceeds 5 ppm as determined by the Toxicity Characteristic Leaching Procedure (TCLP) test.

Silver recovery units may be used to reclaim the silver from the used fixer waste stream. There are two types of recovery units. These are active (with electricity) and passive (without electricity) units. The active unit uses electricity to plate silver onto an electrode. The passive unit uses a chemical reaction between steel wool and silver to remove most of the silver from solution. Utilizing the best available technology, the equipment currently onboard ICCL member cruise ships is conservatively estimated to reduce the silver content of this effluent below 4 mg/l (milligrams/l or ppm)

The effluent from the silver recovery process must be tested before it can be discharged as a non-hazardous waste to be further diluted by addition to the ship's gray water. After the photographic and X-ray development fluids are treated for the removal of silver, the treated, non-hazardous effluent is then blended with the ship's graywater. In general, assuming that an entire week's photographic and X-ray development treated effluent stream is introduced into a single day's accumulation of graywater, the concentration of silver in the resulting mixture would be less than one-half of one part per billion (<0.5 micrograms/liter). Such mixing is not done on a weekly basis. Even at this assumed extreme however, it is expected that the silver concentration would only be approximately one fifth (1/5) the surface water quality standard for predominately marine waters specified in one state where cruise ships operate. When mixing is done on a daily basis it is evident that the resulting immediate concentration would be almost an order of magnitude less than this (1/50 of the current surface water quality standard). Additionally, it is evident that total mass of any discharges of silver would be negligible. Member lines have agreed that this discharge would be carried out only while their vessels are underway. Also, it should be noted that these estimates were carried out considering the largest cruise ships in service, which would produce the greatest amount of waste.

Handling Method 1 Employed by Member Lines:

Treat used photographic and x-ray development fluids to remove silver for recycling.

Verify that the effluent from the recovery unit is less than 5 parts per million (ppm) silver, as measured by EPA-approved methodology.

After treatment, the residual waste stream fluid is non-hazardous and landed ashore or discharged in accordance with the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and other prevailing regulations.

Handling Method 2 Employed by Member Lines:

Used photographic and x-ray development fluids, either treated or untreated, may be assumed to be a hazardous waste. In this event, they are landed ashore in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA).

- B. Dry-cleaning waste fluids and contaminated materials: *ICCL member lines have agreed to prevent the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment.*

Shipboard dry cleaning facilities use a chlorinated solvent called perchlorethylene (also known as PERC or tetrachloroethylene) as a dry cleaning fluid. This is the approved dry cleaning solvent for these units. Operators must receive specific required training for the correct use of this chemical and its associated precautions. This solvent should be used in accordance with all safety procedures including appropriate personal protective equipment (PPE).

The dry cleaning units produce a small volume waste from condensate, the bottoms of the internal recovery stills, waste products from button and lint traps, spent perchloroethylene and filter media. This waste is comprised of dirt, oils, filter material, and spent solvent. Each ship utilizing these dry-cleaning units produces approximately two pounds of waste material weekly. However, the amounts may vary greatly by season and passenger load. This material is classified as hazardous waste under RCRA and must be handled accordingly.

Handling Method 1 Employed by Member Lines:

Perchloroethylene (PERC) and other chlorinated dry-cleaning fluids, contaminated sludge and filter materials are hazardous waste and landed ashore in accordance with the requirements of RCRA.

- C. Print Shop Waste Fluids: *ICCL member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.*

Print shop waste may contain hazardous waste. Printing solvents, inks and cleaners all may contain hydrocarbons, chlorinated hydrocarbons, and heavy metals that can be harmful to human and aquatic species. Recent advances in printing technology and substitution of chemicals that are less hazardous reduces the volume of print shop waste generated and reduces the impact of these waste products.

ICCL member lines have agreed to utilize, whenever possible, printing methods and printing process chemicals that produce both less volume of waste and less hazardous waste products, that shipboard printers will be trained in ways to minimize printing waste generated, and that alternative printing inks such as soy based, non-chlorinated hydrocarbon based ink

products will be used whenever possible. The member lines have further agreed that all print shop waste including waste solvents, cleaners, and cleaning cloths will be treated as hazardous waste, if such waste contains chemical components that may be considered as hazardous by regulatory definitions, and that all other waste may be treated as non-hazardous.

Handling Method 1 Employed by Member Lines:

When using traditional or non-soy based inks and chlorinated solvents, all print shop waste is treated as hazardous, and discharged ashore in accordance with RCRA.

Handling Method 2 Employed by Member Lines:

Shipboard printing processes use non-toxic based printing ink such as soy based, non-chlorinated solvents, and other non-hazardous products to eliminate hazardous waste products.

- D. Photo Copying and Laser Printer Cartridges: *ICCL member lines have agreed to initiate procedures so as to maximize the return of photocopying and laser printer cartridges for recycling, and in any event, have agreed that these cartridges will be landed ashore.*

Increased use of laser and photo copying equipment on shore as well as onboard ship results in the generation of increased volumes of waste cartridges, inks, and toner materials. ICCL member lines have agreed to use only such inks, toners and printing/copying cartridges that contain non-hazardous chemical components, and that none of these cartridges or their components should be disposed of by discharge into the marine environment. In recognition of the member lines' goal of waste minimization, they have further agreed these cartridges should, whenever possible, be returned to the manufacturer for credit, recycling, or for refilling.

Handling Method Employed by Member Lines:

ICCL member lines have agreed that wherever possible, photo copying and laser printer cartridges will be collected, packaged and returned for recycling and when this is not possible, that these materials will not be discharged into the sea or other bodies of water but will be handled as other shipboard waste that is landed ashore for further disposal.

- E. Unused And Outdated Pharmaceuticals: *ICCL member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed in accordance with legal and environmental requirements.*

In general ships carry varying amounts of pharmaceuticals. The pharmaceuticals carried range from over-the-counter products such as anti-fungal creams to prescription drugs such as epinephrine. Each ship stocks an inventory based on its itinerary and the demographics of its passenger base. ICCL member lines have agreed that all pharmaceuticals will be managed to ensure that their efficacy is optimized and that disposal is done in an environmentally responsible manner.

ICCL member lines have further agreed that when disposing of pharmaceuticals, the method used will be consistent with established procedures, and that pharmaceuticals and medications which are off specification or which have exceeded their shelf-life, and stocks that are unused and out of date, cannot be used for patients and therefore will be removed from the ship. Further, each regulatory jurisdiction has a posting of listed pharmaceuticals that must be

considered hazardous waste once the date has expired or the item is no longer considered good for patient use.

Through onboard management of the medical facility, ICCL member lines have agreed that stocks of such listed pharmaceuticals are returned to the vendor prior to date of expiration. Pharmaceuticals that are being returned and which have not reached their expiration date are shipped using ordinary practices for new products.

Safety and Health

ICCL member lines have agreed that all expired listed pharmaceuticals will be handled in accordance with established procedures and all personnel handling this waste will receive appropriate training in the handling of hazardous materials. As guidance, the US Environmental Protection Agency (EPA) has issued a report that clarifies the fact that residuals, such as epinephrine, found in syringes after injections are not considered an acutely hazardous waste by definition and may be disposed of appropriately in sharps containers. Member lines have agreed that all Universal Precautions will be adhered to when handling sharps.

Handling Method 1 Employed by Member Lines:

Establish a reverse distribution system for returning unexpired, unopened non-narcotic pharmaceuticals to the original vendor.

Handling Method 2 Employed by Member Lines:

Appropriately destroy narcotic pharmaceuticals onboard ship in a manner that is witnessed and recorded.

Handling Method 3 Employed by Member Lines:

Land listed pharmaceuticals in accordance with local regulations. Listed pharmaceuticals are a hazardous waste having chemical compositions which prevent them from being incinerated or disposed of through the ship's sewer system. Listing of such pharmaceuticals may vary from state to state.

Handling Method 4 Employed by Member Lines:

Dispose of other non-narcotic and non-listed pharmaceuticals through onboard incineration or landing ashore.

F. Fluorescent And Mercury Vapor Lamp Bulbs: *ICCL member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable disposal.*

The recycling of fluorescent lights and high intensity discharge (HID) lamps is a proven technology capable of reliably recovering greater than 99 percent of the mercury in the spent lights. This is done by using a crush-and-sieve method. In this process, the spent tubes are first crushed and then sieved to separate the large particles from the mercury containing phosphor powder. The phosphor powder is collected and processed under intense heat and pressure. The mercury is volatilized and then recovered by condensation. The glass particles are segregated and

recycled into other products such as fiberglass. Aluminum components are also recycled separately.

Storage and handling of used lights pose no compatibility problems; nevertheless, storage and shipment of the glass tubes is best done keeping the glass tubes intact. These items are classified as "Universal Waste" when they are shipped to a properly permitted recycling facility; as such, testing is not required.

Safety and Health

Fluorescent and Mercury Vapor lamps contain small amounts of mercury that could potentially be harmful to human health and the environment. To prevent human exposure and contamination of the environment, ICCL member lines have agreed that these lamps will be handled in an environmentally safe manner. Recycling of mercury from lamps and other mercury containing devices is the preferred handling method and is encouraged by various states. The recycling of fluorescent lights and HID lamps keeps potentially hazardous materials out of landfills, saves landfill space and reduces raw materials production needs.

Handling Method Employed by Member Lines:

Fluorescent and mercury vapor lamps are collected and recycled or landed for recycling or disposal in accordance with prevailing laws and regulations.

- G. **Batteries:** *ICCL member lines have agreed to prevent the discharge of spent batteries into the marine environment.*

If not properly disposed of, spent batteries may constitute a hazardous waste stream. Most of the large batteries are on tenders and standby generators. Small batteries used in flashlights and other equipment and by passengers, account for the rest. There are four basic types of batteries used.

Lead-acid batteries – These are used in tenders and standby generators. They are wet, rechargeable, and usually six-celled. They contain a sponge lead anode, lead dioxide cathode, and sulfuric acid electrolyte. The electrolyte is corrosive. These batteries require disposal as a hazardous waste, unless recycled or reclaimed.

Lead-acid batteries use sulfuric acid as an electrolyte. Battery acid is extremely corrosive, reactive and dangerous. Damaged batteries will be drained into an acid-proof container. A damaged and leaking battery is then placed in another acid-proof container, and both the electrolyte and the damaged battery placed in secure storage for proper disposal as a hazardous waste.

Nickel-cadmium (NiCad) batteries – These are usually rechargeable, and contain wet or dry potassium hydroxide as electrolyte. The potassium hydroxide is corrosive and the cadmium is a characteristic hazardous waste. Therefore, NiCad batteries will be disposed of as hazardous waste, unless recycled or reclaimed.

Lithium batteries – These are used as a power source for flashlights and portable electronic equipment. All lithium batteries will be disposed of as hazardous waste, or sent out for reclamation.

Alkaline batteries – These are common flashlight batteries and are also used in many camera flash attachments, cassette recorders, etc. They should be recycled, properly disposed or reclaimed.

Handling Method Employed by Member Lines:

Spent batteries are collected and returned for recycling and/or disposal in accordance with prevailing regulations. Discarded batteries are isolated from the refuse waste stream to prevent potentially toxic materials from inappropriate disposal. The wet-cell battery-recycling program is kept separate from the dry battery collection process. Intact wet-cell batteries are sent back to the supplier. Dry-cell batteries are manifested to a licensed firm for recycling.

H. Bilge and Oily Water Residues: *ICCL member lines have agreed to meet and exceed the international requirements for removing oil from bilge and wastewater prior to discharge.*

The area of the ship at the very bottom of the hull is known as the bilge. The bilge is the area where water collects from various operational sources such as water lubricated shaft seals, propulsion system cooling, evaporators, and other machinery. All engine and machinery spaces also collect oil that leaks from machinery fittings and engine maintenance activities. In order to maintain ship stability and eliminate potential hazardous conditions from oil vapors in engine and machinery spaces, the bilge spaces should be periodically pumped dry. In discharging bilge and oily water residues, both international regulations (MARPOL) and United States regulations require that the oil content of the discharged effluent be less than 15 parts per million and that it not leave a visible sheen on the surface of the water.

All ships are required to have equipment installed onboard that limits the discharge of oil into the oceans to 15 parts per million when a ship is en route and provided the ship is not in a special area where all discharge of oil is prohibited. Regulations also require that all oil or residues, which cannot be discharged in compliance with these regulations, be retained onboard or discharged to a reception facility. The equipment and processes implemented onboard cruise ships to comply with these requirements are complex and sophisticated.

The term "en route" as utilized in MARPOL (73/78) Regulation 9(b) is taken to mean while the vessel is underway. The U.S. Coast Guard has informed ICCL that it agrees with this meaning of "en route."

In accordance with MARPOL (73/78) Regulation 20, ICCL member lines have agreed that every ship of 400 gross tons and above shall be provided with an oil record book which shall be completed on each occasion whenever any of numerous specified operations take place in the ship and that operations include:

- a. Ballasting or cleaning of fuel oil tanks,
- b. Discharge of dirty ballast or cleaning water from the fuel oil tanks above,
- c. Disposal of oily residues,
- d. And discharge of bilge water that accumulated in machinery spaces.

Requirements regarding the keeping of an Oil Record Book as well as the form of the Oil Record Book are also found in MARPOL and in U.S. Coast Guard regulations (33CFR151).

Handling Method Employed by Member Lines:

Bilge and oily water residue are processed prior to discharge to remove oil residues, such that oil content of the effluent is less than 15 ppm as specified by MARPOL Annex 1.

- I. Glass, Cardboard, Aluminum and Steel Cans: *ICCL member lines have agreed to eliminate, to the maximum extent possible, the disposal of MARPOL Annex V wastes into the marine environment through improved reuse and recycling opportunities, and that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.*

Management of shipboard generated waste is a challenging issue for all ships at sea. This is true for cruise vessels, other commercial vessels, military ships, fishing vessels and recreational boats. Waste products in earlier days were made from natural materials and were mostly biodegradable. Today's packaging of food and other products presents new challenges for waste management. A large cruise ship today can carry over three thousand passengers and crew. Each day, an average cruise passenger will generate two pounds of dry trash and dispose of two bottles and two cans.

A strategy of source reduction, waste minimization and recycling has allowed the cruise industry to significantly reduce shipboard generated waste. To attain this, ICCL member lines have agreed to adopt a multifaceted strategy that begins with waste minimization to decrease waste from provisions brought onboard. This means purchasing in bulk, encouraging suppliers to utilize more efficient packaging, reusable packaging, and packaging materials that are more environmentally friendly—those that can be more easily disposed of or recycled. In fact, through this comprehensive strategy of source reduction, total waste on passenger vessels has been reduced by nearly half over the past ten years.

Another important component of the industry's waste reduction strategy is product or packaging recycling. Glass, aluminum, other metals, paper, wood and cardboard are, in most cases, recycled.

Handling Method Employed by Member Lines:

MARPOL Annex V ship waste is minimized through purchasing practices, reuse and recycling programs, landing ashore and onboard incineration in approved shipboard incinerators. Any Annex V waste that is discharged at sea will be done in strict accordance with MARPOL and any other prevailing requirements.

- J. Incinerator Ash: *ICCL member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities, and that the discharge of incinerator ash containing hazardous components will be prevented through a program of waste segregation and periodic ash testing.*

Incinerator ash is not normally a hazardous waste. Through relatively straightforward waste management strategies, items that would cause the ash to be hazardous are separated from the waste stream and handled according to accepted hazardous waste protocols. In general, source segregation for waste streams is foundational for onboard waste management and is incorporated into the waste management manual required by MARPOL. Waste management for onboard waste streams include the following: source reduction, minimization, recycling,

collection, processing and discharge ashore. This allows the incinerator to be used primarily for food waste, contaminated cardboard, some plastics, trash and wood.

Member lines have agreed that incinerator ash will be tested at least once quarterly for the first year of operation to establish a baseline and that testing may then be conducted once a year. The member lines have further agreed that a recognized test procedure will be used to demonstrate that ash is not a hazardous waste. A recognized test procedure includes the following metals as indicators for toxicity - arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Special attention is placed on the removal of batteries from the incinerator waste stream. The use of incinerators saves landfill space and prevents the build up of material onboard that could become the breeding ground for insects, rodents and other vermin.

Handling Method Employed by Member Lines:

Proper hazardous waste management procedures are to be instituted onboard each ship to assure that waste products, which will result in a hazardous ash, are not introduced into the incinerator. Non-hazardous incinerator ash may be disposed of at sea in accordance with MARPOL Annex V. Ash identified as being hazardous is disposed of ashore in accordance with RCRA.

K. Wastewater reclamation

Because of the amounts of fresh water involved, and its restricted availability onboard ship (all fresh water must be either purchased or generated onboard), fresh water is a valuable commodity. Therefore, water management is extremely important and takes the form of both minimizing water usage and the potential reclamation and reuse of water for non-potable purposes. Many ICCL companies are researching new technology and piloting graywater treatment systems onboard their vessels. ICCL member operators also take numerous steps in onboard water management. Water management techniques include:

- a. Use of technical water (for example: air conditioning condensate) where possible.
- b. Use of water recovery systems (for example: filtering and reuse of laundry water - last rinse use for first wash).
- c. Reclamation and reuse as technical water (flushing toilets, laundry, open deck washing) of properly treated and filtered wastewaters.
- d. Active water conservation (for example: use of reduced flow showerheads, vacuum systems for toilets, vacuum food waste transportation and laundry equipment that utilizes less water).

- L. Graywater: *ICCL member lines have agreed to discharge graywater only while the ship is underway and proceeding at a speed of not less than 6 knots; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations.*

The term graywater is used on ships to refer to wastewater that is generally incidental to the operation of the ship. The International Maritime Organization (IMO) defines graywater as including drainage from dishwasher, shower, laundry, bath and washbasin drains. The US Clean Water Act (formally know as the Federal Water Pollution Control Act) includes galley, bath and shower water in its definition of graywater. The US regulations implementing this act do not

include a further definition of gray water. However, the regulations do include a provision that exempts all of the wastewater included in the IMO definition and other discharges incidental to the operation of a ship from the Clean Water Act's permitting program (formally known as the National Pollution Discharge Elimination System (NPDES) program). Finally, the US Coast Guard regulations include provisions that essentially combine the two definitions from the IMO and the Clean Water Act. None of the definitions of graywater include blackwater (discussed below) or bilgewater from the machinery spaces. Recent U.S. Legislation places limits on the discharge of graywater in the Alaska Alexander Archipelago.

Handling Method Employed by Member Lines:

Graywater is discharged only while ships are underway and proceeding at a speed of not less than 6 knots, in recognition that dispersal of these discharges is desirable and that mixing of these waters, which are discharged approximately 10-14 feet below the surface, by the action of the propellers and the movement of the ship, provides the best dispersal available.

- M. **Blackwater:** *ICCL member lines have agreed to discharge blackwater only while the ship is underway traveling at a speed of not less than 6 knots and in accordance with applicable regulation, and that blackwater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law, except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of blackwater will comply with all applicable laws and regulations.*

Waste from toilets, urinals, medical sinks and other similar facilities is called "blackwater." Most cruise ships separate blackwater from other wastewaters before processing and/or discharge.

Treated blackwater is processed using an approved "Marine Sanitation Device" (MSD) that is intended to prevent the discharge of untreated or inadequately treated blackwater. Marine Sanitation Devices use physical, chemical and/or biological processes to allow effluent from the process to be discharged with characteristics that are similar to effluents from conventional, shoreside wastewater treatment plants.

All MSDs are certified and approved by the US Coast Guard. The US Coast Guard consults with the Environmental Protection Agency in evaluating processes used to certify MSDs.

The US Coast Guard regularly inspects MSDs while onboard ships for proper operation during their Control Verification Examinations. If the Coast Guard has reason to believe that an MSD is not properly operating, it can require the vessel owner to have the effluent sampled and analyzed by a qualified wastewater laboratory, with the results reported to the Coast Guard.

Handling Method 1 Employed by Member Lines:

Blackwater is treated by a properly working, approved Marine Sanitation Device prior to discharge. As agreed with and required by the U.S. Coast Guard, MSDs are tested periodically to ensure continued operation in accordance with certification standards.

Handling Method 2 Employed by Member Lines:

Untreated blackwater is discharged into the ocean at a distance greater than 4 nautical miles from any land, coral reef or designated sensitive area in accordance with MARPOL or such other distance as agreed to with authorities having jurisdiction

N. Advanced Wastewater Treatment Systems:

To improve environmental performance, cruise lines are testing and installing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing standards for secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

O. Training and Educational Materials

Training is an important and ongoing part of every position and tasking onboard cruise ships. Not only is training necessary for the safe and economical operation of a ship, it is required by numerous international conventions and flag state regulations. The International Convention on Standards of Training Certification and Watchkeeping (STCW) for example, sets forth requirements for knowledge, experience and demonstrated competency for licensed officers of the deck and engineering departments and for ratings forming part of a navigation or engineering watch. These detailed requirements address not only the navigation of the ship but also the proper operation of the shipboard machinery and knowledge of and ability to assure compliance with the environmental protection requirements of MARPOL and the safety regulations of The International Convention on Safety of Life at Sea (SOLAS). SOLAS also requires that the ship's training manual (which contents are prescribed by regulation) be placed in the crew messes and recreation rooms or in individual crew cabins.

ICCL member lines have developed programs that raise the level of environmental awareness on the part of both the passengers and the crew. Each ship's crew receives training regarding shipboard safety and environmental procedures. Advanced training in shipboard safety and environmental management procedures is provided for those directly involved in these areas. Those directly responsible for processing wastes are given specific instruction in their duties and responsibilities and in the operation of the various equipment and waste management systems. Specific actions that our member lines have taken to train employees and increase passenger awareness include:

- a. Announcements over the public address system and notices in ship newsletters that caution against throwing any trash overboard,
- b. Signage and colorful posters placed in crew and passenger areas encouraging environmental awareness and protection,
- c. Safety and environmental information booklets in crew cabins and crew lounges,
- d. Regular meetings of ship safety and environmental committees consisting of officers and crew from all departments to review methods of improving performance, including better and more effective environmental practices.

STCW, SOLAS and the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) require that training be fully documented. Individual training is documented in each crewmember's file. Ship training exercises, such as fire drills and emergency response exercises, are documented in the appropriate ship's logs. All of these

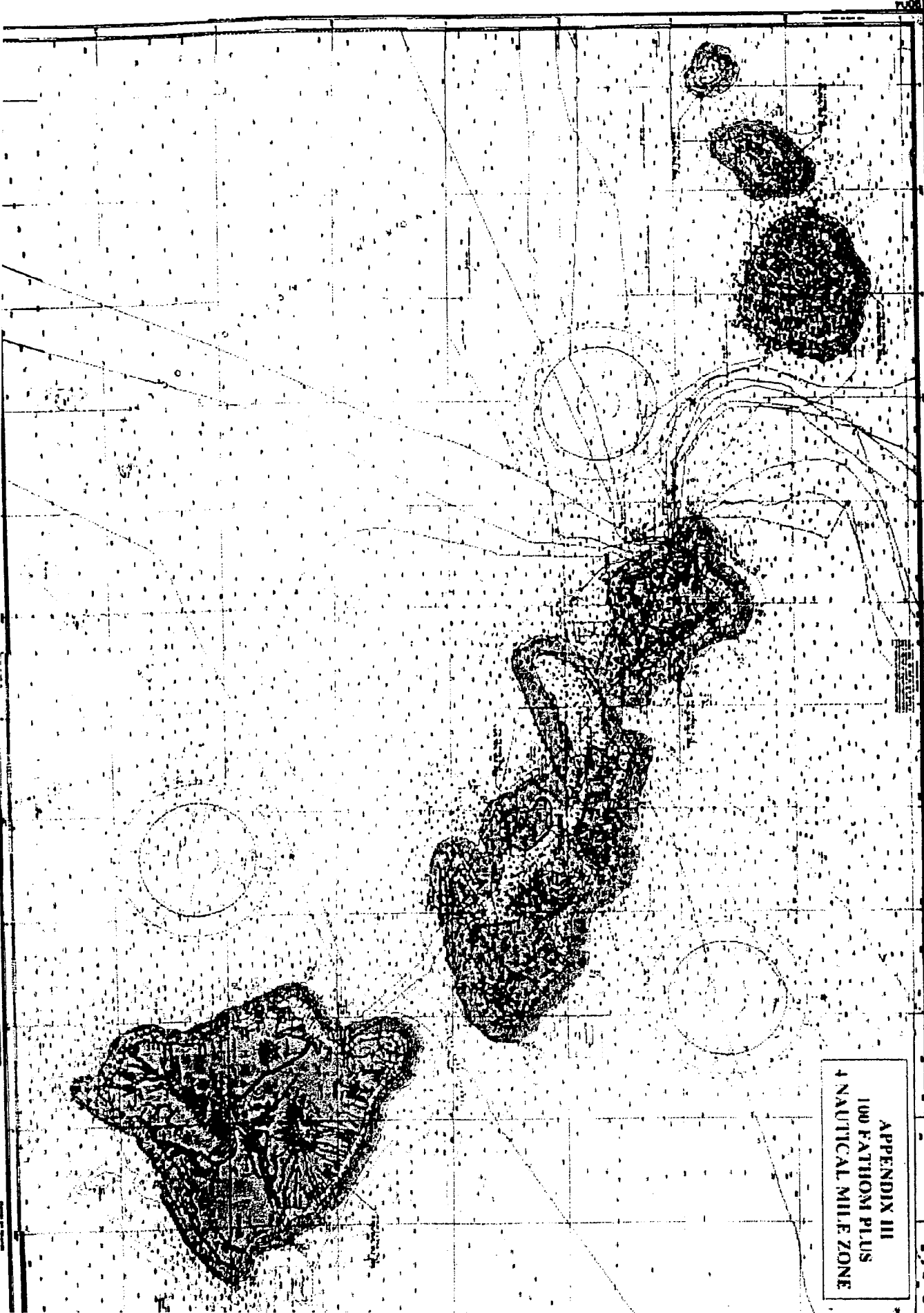
training documents are required to be available for oversight examination by both the ship's flag state inspectors and by port state authorities such as the United States Coast Guard.

Placards warning of the prohibition of the discharge of oil are posted on all ships operating in the navigable waters of the United States as required by U.S. Coast Guard regulations (33CFR155.450). Additionally, as part of required shipboard waste management plans, both Coast Guard regulations (33CFR151.59) and MARPOL (Annex V Regulation 9) require the posting of placards that notify the passengers and the crew of the disposal requirements for garbage. These placards are to be written in the official language of the State whose flag the ship is entitled to fly and also in English or French if neither of these is the official language. Once again, oversight of compliance with these requirements is conducted by ISM audits and frequent inspections by flag states and the United States Coast Guard.

The Safety of Life at Sea Convention mandates compliance with the ISM Code. This comprehensive Code requires that each vessel operating company and each vessel participate in a very strictly defined management program, under both internal and external audit and regulatory oversight, that sets forth detailed procedures for assuring compliance with safety, environmental protection, emergency response and training mandates.

Equivalent equipment, practices and procedures

ICCL member lines have agreed that the use of equivalent or other acceptable practices and procedures shall be communicated to ICCL. As appropriate, such practices and procedures shall be included as a revision to this document. As an example, when improved systems for treating blackwater and graywater are perfected, shown to meet the requirements for MSDs and accepted by appropriate authorities for the treatment of graywater, the new systems and associated technology will be included together with their impact on the current standard of discharging graywater only while underway.



Scale
1:50,000
Nautical Miles
Statute Miles

Scale
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Nautical Miles
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Scale
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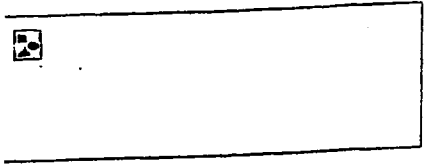
HAWAIIAN ISLANDS
SOUNDINGS IN FATHOMS

Scale
1:50,000
Nautical Miles
Statute Miles

Scale
1:50,000
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Statute Miles

Scale
1:50,000
Nautical Miles
Statute Miles

APPENDIX III
100 FATHOM PLUS
4 NAUTICAL MILE ZONE



Commandant
United States Coast Guard

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COMDTPUB P16711
NVIC X- 2001
SEPTEMBER XX, 2001

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. X - 2001

Subj: POLLUTION INSPECTION CHECKLIST AS ADDENDUM TO EXISTING FOREIGN PASSENGER VESSEL EXAMINATION BOOK, CG-840

- Ref:**
- (a) Memorandum of Understanding (MOU) dated March 14, 2000 entered between Florida Department of Environmental Protection (FDEP) and the Florida-Caribbean Cruise Association (FCCA), a representative of the cruise industry in Florida.
 - (b) International Council of Cruise Lines (ICCL) Industry Standard E-01-01, "Waste Management Practices and Procedures."
 - (c) General Accounting Office Report of February 2000 on "MARINE POLLUTION - Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain."
 - (d) Title IV "Certain Alaskan Cruise Ship Operations" contained in Section 1(a)(4) of Public Law 106-554 enacted on December 21, 2000.
 - (e) 33 CFR 159, Subpart E - Discharge of Effluents in certain Alaskan Waters by Cruise Vessel Operations

1. **PURPOSE:** The checklist contained in Appendix 1 will eventually be incorporated as an extension to the existing Foreign Passenger Vessel Examination Book, CG-840. It is an extensive list of all possible examination-items related to pollution prevention equipment, operation, plans and records. It is intended as a job aid to be used by Coast Guard senior marine inspectors during boardings of foreign-flagged passenger vessels. Inspectors should be especially familiar with the contents of the Marine Safety Manual (MSN), Volume II, Material Inspection, Section B, Chapter 6, "Pollution Prevention," and Section C, Chapter 2, Paragraph K, "Marine Sanitation Devices."
2. **DIRECTIVES AFFECTED:** This would revise the existing Foreign Passenger Vessel Examination Books CG-840, CV1, CV2 and CV3.
3. **DISCUSSION:** It is not the Coast Guard's intention to inspect all the items listed in the checklist at every exam; rather the inspector should use it as a reminder and use his/her own experience, knowledge, and judgment to determine the depth and scope of each examination. However, it is envisioned that the inspector will select at least one waste stream for a thorough and detailed examination. The selection will be based on the inspector's discretion, taking into

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account the inspectors impression about the condition of the various waste stream systems on board the vessel; weighing the need to inspect all systems over a reasonable period of time; and maintaining randomness so that the operator has no advance knowledge of the waste stream that may be selected. It is incumbent on the vessel operator to be familiar with this NVIC and its enclosure. The operator should be able to present to the inspector a clear description of the practices and procedures for handling each waste stream and also to produce such records, as the inspector might need to verify compliance with these guidelines. Inspectors should be familiar with ICCL's Industry Standard E-01-01 "Waste Management Practices and Procedures," and SMS documentation on ICCL cruise ships should closely follow this standard. The different waste streams may be categorized as follows:

- a. Oil pollution prevention systems, which include the oily water separator, the fuel/lubricating oil, transfer and sludge containment system. The inspector should verify that the oily water separator is operating within the desired range; that the alarms are working; that crew is knowledgeable and operating instructions are posted; and that maintenance is carried out at regular intervals. Actual piping may be verified against the approved piping diagram if the inspector notices modifications made to the system.
- b. Gray water system includes discharges from galley, sinks, washbasin drains, showers, and baths. These may be held in large tanks before being pumped overboard. The handling and discharge of gray water will vary from ship to ship and the inspector should ensure the procedures followed by the ship correspond to those described in its Ship Management System (SMS) documentation. Gray water should normally not be pumped through a Marine Sanitation Device (MSD) because an MSD is not designed to handle the volume of gray water produced on a cruise ship. Other waste streams such as hazardous waste or medical waste must also not be mixed with gray water. Drains from hospitals, photo labs, slops, must be separate from the gray water system.
- c. Black water system includes marine sanitation devices and other systems to treat, store, and discharge sewage. The checklist is designed to guide the inspector through some basic questions to ascertain whether the system is working as designed and that the crew is properly trained in its operation. For example, does the MSD appear to be properly installed? Is there adequate capacity for the number of persons on board? Are maintenance procedures being followed? Are there records of expendables being ordered: filters, chemicals, et cetera? Are the units operating within the manufacturer's design specifications? Are there clear and simple operating instructions? Is the crew knowledgeable in the use of the equipment/system?
- d. Hazardous waste includes dry cleaning (PERC) waste, used paints and thinners, silver-bearing photo-processing waste, cleaning solutions and other similar items. Each vessel may vary in both the type and volumes of hazardous waste generated depending on the technology and processes aboard ship. This checklist is designed to evaluate on-board management of hazardous waste streams and to ensure that hazardous constituents are not released into the environment and that accountability is demonstrated via adequate waste disposal records.
- e. Non-hazardous waste. This would include shipboard garbage including plastics and synthetic material, medical waste, food wastes and recyclables such as glass, cardboard,

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aluminum and metal cans. Items to be checked should include waste sorted to prevent hazardous waste from entering the non-hazardous waste stream; no plastics or synthetics discharge overboard, separate and proper disposal of hazardous and non-hazardous incinerator ash; and proper disposal of grease from grease traps.

4. BACKGROUND:

- a. On March 14, 2000, the Florida Caribbean Cruise Association (FCCA) signed a Memorandum of Understanding (MOU) with the Florida Department of Environmental Protection (FDEP) (Ref 1). Under this MOU, the FDEP recognized ICCL's Industry Standard E-01-01 "Waste Management Practices and Procedures," as meeting or exceeding the standards set forth in Florida laws and applicable Florida regulations. Though the Coast Guard was not a party to the MOU, the Coast Guard was in attendance during the signing and during prior discussions leading up to the MOU.
- b. The FDEP also recognized the Coast Guard as the primary federal agency with the responsibility to examine cruise vessels for the proper administration of waste streams. As a result the Coast Guard worked in conjunction with FDEP and ICCL to develop a checklist section related to monitoring of hazardous waste and disposal.
- c. At the same time, a number of other pollution prevention initiatives were also underway. The General Accounting Office (GAO) had just completed a report to Congress (Ref. 3) recommending that the Coast Guard initiate discussions with the cruise ship industry, other federal and state agencies, and environmental groups as appropriate, on the need for improved water quality standards for gray water and black water discharged from cruise ships and other vessels and assess the need to periodically monitor the water quality of these discharges. Subsequently, legislation was passed (Ref. 4) and regulations were promulgated (Ref. 5) related to monitoring and sampling of black water and gray water on cruise ships in Alaska.
- d. The Coast Guard has taken this opportunity to prepare this checklist consolidating all CG pollution inspection items on passenger vessels and fill in the gaps as needed. The checklist was developed by the CG in conjunction with FDEP and ICCL.

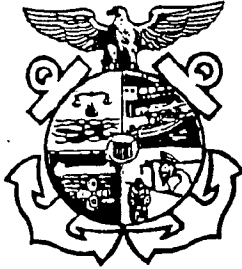
5. ACTION: Officers in Charge Marine Inspections (OCMIs) should:

- a. Bring this circular to the attention of appropriate individuals in the marine industry within their zones, especially those in the industry that are not members of ICCL.
- b. Follow the guidance in this circular while conducting control verification examinations on passenger vessels.
- c. If a vessel is detained for non-conformance with RCRA, notify the State RCRA program office immediately.

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Encl: (a) Pollution inspection checklist for passenger cruise vessels

United States Coast Guard



**FOREIGN PASSENGER VESSEL
POLLUTION SURVEY EXAM BOOK**
(FOR ALL PASSENGER VESSELS)

Name of Vessel	Flag <input type="checkbox"/> No Change								
IMO Number	Case Number								
Date Completed									
Location									
Senior Marine Inspectors / Port State Control Officers <table><tr><td>1. _____</td><td>5. _____</td></tr><tr><td>2. _____</td><td>6. _____</td></tr><tr><td>3. _____</td><td>7. _____</td></tr><tr><td>4. _____</td><td>8. _____</td></tr></table>		1. _____	5. _____	2. _____	6. _____	3. _____	7. _____	4. _____	8. _____
1. _____	5. _____								
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se of Foreign Passenger Vessel Pollution Survey Exam Book

This Checklist is an extensive list of all possible examination items related to pollution prevention equipment, operation, plans and records. It is intended as a job aid to be used by Coast Guard senior marine inspectors during boardings of foreign-flagged passenger vessels. It is not the Coast Guard's intention to inspect all the items listed in the checklist at every exam; rather the inspector should use it as a reminder and use his/her own experience, knowledge, and judgment to determine the depth and scope of each examination. However, it is envisioned that the inspector will select at least one waste stream for a thorough and detailed examination. The selection will be based on the inspector's discretion, taking into account the inspectors impression about the condition of the various waste stream systems on board the vessel; weighing the need to inspect all systems over a reasonable period of time; and maintaining randomness so that the operator has no advance knowledge of the waste stream that may be selected. It is incumbent on the vessel operator to be familiar with this checklist. The operator should be able to present to the inspector a clear description of the practices and procedures for handling each waste stream and also to produce such records, as the inspector might need to verify compliance with these guidelines.

As a port state responsibility, senior marine inspectors/port state control officers must verify that the vessels and their crews are in substantial compliance with international conventions and applicable U.S. laws. The senior marine inspectors/port state control officers, based on their observations, must determine the depth and scope of the examination. This document does not establish or change Federal laws or regulations. References given are only general guides. Refer to IMO publications, United States Code, Code of Federal Regulations, the Port State Control Job Aid, NVIC's, and any locally produced guidance for specific regulatory references. Inspectors should be especially familiar with the contents of the Marine Safety Manual (MSN), Volume II, Material Inspection, Section B, Chapter 6, "Pollution Prevention," and Section C, Chapter 2, Paragraph K, "Marine Safety Devices."

NOTE: Guidance on how to examine foreign passenger vessels for compliance with pollution prevention can be found in Navigation Vessel Inspection Circular (NVIC) XX-2001.

Conducting the exam

- Complete Certificates/Equipment Data/Records information (Section A).
- Review SMS Environmental Procedures (Section B).
- Examine MSD, OWS, Garbage logs, Oil Record Book as per CG-840 Exam books for CVQ or CVE as appropriate.
- Select one of the following waste streams for a detailed exam (Section C)

Section

- C1 Oil Pollution Handling Waste Stream (Bilge, Sludge, Fuel, Lube Oil etc)
- C2 Gray Water Waste Stream
- C3 Black Water/Sewage Waste Stream
- C4 Hazardous Waste Stream
- C5 Non-hazardous Waste Stream

NOTE: Many items listed are not mandatory requirements, but fall under the umbrella of "Management Policy". Inspectors should be familiar with ICCL's Industry Standard E-01-01 "Waste Management Practices and Procedures," and SMS documentation on ICCL cruise ships should closely follow this standard. If the areas listed are corporate policy as set out in the company's Safety Management System (SMS), then the vessel should be held accountable for the actions as required in 33 CFR 96 and SOLAS Chapter IX. If state or local laws exist that are more stringent than US or international law, then the local or state laws must be followed. These vessels are not exempt simply because they are a foreign vessel.

Pre-inspection Items

- Review MSIS records
- PSVH
- MISN (past)
- MIAR (past)
- Print Center for Disease Control Green Sheet
<http://www2.cdc.gov/nceh/vsp/vspmain.asp>

Post-inspection Items

- Issue letters/certificates to vessel
- Issue Port State Control Report of Inspection-Form A
- Issue Port State Control Report of Inspection-Form B (if needed)
- Fill out Vessel Record Card (to include "Waste Stream" area inspected)
- MIAR activity case MARPOL (MAR) in addition to CCV or CVQ

Name of Certificate	Issuing Agency	ID #	Port Issued	Issued Date	Expiration Date	Endorsement Date
International Oil Pollution Prevention						
International Sewage Pollution Prevention Certificate (if Issued)						
US Public Health Report (USPH latest report)						
State Certificates of Emission (if applicable)						
State Certificates of Ballast Water (if applicable)						

Equipment Data

Equipment Name	Capacity	US or MEPC Approval Nr	Authority/Agency	Date of approval/acceptance
Oilly Water Separator	Throughput			
Oilly Water Separator	Throughput			
Oilly Water Separator	Throughput			
Waste Oil Holding Tank Capacity				
Marine Sanitation Device Certificate of Type Test	Volume/day			
Marine Sanitation Device Certificate of Type Test	Volume/day			
Marine Sanitation Device Certificate of Type Test	Volume/day			
Black Water Tank Capacity				
Gray Water Tank Capacity				

Pollution Records

	Date	Location	Amount
Last time bunkers were taken on			
Next time bunkers will be taken on			
Last time sludge/oily bilge water pumped ashore			
Last operation of OWS or overboard discharge			
Garbage Incinerated			
Garbage discharged overboard at sea			
Garbage discharged ashore			
Required U.S. Ballast Water Report			

SECTION _____
Certificates/Equipment Data/Record
Informatio

Section B
Environmental Procedures

Environmental Procedures can be found in the Ship Management System (SMS) documentation or in Company Policies and maintenance manuals, inspection logs, oil record books, etc. The inspector should question the ship staff on procedures and normal operations, and compare the answer to what is written in procedures and manuals.

- | | |
|---|---|
| <p><input type="checkbox"/> Current pollution prevention records</p> <ul style="list-style-type: none"> • Person-in-charge designated and qualified • Transfer equipment tests and inspections • Declaration of Inspection • Ship to provide PMS logs and required PMS activities for the selected waste stream for verification. • Verify SMS incorporates PMS activities and logs for all Waste Streams. | <p>33 CFR 156.150
33 CFR 155.700
33 CFR 156.170</p> |
| <p><input type="checkbox"/> Oil Record book (Part 1) (spot-check)</p> <ul style="list-style-type: none"> • Each operation signed by person-in-charge • Each complete page signed by master • Book maintained for 3 years • Use of proper codes and version for vessel • Transfer receipts/manifest match oil record book entries | <p>MARPOL Annex. I/20
33 CFR 151.25</p> |
| <p><input type="checkbox"/> Shipboard Oil Pollution Emergency Plan</p> <ul style="list-style-type: none"> • Approved by administration (class society) • Updated and current • In English and working language of crew • Correct contact numbers for National and Local Authorities (Port Authorities for ports visited not every COTP) • Immediate Actions List • Non Mandatory Provisions (if listed in SOPEP) Spill kits located and inspected | <p>MARPOL Annex.
I/26.1
33 CFR 151.26</p> |
| <p><input type="checkbox"/> Oil Transfer Procedures</p> <ul style="list-style-type: none"> • Posted / available in crew's language • Format in CFR order or cross reference index page • List/description of products carried by vessel • Description of transfer system including a line diagram of piping system (pumps, vents, valves, alarms, shutoffs, etc.) • Number of persons required on duty • Duties by title of each person • Means of communication (two-way voice) • Procedures to top off tanks and disconnect • Procedures to report oil discharges • Emergency response procedures (fire, spill, human exposure) | <p>33 CFR 155.720
33 CFR 155.750
33 CFR 154.310</p> |
| <p><input type="checkbox"/> Garbage Management Plan</p> <ul style="list-style-type: none"> • Garbage Record Book • Type, amount, location, date/time • Receipts • Each entry signed by Officer-in-Charge and each page by Master • Person-in-Charge Designated | |
| <p><input type="checkbox"/> Hazardous Waste Disposal Documentation</p> <ul style="list-style-type: none"> • EPA Generator ID# _____ • Records • Uniform Hazardous Waste Manifests • Land Disposal Restriction Notification Certification Forms (LDR) • Shipping Document for Regulated Medical Waste | |

Section B
Environmental Procedures
Con't

- | | |
|---|----------------------------|
| <input type="checkbox"/> MARPOL V placard posted | MARPOL Annex V/9 |
| <input type="checkbox"/> Garbage Management Plan | MARPOL Annex V |
| • Garbage Record Book | MARPOL Annex |
| • Type, amount, location, date/time | V/9(3) |
| • Receipts | MARPOL Annex |
| • Each entry signed by Officer-in-Charge and each page by Master | V/9(2) |
| <input type="checkbox"/> Person-in-Charge Designated | |
| <input type="checkbox"/> Non-Hazardous Waste Disposal Documentation | U.S. Local |
| • EPA Generator ID# _____ | Regulations as |
| • Records | applicable |
| • Non-Hazardous Waste Manifests | |
| <input type="checkbox"/> Records of consumables kept updated
Used and unused | Shipboard Records
(ISM) |
| <input type="checkbox"/> International Sewage Pollution Prevention Certificate (when MARPOL IV enacted) | MARPOL Annex IV |
| <input type="checkbox"/> Recycling policy being followed | Shipboard policy
(ISM) |

Section C1
Oil Pollution Handling Waste Stream (Bilge, Sludge, Fuel, Lube Oil etc)

Oil pollution prevention systems, which include the oily water separator, the fuel/lubricating oil, transfer and sludge containment system. The inspector should verify that the oily water separator is operating within the required range; that the alarms are working; that crew is knowledgeable and operating instructions are posted; and that maintenance is carried out at regular intervals. Actual piping may be verified against the approved piping diagram if the inspector notices modifications made to the system.

MARPOL Annex I/16

Oily water Separator

- Verify bilge suction piping (section) matches approved piping diagram (direct to OWS, to holding tank, etc.)
- Observe general housekeeping and cleanliness
- Witness operational test of OWS, evaluate operator competency. System operating in published ranges
- Test 15 ppm Oil Content Meter and alarm
- Verify system automatically recirculates (3-way valve) or shuts down when >15ppm
- Visually sample processed water
- Compare ship's operational maintenance routine with actual Preventative Maintenance conducted. Request proof/documentation of maintenance completed (used consumables from OWS, receipts of service, technician reports, contractor disposal records)
- Review meter calibration records
- Lab analysis of sample as appropriate/needed

33 CFR 155.450

Oil Pollution placard posted

MARPOL Annex I/19

Standard discharge connection

33 CFR 155.430

33 CFR 155.320

Fuel/Lube oil fill and sludge discharge containment

- Size (<1600GT ½ bbl, >1600GT 1 bbl)
- Fixed (Built after 30Jun74) or Portable (before 30Jun74)
- Drains
- Scupper closures

33 CFR 155.470

Prohibited oil spaces

33 CFR 155.790

Deck/Bunker Station lighting

33 CFR 155.800/805

Oil transfer hose (if vessel uses to transfer in U.S. waters) including Tender Hoses

33 CFR 154.500

33 CFR 156.170

- Condition
- Markings (MAWP, Man. Date, Test date)
- Hose assembly requirements (blanked off if not used)
- Tests and inspections

Waste oil incineration

- Tests and inspections
- Record keeping

Section C2
Grey Water Waste Stream

Gray water system includes discharges from galley, sinks, washbasin drains, showers, and baths. These may be held in storage tanks before being pumped overboard. The handling and discharge of gray water will vary from ship to ship and the Captain should ensure the procedures followed by the ship correspond to those described in its Ship Management System (SMS) documentation. Gray water should normally not be pumped through a Marine Sanitation Device (MSD) cause an MSD is not designed to handle the volume of gray water produced on a cruise ship. Other waste streams such as hazardous waste or medical waste must also not be mixed with gray water. Drains from hospitals, photo labs, etc., must be separate from the gray water system.

(Clean Water Act)
33 USC 1251 et seq.
33 CFR 159.300
Subpart E for (D17)
Local Regulations

] Sources

- Galley (ex. Dishwashers, floor drains, sinks)
- Showers/Baths & washbasin drains
- Laundry

] Prohibited Sources (hazardous materials, bilges, photo shop, print shop, hospital spaces etc.)

] Connections to the Black Water System

] Connections to Ballast Water System

] Number of tanks _____

] Total tank capacity _____ m3

] Volume Produced _____ (m3 per hour)

] Maximum number of days in port without discharging _____

] Sufficient capacity for persons on board and time in port?

] Review Gray water (SMS) Ship Management System documentation procedures.

] Ensure Quality Assurance / Quality Control Plan - vessel specific.

] Is Gray water processed and discharged?

] What are disposal Gray water procedures: Shore and at Sea. (company policy)

] What are their sampling procedures (vessel specific).

] How often do they take samples (record book if applicable)

] Samples test result - log record book.

] What are the State, Federal and local regulations for Gray water discharge?

] Disposal

- Shore
- At sea
- Sampling/Testing
- Note

Some gray water treatment employs advanced ultra-filtration systems, these systems claim to reduce gray water waste by 85% - 90%.

- Alaska - Effective July 2001, Operators of cruise vessels carrying 500 or more passengers and transiting applicable waters of Alaska are restricted in where they may discharge effluents and will be required to perform testing of sewage and gray water discharges. The Coast Guard will inspect, monitor, and oversee this process to ensure compliance with applicable water quality laws and regulations. (33 CFR 159)

Section C3
Black Water/Sewage Waste Stream

Black water system includes marine sanitation devices and other systems to treat, store, and discharge sewage. The checklist is designed to guide the inspector through some basic questions to ascertain whether the system is working as designed and that the crew is properly trained in its operation. For example, does the MSD appear to be properly installed? Is there adequate capacity for the number of persons on board? Are maintenance procedures being followed? Are there records of expendables being ordered: filters, chemicals, et cetera? Are the units operating within the manufacturer's design specifications? Are there clear and simple operating instructions? Is the crew knowledgeable in use of the equipment/system?

Sources

- Toilets, Urinals, Water Closets, scuppers
- All Drainage from Medical Premises, photo labs, slops, must be separate from the gray water system.
- System installed, maintained and operated in accordance with approved plans and manufactures specifications.
- Modifications documented
- Tank Capacity
- Volume Produced
- Chemical/Biological treatment
- Chemical Treatment Level
- Sufficient chemicals, additives, approved cleaning materials onboard. (enzymes, "Gamazyme", chlorine)
- Operating instructions

MARPOL Annex IV
(Pending
Ratification)
40 CFR 140.3 & .4
33 CFR 159.57
33 CFR 159.7
33 CFR 159.55
33 CFR 159.59
MARPOL Annex IV/8
40 CFR 140.3
MARPOL Annex IV/3
Resolution
MEPC.2(VI)
(pending ratification)
33 CFR 159.65
NVIC 9-82

U.S. Marine Sanitation Device Requirements

- Type (I, II, III)
- Nameplate
Should be designed to resist efforts of removal or efforts to alter the information.
- Placard
- Proper operation (macerators, treatment chemicals)
- Structural integrity, no leaks
- Certificate of Type Test

Foreign Flag Vessels in U. S. Waters

A foreign flag vessel that has a "Certificate of Type Test" under MARPOL Annex IV indicating that its sewage treatment plant meets the test requirements of Resolution MEPC.2 (VI) of the International Maritime Organization (IMO) will be accepted by the Coast Guard as being in compliance with 33 CFR 159.7(b) or (c). The Certificate of Type Test must be issued by or on behalf of a government that is a party to the MARPOL convention. Such a plant will be considered as fully equivalent to a Coast Guard certified Type II MSD as long as the unit is in operable condition. However, the unit may not be labeled as USCG certified. U.S. registered vessels will continue to be required to have Coast Guard certified MSDs per 33 CFR 159.

Standard Discharge Connection (when Annex IV enacted)

- New ships 200 gross tons and above
- New ships less than 200 gross tons and carry more than 10 persons.
- Existing ships 200 gross tons and above after 10 years after the date entry into force of Annex IV

Disposal

- Shore
- Overboard valves secured
- At sea (provide proof of location discharge)
- Logged position, speed (if required by management)
 - When comminuted and disinfected greater than 4 miles.
 - When not comminuted or disinfected greater than 12 miles.
 - Both to be discharged while ship is underway at greater than 4 knots.

33 CFR 159.7
40 CFR 140.4
40 CFR 136

- EPA Prohibited Areas
- Connections to the gray water system

Alaskan Waters:
Effective July 2001, Operators of cruise vessels carrying 500 or more passengers and transiting applicable waters of Alaska are restricted in where they may discharge effluents and will be required to perform testing of sewage and graywater discharges. The Coast Guard will inspect, monitor, and oversee this process to ensure compliance with applicable water quality laws and regulations. (33 CFR 159).

Sampling/Testing

- Lab analysis of fecal coliform/total suspended solids in effluent
- Results of residual chlorine content in effluent testing
- Calibration records for dousing pump/proportioner

Section C4
Hazardous Waste Stream

Hazardous waste includes dry cleaning (PERC) waste, used paints and thinners, silver-bearing photo-processing waste, cleaning solutions and other similar items. Each vessel may vary in both the type and volumes of hazardous waste generated depending on the technology and processes aboard ship. This checklist is designed to evaluate on-board management of hazardous waste streams and to ensure that hazardous constituents are not released into the environment and that accountability is demonstrated via adequate waste disposal records.

Hazardous Waste

- Has the company conducted a waste determination? Through Process Knowledge or Waste Analysis (circle one)? If not, hazardous waste may not be landed.
- Have responsible personnel received initial and refresher training.
- Is there any evidence that hazardous wastes are being incinerated, diluted, neutralized, or evaporated as a means of disposal.
- Is there any evidence of hazardous material being discharged overboard?
- Are hazardous wastes being properly stored, maintained, labeled, and placarded? Note any observations made of deficiencies, dates and nature of repairs.
- Does the crew have ready access to spill control and decontamination equipment?
- Are records maintained and manifests completed for potential hazardous waste streams as follows:
 - Silver Bearing Photo Processing Waste (developers, wash water, Silver Recovery Units)
 - X-Ray equipment
 - Print Shop Waste (inks, dyes, cleaning solvents)
 - Used Solvents, Paints & Thinners
 - Fluorescent/Mercury Vapor Bulbs
 - Batteries:
 - Nickel Cadmium (Nicad)
 - Lead Acid
 - Lithium
 - Alkaline
 - Pharmaceuticals/Narcotics
 - Dry Cleaning Waste (PERC, lint, sludge, filters, condensate water)
 - Aerosol Cans
 - Cleaning Solutions (de-scalers, acids, bases)
 - Expired pyrotechnics
 - Rags contaminated with hazardous wastes

40 CFR 262
49 CFR 173
RCRA
SARA Title III
42 USC 11002(a)(3)
40 CFR 355 App A / B

The following excerpt from 40 CFR 262 regarding Resource Conservation and Recovery Act (RCRA) requirements is provided for background information only. The State RCRA program office must be consulted if any clarifications are needed for a particular situation.

HAZARDOUS WASTE HANDLING REQUIREMENTS

§ 262.11 Hazardous waste determination.

A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the following method:

- (a) Determine if the waste is listed as a hazardous waste in subpart D of 40 CFR part 261.
- (c) Or if not listed in subpart D of 40 CFR part 261, generator must determine if the waste is identified in subpart C of 40 CFR part 261 by either:
 - (1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261
 - (2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

262.12 EPA identification numbers.

- (a) A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Administrator.

262.20 General requirements.

- (a) A generator who transports, or offers for transportation, hazardous waste for offsite treatment, storage, or disposal must prepare a Manifest OMB control number 2050-0039 on EPA form 8700-22, and, if necessary, EPA form 8700-22A, according to the appendix to part 262.
- (b) Generator must designate on manifest one facility that is permitted to handle the waste described on the manifest.

262.23 Use of the manifest.

- (a) The generator must:
 - (1) Sign the manifest certification by hand; and
 - (2) Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and
 - (3) Retain one copy, in accordance with § 262.40(a) and give the transporter the remaining copies of the manifest.

262.30, .31, .32 & .33 Packaging, Labeling, Marking and Placarding.

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package, label, mark and placard the waste in accordance with the applicable Department of Transportation regulations on packaging under 49 CFR parts 172, 173, 178, and 179. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 110 gallons or less used on such transportation with the following words and information displayed in accordance with the requirements of 49 CFR 172.304: **HAZARDOUS WASTE - Federal Law Prohibits Improper Disposal**. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency. Generator's Name and Address - - - - - . Manifest Document Number - - - - - .

262.34 Accumulation time.

A generator may accumulate hazardous waste on-site for 90 days or less for large quantity generator and 180 days or less for small quantity generator, without a permit or without having interim status. The date upon which each period of accumulation begins must be clearly marked and visible for inspection on each container and while being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste."

§ 262.40 Recordkeeping.

- (a) A generator must keep a copy of each manifest signed in accordance with § 262.23(a) for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.
- (b) A generator must keep a copy of each Biennial Report and Exception Report for a period of at least three years from the date of the report.
- (c) A generator must keep records of any test results, waste analyses, or other determinations made in accordance with § 262.11 for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal.

Section C5
Non-Hazardous Waste Stream

Non-hazardous waste would include shipboard garbage including plastics and synthetic material, certain medical wastes, food wastes and recyclables such as glass, cardboard, aluminum and metal cans. Items to be checked should include waste sorted to prevent hazardous waste from entering the non-hazardous waste stream; no plastics or synthetics are to be discharged overboard, separate and proper disposal of hazardous and non-hazardous incinerator ash; and proper disposal of grease from grease traps.

33 CFR 151.63
MARPOL Annex V/9
MARPOL Annex V/3

- Garbage Management Procedures
 - Shipboard garbage properly handled in accordance with Garbage Management Plan
 - No plastics or synthetics discharged overboard
 - Waste sorted to prevent hazardous waste entering non-hazardous waste stream or incinerated.
 - Incinerator ash if discharged overboard free of plastic residue (clinkers) or free of unburned food wastes if landed ashore.
 - Foreign Food Wastes handled per APHIS regulations
 - Medical Wastes-incinerated or manifested as Bio-Hazardous Waste.
 - Discharged outside of special areas only (when special area restrictions are in effect)
 - Incinerator operation observed (if in operation)
- Procedures to minimize amount of potential garbage
 - Is vessel encouraging ship suppliers to consider alternate means of packing, use of other than plastics?
 - Is vessel using reusable packing?
 - Is waste generated while in port disposed to shore reception facility prior to sailing.
- Recycling
 - Is ships crew following policy for recycling.
- Maintenance conducted on equipment
 - Incinerator
 - Grinders
- Human factors
 - Crew in garbage room comfortably positioned to perform jobs.
 - Warning signs posted around equipment.
 - Personal protective equipment available, functioning and in place.
 - Sanitation, from a health standpoint, being maintained (ILO 147).
- Record keeping
 - Garbage Record Book
 - Type, amount, location, date/time
 - Receipts
 - Each entry signed by Officer-in-Charge and each page by Master
 - Any reports of alleged inadequacy of port reception facilities for garbage on file.

AGENT

Vessel representative hired by the ship's owners. Ship's agent may be tasked with various jobs such as: ensuring proper vessel documentation and compliance.

AUTOMATIC STOPPING DEVICE

Is a control mechanism that ensures discharge is stopped when the oil content of the effluent exceeds 15 parts per million (PPM).

BALLAST

Used to improve the stability and control the draft of a ship. (In Ballast - having only ballast for a load)

BLACK OIL

A black or very dark brown colored layer of oil. Depending on the quantity spilled, oil tends to quickly spread out over the water surface to a thickness of about one-millimeter.

BLACK WATER (sewage)

Examples - possible sources toilets, urinals, and medical waste.

CARGO SHIP

Any ship which is not a passenger ship.

COTP

Captain of the Port.

CWA

Clean Water Act.

CVE

Control Verification Exam.

DISPERSION

The breaking up of an oil slick into small droplets which are mixed into the water column as a result of breaking waves and other sea surface turbulence.

EFFLUENT

To flow out. (Waste material, refuse, and sewage)

EMULSIFICATION

The formation of a water - in - oil mixture. The tendency for emulsification to occur varies with different oils and is much more likely to occur under high-energy conditions (wind and waves).

EPA

Environmental Protection Agency

15 PPM ALARM

An alarm that activates when the effluent passing through oil-filtering equipment exceeds 15 PPM.

GRAY WATER

Includes discharges from galley, sinks, washbasin, drains, showers and baths. These may be held in large tanks prior to being discharged overboard (State, Fed, regulation permitting).

HSSC

Harmonized system of survey and certification.

ICCL

International Counsel of Cruise Lines, participates in regulatory and policy development process to promote all measures that foster a safe, secure, healthy cruise ship environment.

CLL
International Convention for Load Lines.

MO
International Maritime Organization. Specialized agency of the United Nations concerned solely with maritime affairs. Responsible for international treaties, conventions, resolutions and codes to improve Maritime safety.

ISM
International Safe Management

MARPOL
The international convention for the prevention of pollution from ships.

MSC
Maritime Safety Committee. The highest technical body of the IMO deals with issues such as aids to navigation, vessel equipment, and construction, manning requirements handling dangerous cargoes, hydrostatic information and marine casualty information.

MSD
Marine Sanitation Device.

OIL CONTENT METER
An instrument used to measure continuously the oil content of the effluent in the line to ensure that the operation does not contravene the convention.

OIL FILTERING EQUIPMENT
Equipment that uses any combination of a separator, filter or coalescer, and also a single unit designed to produce an effluent with oil content less than 15ppm. (MARPOL reg 16(1))

Oily Water Separator
The basic principle of oil / water separation is their difference in specific gravity. The specific gravity of most oils is less than water; therefore, it will naturally float to the top of an oil / water solution. Small droplets of oil float to the top much slower than large droplets. This is due to the large surface area to mass ratio. To speed up the process of separation, OWS units form larger oil droplets out of smaller ones, thus decreasing the surface area to mass ratio. The increased mass of the oil droplet increases its buoyancy, thus causing it to rise more quickly.

PASSENGER SHIP
A ship which carries more than 12 passengers.

PMS
Preventative Maintenance System

QUALIFIED INDIVIDUAL (QI)
The person authorized by the responsible party to act on their behalf, authorize expenditures and obligate organization's resources.

RCRA
Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the issue of how to safely manage and dispose of the huge volumes of municipal and industrial waste generated nationwide.

RECOVERABLE OIL
Oil that is in a thick enough layer on the water to be recovered by conventional techniques and equipment. Only black or dark brown oil, mousse, and heavy sheens (dull brown) are generally considered thick enough to be effectively recovered by skimmers.

SEPARATION EQUIPMENT
A device designed to remove enough oil from an oil-water mixture to provide a resulting mixture with an oil content of less than 100ppm, or 15ppm, such as an Oily Water Separator (OWS).

SLICK
Oil spilled on the water, which absorbs energy and dampens out the surface waves making the oil appear smoother or slicker than the surrounding water.

HEEN

A sheen is a very thin layer of oil (less than 0.0001 inches or 0.003mm) floating on the water surface and is the most common form of oil seen the later stages of a spill. According to their thickness, sheens vary in color ranging from dull brown for the thicker layers to rainbows, grays silvers and almost transparent for the thinnest layers.

SLUDGE TANKS

Every ship of 400 GT or more must be provided with a tank or tanks of adequate capacity, in regard to type of machinery and length of voyage, to receive the oil residues (sludge) which cannot be dealt with otherwise in accordance with MARPOL Annex I.

SMS

Safety Management System (sometimes referred to as an SQM).

SOLAS

Safety of Life at Sea. The international convention for the Safety of Life at Sea.

SOPEP

Shipboard Oil Pollution Emergency Plan.

STCW

The international convention on Standards of Training, Certification and Watchkeeping. (STCW)

TANKER

Is a cargo ship constructed or adapted for the carriage in bulk of liquid cargoes of an inflammable nature.

TARBALLS

Weathered oil that has formed pliable balls or patches that float on the water. Tarballs may vary in size from millimeters to on foot across. Depending on exactly how weathered or hardened, the outer layer of the tarball is, sheen may or may not be present.

TRANSFER

Any movement of oil or hazardous material to, from or within a vessel by means of pumping, gravitation, or displacement.

Appendix V - Hawaii MOU

Single EPA ID Number for Cruise Ships State Required Annual Reporting Components

EPA and the Florida Department of Environmental Protection have developed a guidance for assigning identification numbers (ID #) to individual cruise ships. Florida in conjunction with other States developed procedures for annual reporting to meet State requirements.

Single ID number per cruise ship:

We are proposing that individual cruise ships be assigned EPA ID #s as generators of hazardous waste for purposes of RCRA. The procedures being proposed are detailed below.

A cruise ship would determine its American-based home port State (the State in which it has its main port of call). After determining the home port State, the cruise line would notify that State or EPA Regional office of its hazardous waste activities and the generator size of each cruise ship based on the quantity of hazardous waste generated per ship in accordance with 40 CFR 261.5(c). The home port State or EPA Regional office will issue an EPA identification number for each individual cruise ship using the current established procedure. The number will reflect the home port State initials and ten alpha numeric characters. We are recommending that the State consider a ship's International Maritime Organization number (ship registry number). This is generally a five to seven digit number. Zeros can be added before or after the number to reach the required ten spaces. (RCRAInfo will reject duplicate numbers; therefore, placing the zeros after the IMO number would be a better practice.) Using the IMO number will allow for coordination with the Coast Guard, as this is the number they use most often.

To identify the ID as a cruise ship, enter the SIC code 4481 "deep sea passenger transportation, except by ferry". In 2002 with the next release of RCRAInfo, NAICS codes will replace SIC codes. The corresponding NAICS code which will then apply is 483112 "deep sea passenger transportation". Anyone wishing to generate a report on cruise ships can structure the query referencing the SIC or NAICS code to retrieve the ID's for cruise ships.

After the identification number is assigned, it will remain with that ship and be used on all hazardous waste manifests regardless of where the waste is offloaded in the U.S. The assignment of the ID number will not impact the applicability of State-specific RCRA requirements. For example, when waste is offloaded in a State, the cruise ship will comply with that particular State's RCRA requirements whether or not that State assigned its ID number. The ship will be required to provide records to the individual State as required by State law.

Appendix VI- Hawaii MOU

Submission of State Annual Reports for inclusion into the EPA Biennial Report System:

Cruise ships, as generators, are under the same national and State-specific reporting requirements as all generators. Depending on a cruise ship's "home port State", reporting requirements will vary and any required reports are due to the responsible government agency.

Currently the States send reports to EPA to be input into the Biennial Reporting System (BRS) on a biennial basis. However, many States require annual reporting from generators and treatment, storage, and disposal facilities rather than biennial reports. Therefore, for any generator, such as the cruise ship, the annual report required by the State could be modeled from the existing PC-based national electronic submittal/reporting system for BRS. An example of this database is available at:

<http://www.epa.gov/epaoswer/hazwaste/data/brs01/forms.htm> and a working model of the BRS type software is available from the State of Florida

Department of Environmental Protection at:

www.dep.state.fl.us/dwm/programs/hazardous/brs/data.htm.

Manifest data may be input and submitted via BRS data files (flat files), then uploaded to the national RCRAInfo BRS portion of the database. Reports could be generated by the cruise ship company using the BRS-type software, while the States and EPA could generate reports directly from RCRAInfo. The BRS software is capable of reporting waste by individual state, all wastes offloaded by the entire cruise line fleet, by each vessel, and at each State port facility. This software can be provided to the cruise lines and the cruise lines can then submit information in flat file format electronically to the home port state or any requesting state. Reports may be submitted electronically or hard copy as required by state law. Canada or other foreign countries with manifest requirements could potentially be aggregated in the same program for reporting purposes.

States wishing to record waste activity outside the federally mandated biennial report cycle may use the national RCRAInfo database to house that information (i.e., the annual report) as long as the data created meets the required file specifications. This information will only be available if it is provided by the States to EPA. Once in the database, any State will have read access to the information. Confidential business information will not be entered into the database.

Listed below are examples of the type information that can be input or retrieved from the database.

TARGETED LISTS:

This option brings up a set of choices to create a list of generators that generate wastes fitting a set of criteria as identified in further choice boxes, along with the amount of generation of the criteria wastes in tons by year. Lists can be created based on location (City/County), wastes, site name, or on-site activities, with an optional second layer filter for waste types and/or sources. The output may be p

rinted, viewed, or copied to a file in EXCEL, DBF, or Text format, totaled by year or other parameter, or sorted by value. This list may also be used as a filter for other reports to report on only wastes generated by the given subset of generators.

SUMMARY REPORTS:

Generation:

These options bring up a set of choices to create a summary of waste generation in tons by year: sorted by Origin, SIC, Source, Waste Code or Waste Type (Form code); fitting a set of criteria as identified in further choice boxes. EPA Waste Code reports will total to over 100% due to multiple WASTE CODE listings per waste. This summary may optionally be done for only a selected list of generators. There is also an optional second layer filter for waste form types and/or sources to be included in the summary amounts. The output may be printed, viewed, copied to a file in EXCEL, DBF, or Text format, or totaled by year.

Shipments:

These options bring up a set of choices to create a summary of waste shipped off-site in tons by year: sorted by Origin, SIC, Source, Receiving Facility, or Waste Type (Form code); fitting a set of criterion as identified in further choice boxes. This summary may optionally be done for only a selected list of generators. There is also an optional second layer filter for waste types and/or sources to be included in the summary amounts. The output may be printed, viewed, copied to a file in EXCEL, DBF, or Text format, or totaled by year.

Appendix VII- Hawaii MOU

TITLE XIV--CERTAIN ALASKAN CRUISE SHIP OPERATIONS

SEC. 1404. LIMITATIONS ON DISCHARGE OF TREATED SEWAGE OR GRAYWATER.

(a) No person shall discharge any treated sewage or graywater from a cruise vessel into the waters of the Alexander Archipelago or the navigable waters of the United States within the State of Alaska or within the Kachemak Bay National Estuarine Research Reserve unless--

- (1) the cruise vessel is underway and proceeding at a speed of not less than six knots;
- (2) the cruise vessel is not less than one nautical mile from the nearest shore, except in areas designated by the Secretary, in consultation with the State of Alaska;
- (3) the discharge complies with all applicable cruise vessel effluent standards established pursuant to this Title and any other applicable law; and
- (4) the cruise vessel is not in an area where the discharge of treated sewage or graywater is prohibited.

(b) The Administrator, in consultation with the Secretary, may promulgate regulations allowing the discharge of treated sewage or graywater, otherwise prohibited under paragraphs (a)(1) and (a)(2) of this section, where the discharge meets effluent standards determined by the Administrator as appropriate for discharges into the marine environment. In promulgating such regulations, the Administrator shall take into account the best available scientific information on the environmental effects of the regulated discharges. The effluent discharge standards promulgated under this section shall, at a minimum, be consistent with all relevant State of Alaska water quality standards in force at the time of the enactment of this Title.

(c) Until such time as the Administrator promulgates regulations under paragraph (b) of this section, treated sewage and graywater may be discharged from vessels subject to this Title in circumstances otherwise prohibited under paragraphs (a)(1) and (a)(2) of this section, provided that--

- (1) the discharge satisfies the minimum level of effluent quality specified in 40 CFR 133.102, as in effect on the date of enactment of this Section;
- (2) the geometric mean of the samples from the discharge during any 30-day period does not exceed 20 fecal coliform/100 ml and not more than 10 percent of the samples exceed 40 fecal coliform/100 ml;
- (3) concentrations of total residual chlorine may not exceed 10.0 mg/l; and,
- (4) prior to any such discharge occurring, the owner, operator or master, or other person in charge of a cruise vessel, can demonstrate test results from at least five samples taken from the vessel representative of the effluent to be discharged, on different days over a 30-day period, conducted in accordance with the guidelines promulgated by the Administrator in 40 CFR Part 136, which confirm that the water quality of the effluents proposed for discharge is in compliance with paragraphs (1), (2) and (3) of this subsection. To the extent not otherwise being done by the owner, operator, master or other person in charge of a cruise vessel pursuant to section 1406, the owner, operator, master or other person in charge of a cruise vessel shall demonstrate continued compliance through periodic sampling. Such sampling and test results shall be considered environmental compliance records that must be made available for inspection pursuant to section 1406(d) of this Title.

Attachment 7

Accepted Industry Standards

ACCEPTED INDUSTRY STANDARDS
1998-1999 Cargo & Passenger Vessel Inspection Advisory Committee

Owners and/or operators of cargo and passenger vessels 300 gross tons and larger operating in Washington waters should...

I. OPERATING PROCEDURES

BRIDGE WATCH PROCEDURES

Employ a Bridge Resource Management (BRM) system that is consistent with STCW '95 and includes the following elements:

1. Formal underway watch conditions for open sea transits, coastal and restricted waters navigation, and restricted visibility conditions.
2. Watch composition for each condition.
3. Procedures for navigation with a pilot embarked.
4. Procedures for bridge team response to emergencies.
5. Clear delegation of duties, responsibilities and authority between bridge team members, including a clear policy for determining when the master has assumed control of the vessel from the deck watch officer or the state licensed pilot.
6. Procedures for both internal and external communication for each watch condition.
7. On-going monitoring and correction of the voyage plan and recording of significant deviations from the plan in the bridge log.

HELMSMAN AND LOOKOUT

Ensure that lookouts are assigned no other duties and that the helmsman does not serve as lookout.

PILOT/MASTER EXCHANGE OF INFORMATION

Employ a pilot card and procedures to facilitate coordination and communication with state-licensed pilots.

SECURITY ROUNDS

Ensure that security rounds of the vessel are conducted hourly while in port or at anchor and at least once per watch while underway. The Master should designate spaces on the vessel to be visited during the security rounds in standing orders or other instructions to watchstanders. The primary purpose of security rounds is to detect and report fires, flooding and/or unsafe conditions. Vessels in lay-up status are not affected by this standard.

ANCHOR WATCH

Ensure that a licensed deck officer is standing watch on the vessel's bridge and monitoring the vessel's position while anchored in state waters.

GROUND TACKLE READINESS

Ensure that vessel anchors are clear and ready to drop, when safe and practicable, while underway in state waters.

VOYAGE PLANNING

Employ a documented voyage planning system for the entire transit through state waters that includes the following minimum elements:

1. Review of general waterway characteristics.
2. Navigational aids.
3. Charts, navigational publications, and notices to mariners.
4. Expected traffic levels.
5. Environmental (weather and currents) conditions expected.
6. Pilotage.
7. Vessel traffic services (VTS) procedures and communications.
8. Berthing/anchoring arrangements (if known).
9. Engineering considerations.
10. Voyage-specific amendments or additions to standard emergency procedures.

CHARTS AND PUBLICATIONS

Ensure that all charts and navigational publications covering state waters to be transited are correct and current.

ENGINE ROOM CREWING

Ensure that licensed engineer officers are on watch in the engine room and engine control room, if equipped, while underway in state waters. In addition, an unlicensed engineer rating should be on watch in the engineering spaces while underway in state waters.

ENGINEERING WATCH PRACTICES

Employ engineering watch practices that are consistent with STCW '95 and address, at a minimum, the following:

1. Formal underway watch conditions for open sea transits, and coastal and restricted waters transits.
2. Watch composition for each condition.
3. Procedures for taking over and performing a watch under various conditions and in various waters.
4. Procedures for engineering responses to emergencies.
5. Clear delegation of duties, responsibilities and authority between watch members.
6. Procedures for both internal and external communications for each watch condition.
7. Inspection, maintenance and operation of the propulsion, steering and power generating systems that meet international and federal requirements, and manufacturers' recommendations.

NAVIGATION EQUIPMENT ERROR CHECKS

Ensure that all radars, gyrocompasses, magnetic compasses and compass repeaters in use are properly calibrated, and checked for errors at least once per watch, while underway in state waters.

ELECTRICAL SYSTEMS

Ensure that standby and emergency generators are proven operational no more than 12 hours prior to entering or operating in state waters.

FUEL OIL SYSTEMS

Ensure that primary and back-up fuel pumps are proven operational, and fuel oil settler and service tanks are filled with adequate clean oil for the entire transit through state waters, no more than 12 hours prior to entering or operating in state waters.

LUBE OIL SYSTEMS

Ensure that primary and back-up lube oil systems; including pumps, piping, valves, and switching mechanisms are proven operational no more than 12 hours prior to entering or operating in state waters.

OIL STRAINERS

Ensure that all fuel and lube oil strainers are cleaned and ready for use no more than 12 hours prior to entering or operating in state waters.

COOLING WATER SYSTEMS

Ensure that all cooling water primary and back-up circulating systems; including pumps, lines, valves, and automatic and manual switching mechanisms are proven operational no more than 12 hours prior to entering or operating in state waters. In addition, scoop injection cooling water systems, if installed, should be secured before entering state pilotage waters.

CONTROL/START AIR SYSTEMS

Ensure that control and starting air system tanks are full, all primary and back-up air compressors have been proven operational, and condensate in the system has been properly drained, no more than 12 hours prior to entering or operating in state waters.

STEERING GEAR FLAT

Ensure that primary and back-up steering systems are tested no more than 12 hours prior to entering or operating in state waters. In addition, the steering gear flat should be inspected hourly while the vessel is underway in state waters, unless a remote monitoring system is installed.

CARGO OPERATIONS/STABILITY

Ensure that vessel Masters and Chief Officers prepare, update, and monitor stability plans for all cargo loading and unloading operations. Transverse stability, longitudinal hull stress, sheer forces, bending moments and ballasting should be considered. Updates should be reviewed and coordinated with terminal personnel responsible for cargo operations.

DANGEROUS/HAZARDOUS CARGO

Ensure that vessels transporting, loading, or unloading dangerous and/or hazardous cargo pre-verify cargo stowage for acceptability per the International Maritime Dangerous Goods (IMDG) Code and 49 CFR. Proper cargo stowage should be verified by the person designated by the Master to be responsible for dangerous and/or hazardous cargo loading/unloading.

OIL TRANSFERS

Ensure that:

1. All bunkering operations in Washington waters comply with chapter 317-40 WAC, Bunkering Operations;
2. Ships possess and use written Oil Transfer Procedures (OTP) that meet the requirements of 33 CFR 155.720 for all transfers of oil within the vessel, and to or from the vessel.
3. The OTP is written in the common working language of the vessel's crew.
4. For transfers to or from the ship, the OTP requires a face-to-face pre-transfer conference between the vessel's and the facility's, terminal's or other vessel's PIC to prepare the Declaration of Inspection required by 33 CFR 156.150, unless conditions make it unsafe to do so.
5. For transfers to or from the ship, the OTP requires documented pre-transfer planning that, at a minimum, includes pre-transfer levels in receiving tanks, states the order in which tanks will receive or discharge oil, establishes procedures for sounding receiving and discharging tanks, and topping off receiving tanks.
6. The OTP ensures that crew involved in any oil transfer meet the rest requirements under STCW '95. (At least 10 hours of rest in any 24-hour period and not less than 70 hours of rest in any 7-day period.)
7. The OTP provides for periodic review and training in the policies and practices required by the OTP.

EMERGENCY PROCEDURES

Establish and maintain station bills outlining crew member responsibilities for firefighting, oil spill response, abandon ship and man overboard. In addition, written procedures should be established for responding to:

1. Collisions and allisions
2. Groundings and strandings
3. Hull breach, structural failure, and foundering
4. Loss of propulsion
5. Loss of steering
6. Loss of electrical power
7. Gyrocompass malfunction
8. Emergency towing
9. Loss of bridge throttle control (if equipped)
10. Heavy weather

Provision should be made for periodic reviews or drills to exercise the written procedures.

EMERGENCY TOWING

Ensure that all affected vessels have a functional emergency towing plan and/or procedures and that crew members are trained to deploy and use emergency towing equipment. Reviews or drills of emergency towing procedures should be conducted at least twice per year.

II. PERSONNEL POLICIES

VESSEL CREWING

Ensure that their vessels are crewed in accordance with the requirements of the vessels' flag state. Crew members should be certified in accordance with STCW '95 for the position they are filling.

WORK HOURS/FATIGUE

Ensure that vessel crew members are rested at least 10 hours per day. The 10 hours may be divided into no more than two periods, but at least 6 hours of rest each day must be consecutive and uninterrupted. In the case of an emergency, drill or other overriding operational condition; vessel crew members may be rested less than 10 hours, but not less than 6 consecutive hours per day, and for no more than two consecutive days. All crew members must have at least 70 hours of rest per seven day period in all cases. This standard does not apply to state-licensed pilots who are covered by the State Pilotage Code.

ALCOHOL AND DRUG POLICY

Establish and maintain policies for alcohol use that conform to 33 and 46 CFR, including mandatory post-incident testing. In addition, they should strictly prohibit illegal drugs, as defined in 46 CFR, from use or carriage on board their vessels. This standard does not apply to state-licensed pilots, who are covered by the State Pilotage Code.

JOB SPECIFIC AND REFRESHER TRAINING

Establish and maintain a comprehensive training program for vessel crew members that includes functional and job-specific equipment training, and refresher training. Training program should include bridge resource management training for deck watch personnel and shipboard management training consistent with the International Safety Management (ISM) code for senior officers. This standard does not apply to state-licensed pilots, who are covered by the State Pilotage Code.

FAMILIARIZATION TRAINING

Ensure familiarization training is provided for new crew members who have not been assigned to a vessel of the same type within the past year. The familiarization training should include duties and responsibilities during all normal and emergency situations, and vessel arrangement familiarization, including escape routes from work and sleeping spaces.

BASIC EMERGENCY DRILLS

Ensure that emergency drills are conducted at least once per month or whenever 25% or more of the vessel crew is replaced. Drills should be evaluated and reviewed by all participants at the conclusion of the drill. Emergency drills should include firefighting, abandon ship, boat drill, emergency steering and oil spill response.

ENGLISH PROFICIENCY

Ensure that all officers who are required to communicate with pilots, persons ashore, and other vessels, are sufficiently proficient in the English language to accomplish their duties safely.

COMMON LANGUAGE

Designate a common spoken and written working language on board vessels with multi-national crews. All manuals, instructions, and placards on vessels with multi-national crews should be printed in the designated common language.

III. MANAGEMENT PRACTICES

MANAGEMENT OVERSIGHT

Ensure that vessels are visited by a representative of company management, such as a port captain, a port engineer, or the management system designated person, at least quarterly. The management representative should review operating and management issues, inspect the vessel, and consult with the senior officers on the vessel.

SAFETY/ENVIRONMENTAL MANAGEMENT PROGRAM

Establish and maintain a certified safety and environmental protection management system in accordance with the ISM code.

SAFETY PROGRAM

Ensure that a corporate safety program consistent with the ISM Code is established and maintained. The safety program should include a system for disseminating critical safety information, including accident prevention measures and corrective actions, throughout the owner or operator's fleet of vessels.

SHIPBOARD SAFETY PROGRAM

Ensure that a shipboard safety program is established and maintained that includes safety meetings at least monthly.

POLLUTION

Establish and maintain a pollution prevention and waste management program on each affected vessel to ensure compliance with international and federal regulations. The program should provide for incineration or landing, with record maintenance and receipts, of oil and solid waste. Record keeping systems should comply with international and federal standards. The program should also include crew training on pollution prevention and waste management practices.

BALLAST WATER

Establish and maintain a ballast water policy that prohibits ballasting near sewer outfalls, in shallow water, or in water clouded with sediment, and requires a mid-ocean ballast water exchange, when safe and practical, to reduce the risk of introducing harmful organisms into state waters.

PLANNED MAINTENANCE SYSTEM

Ensure that a planned maintenance system, consistent with ISM Code provisions, that includes preventive maintenance and detailed record keeping is in place for all major ship systems.

INSPECTION/SURVEY

Ensure that ballast tanks and cargo holds are inspected at least annually to detect potential structural failures, cracks, coating integrity, and excessive corrosion.

ULTRASONIC GAUGING

Establish and maintain a program of ultrasonic gauging and/or non-destructive testing of vessel hulls and tanks at intervals not to exceed 3 years, if the affected vessels are not participating in an enhanced hull survey program administered by the International Association of Classification Societies (IACS). This standard does not apply to passenger vessels.

In addition to inspecting cargo vessels for the above operating standards, the Department of Ecology also inspects vessels for compliance with:

- 1. Washington State Oil Spill Contingency Plan rules: Chapter 317-10 WAC.**
- 2. Washington State Bunkering rules: Chapter 317-40 WAC.**
- 3. Applicable requirements under:**
 - International Convention for the Safety of Life at Sea (SOLAS);**
 - International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW);**
 - International Convention on the Prevention of Pollution from Ships (MARPOL);**
 - Title 33 of the U.S. Code of Federal Regulations (CFR); and**
 - Title 46 of the U.S. Code of Federal Regulations (CFR).**

Attachment 8

State of Washington Vessel Boarding Checklist



**Spill Prevention, Preparedness, and Response Program
Prevention Section**

PUGET SOUND FIELD OFFICE
811 First Avenue, Suite 218 ♦ Seattle, WA 98104
Office: (206) 389-2431 ♦ Fax: (206) 587-5196

COLUMBIA RIVER FIELD OFFICE
811 SW 6th Avenue, 8th Floor ♦ Portland, OR 97204
Office: (503) 229-6103 ♦ Fax: (503) 229-6954

**CARGO AND PASSENGER VESSEL
BOARDING CHECKLIST**

IMO / LLOYD'S NO.	NAME OF VESSEL	CASE NO.
DATE	LOCATION OF INSPECTION	<input type="checkbox"/> PORT SIDE TO <input type="checkbox"/> STBD SIDE TO <input type="checkbox"/> AT ANCHOR <input type="checkbox"/> IN DRY-DOCK
FLAG		
INSPECTED BY	NAME OF MASTER/ATTENDING REPRESENTATIVE	TIME D.O. _____ A.V. _____ D.V. _____ A.O. _____
	COMMENTS	

SAFETY REPORT? YES NO BUNKERING? YES NO VESSEL BOARDED BEFORE? YES NO

Department of Ecology inspectors use this Boarding Checklist to evaluate vessel operating and management conditions to determine if such conditions pose a substantial risk to the marine environment or public health and safety.

To receive this document in alternative format, contact Mariann Cook Andrews at (360) 407-7211 (Voice) or (360) 407-6006 (TDD).

CARGO AND PASSENGER VESSEL BOARDING CHECKLIST

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1.0.0.0	INITIAL BOARDING INFORMATION		
Initial observations:			
Gangway arrangement safe?	Y N		
Mooring arrangement adequate?	Y N		
Ship aware of visit?	Y N	Agent present? Y N Agent Name: _____	
Verify flag _____	Owner/operator per Master's documentation: _____		
Verify class _____	Source documentation: _____		

2.0.0.0	CERTIFICATES				(Check if document is with Agent)
International Loadline Certificate (ILC)	Issue date:	Expiry date:			
	Full Term Interim	Conditional Provisional			
Ship Safety Equipment Certificate (SEC) [SOLAS requirement]	Issue date:	Expiry date:			
	Full Term Interim	Conditional Provisional			
Ship Safety Construction Certificate (SCC) [SOLAS requirement]	Issue date:	Expiry date:			
	Full Term Interim	Conditional Provisional			
International Oil Pollution Prevention Certificate (IOPP)	Issue date:	Expiry date:			
	Full Term Interim	Conditional Provisional			
Certificate of Financial Responsibility (COFR) Cert #: [33 CFR Part 138]	Effective date:	Expiry date:			
	Issued to:				
Safe Manning Certificate (Non-US) Certificate of Inspection (US)	Issued by:	Expiry date:			
	Issue date:				
Port State Vessel Exam Results: Last Port visited: Date of last exam: Port State inspector:	Deficiencies (if applicable)				
SOPEP	Y N	[See 4.9.0.0 for CP Field Document requirements]			
Quarterly drills conducted and logged?	Y N				
Quality Management System Certificate? Required to comply with ISM? (see section 4.2.0.0)	Y N	ISM Certificates	DOC	SMC	
	Y N	Issue Date: _____			
		Issued By: _____			
		Issued To: _____			

CARGO AND PASSENGER VESSEL BOARDING CHECKLIST

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No.	SUBJECT	RATE	REMARKS
3.0.0.0	PERSONNEL (APPROPRIATE PSGR VSL PERSONNEL ONLY)		Ref: SOLAS, Ch. V, reg. 13; ISM Code, par. 6.2; 46 CFR 15.415
3.1.0.0	VESSEL CREWING		
3.1.1.0	Cite IMO Safe Manning Requirement/COI & attach crew list		
3.1.1.1	Crewed below IMO Safe Manning requirements in vital positions.	1 A	SAFETY REPORT REQUIRED
3.1.1.2	Temporary nonvital crew shortage	2 C	
3.1.1.3	Meets IMO Safe Manning requirements	3	Review previous crew lists.
3.1.1.4	Meets IMO Safe Manning requirements with additional ratings on board.	4	Review previous crew lists.
3.1.1.5	Meets IMO Safe Manning requirements with additional ratings and officers* on board	5	Review previous crew lists. * > 3 Mates or > 3 Asst. Engineers
3.1.1.6	Element is not applicable to this vessel.	N/A	
3.2.0.0	COMMUNICATIONS		Ref: STCW; GMDSS
3.2.1.0	Record Nationalities On Board:		
3.2.1.0	English Proficiency Evaluate through conversation and interviews		Ref: STCW Code A-II/1 & A-III/1 deck & eng. officers; 33 CFR 26.07 maintain radio listening watch; 33 CFR 161.12(b) VTS.
3.2.1.1	Interpreter needed – poor English ability.	1 B	
3.2.1.2	Only Captain is able to communicate in English.	2 C	
3.2.1.3	All deck officers are able to speak in English.	3	
3.2.1.4	All officers are proficient in English.	4	
3.2.1.5	Entire crew proficient in English.	5	
3.2.1.6	Element is not applicable to this vessel.	N/A	
3.2.2.0	Common Language Record common language, difficulties stated or observed		Ref: SOLAS, Ch. II-1, reg. 26 ('96 amendments); ISM Code par. 6.6
3.2.2.1	No common language on board.	1 B	
3.2.2.2	Mixed languages.	2 C	
3.2.2.3	Common working language used on board.	3	Signs and placards in common working language and easily understood by all crew
3.2.2.4	English is the common working language on board.	4	
3.2.2.5	English is the common working language on board and of the company.	5	
3.2.2.6	Element is not applicable to this vessel.	N/A	

NO.	SUBJECT	RATE	REMARKS
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3.3.0.0	FITNESS		
3.3.1.0	<i>Work Hours/Fatigue</i>		Ref: STCW Code A-VIII/1; 46 CFR 15.705, 15.710 & 15.1111 (US only)
3.3.1.1	No mandated rest periods; unlimited OT Signs of excessive fatigue.	1 B	Verify by log entries, OT records, written policy, posted schedule.
3.3.1.2	Limited rest periods or daily rest period less than 6 hours.	2 C	
3.3.1.3	Daily rest periods totaling at least 10 hours – 6 hours uninterrupted.	3	ITF or collective bargaining agreement. Review & attach documentation checklists, etc., if available.
3.3.1.4	Relief personnel assigned when needed to ensure adequate rest.	4	
3.3.1.5	Policy on fitness for watch. (Travel, off-ship activities, etc.)	5	33 CFR 95.050
3.3.1.6	Element is not applicable to this vessel.	N/A	

3.3.2.0	<i>Alcohol and Drug Use/Policy</i> Describe onboard policy:		Ref: RCW 90.56.540 (.06 BAC); 33 CFR 95.020 (.04 BAC); 46 USC 2302.
3.3.2.1	Evidence of drug/alcohol misuse/abuse in Washington Waters.	1 A	
3.3.2.2	No/inadequate alcohol policy onboard, or alcohol use contrary to expressed policy.	2 B	
3.3.2.3	Written alcohol policy per CFR or similar, or U.S. Policy posted on board.	3	No drugs/0.04% BAC limit. 46USC2302, 3306, 7701, 33CFR95
3.3.2.4	"Zero Tolerance" policy for alcohol & drugs.	4	33CFR95.001(b)
3.3.2.5	Previous plus onboard testing capability for alcohol & drugs, or random testing done.	5	Device used onboard: 46CFR16 Testing policy:
3.3.2.6	Element is not applicable to this vessel.	N/A	

3.4.0.0	TRAINING		Ref: STCW A-I/14 and A-II/1, par. 6; ISM Code, par. 6.3 and 6.5
3.4.1.0	<i>Training Program – Overall Rating</i>		(Review vessel training manual(s), logbooks)
3.4.1.1	Incomplete training program. Orientation, refresher, or job specific training missing.	1 B	
3.4.1.2	Job specific training limited to required drills.	2 C	Limited to firefighting, abandon ship.
3.4.1.3	Training program includes orientation, job-specific & refresher training.	3	
3.4.1.4	Program includes peer cross-training.	4	
3.4.1.5	Program includes peer cross-training, training for advancement, BRM, shipboard management, team & simulator training.	5	BRM - See 5.1.6.0 Shipboard Management includes quality control, resource management, teamwork & effective communications.
3.4.1.6	Element is not applicable to this vessel.	N/A	

CARGO AND PASSENGER VESSEL BOARDING CHECKLIST

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No.	SUBJECT	RATE	REMARKS
3.4.2.0	<i>Orientation (Familiarization)</i>		Ref: STCW A-I/14 and A-VI/1; ISM Code, par. 6.3 (Review vsI training manual(s), master handover notes & logs)
3.4.2.1	No formalized new crew-member orientation program.	1 B	
3.4.2.2	Orientation on Station Bill assignments only.	2 C	
3.4.2.3	Orientation in all emergency responsibilities, vessel familiarization & escape routes.	3	
3.4.2.4	Brief relief overlap and/or mentor program.	4	Period of overlap:
3.4.2.5	Company familiarization program, including overlap at sea & in port.	5	Period of overlap:
3.4.2.6	Element is not applicable to this vessel.	N/A	
3.4.3.0	<i>Drills</i>		Ref: SOLAS, Ch. III, reg. 19 and reg. 30 (p/v only); ISM Code, par. 8.2 and 8.3; 46 CFR 199.180 (US only) (Review logs & operating manuals)
3.4.3.1	Sporadic drills - less often than monthly; some required drills missing.	1 B	
3.4.3.2	Drills less often than monthly.	2 C	
3.4.3.3	All required drills monthly or when 25% or greater crew change-over.	3	Firefighting, abandon ship, boat drill, emergency steering & oil spill response.
3.4.3.4	Bi-weekly or weekly drills or when 25% or greater crew change-over.	4	
3.4.3.5	Bi-weekly or weekly drills or when 25% or greater crew change-over, plus post-drill critiques/use of videos/simulators/etc.	5	
3.4.3.6	Element is not applicable to this vessel.	N/A	
3.4.4.0	<i>Job-Specific Training</i>		Ref: STCW A-I/14, A-II/1 (OIC nav) and A-III/1 (OIC eng) (Review vessel & company training manuals)
3.4.4.1	No formal program for job-specific training.	1 C	
3.4.4.2	Job-specific training done only "on-the-job".	2	
3.4.4.3	Job-specific training program includes BRM & Shipboard Management.	3	BRM for navigation watch & Shipboard Management for senior officers.
3.4.4.4	Job-specific training program includes team training & simulator training.	4	
3.4.4.5	Onboard program includes weekly meetings. Corporate program includes incentives/ awards.	5	
3.4.4.6	Element is not applicable to this vessel.	N/A	

No.	SUBJECT	RATE	REMARKS
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4.0.0.0	MANAGEMENT	Ref: SOLAS Ch. IX; 33 CFR 96.390	
4.1.0.0 4.1.1.0	SAFETY PROGRAM/MEETINGS	Ref: ISM Code, par. 3.2, 5.1 and 6.4 (Review operation manuals, logs, QM certification)	
4.1.1.1	No formal corporate and/or onboard safety program.	1 B	
4.1.1.2	Unstructured safety program with sporadic meetings.	2 C	
4.1.1.3	Corporate and onboard safety programs in place with monthly meetings and fleet-wide safety information exchange.	3	
4.1.1.4	Onboard program includes weekly meetings.	4	
4.1.1.5	Onboard program includes weekly meetings. Corporate program includes incentives/ awards.	5	
4.1.1.6	Element is not applicable to this vessel.	N/A	

4.2.0.0 4.2.1.0	SAFETY/ENVIRONMENTAL MANAGEMENT SYSTEM	Ref: SOLAS, Ch. IX; 33 CFR 96.390. See section 2.0.0.0 Complete either 4.2.1.0 or 4.2.2.0 depending on ISM status	
4.2.1.1	ISM program not in place.	1 A	
4.2.1.2	ISM program certified by non-IACS member or FOC.	2 B	Certified by:
4.2.1.3	IACS or non-FOC cert. ISM program in place.	3	Last Audit:
4.2.1.4	Additional company program(s) in place.	4	
4.2.1.5	Company & vessel certified according to additional Flag/Class recognized system.	5	ISO 9002 ISMA/CSS Lloyds QMS DNV/SEP Last Audit:
4.2.1.6	Element is not applicable to this vessel.	N/A	This section applicable only to tankers, passenger ships, bulkers.

4.2.2.1	Vessel personnel unfamiliar with ISM code.	1 C	
4.2.2.2	ISM program not under development	2	Certified by:
4.2.2.3	ISM Program under development.	3	Last Audit:
4.2.2.4	Additional company program(s) or ISM program in place.	4	
4.2.2.5	Company & vessel certified according to additional Flag/Class recognized system.	5	ISO 9002 ISMA/CSS Lloyds QMS DNV/SEP Last Audit:
4.2.2.6	Element is not applicable to this vessel.	N/A	N/A to tankers, passenger vessels and bulkers

CARGO AND PASSENGER VESSEL BOARDING CHECKLIST

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NO.	SUBJECT	RATE	REMARKS
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4.3.0.0 4.3.1.0	MANAGEMENT OVERSIGHT		Ref: ISM Code, par. 12; 33 CFR table 96.250(l) (US only) (Review logbook, vessel inspection record)
4.3.1.1	Rare/infrequent visits to vessel by management. Frequency, two or fewer/year.	1 C	Date of last visit: By whom?
4.3.1.2	Occasional visits to vessel by management. Frequency, three or fewer visits/year.	2	Date of last visit: By whom?
4.3.1.3	Inspected by Port Capt/Eng/Marine Sup/ SMS Designated Person at least once/quarter.	3	Date of last visit: By whom?
4.3.1.4	Management visits more often than once per quarter. Frequency:	4	Date of last visit: By whom?
4.3.1.5	Management makes unannounced inspections of vessel(s), including check-rides.	5	Date of last visit: By whom?
4.3.1.6	Element is not applicable to this vessel.	N/A	

4.4.0.0 4.4.1.0	POLLUTION PREVENTION		Ref: STCW A-VIII/2, part. 11; ISM Code par. 3.2; 33 CFR part 151 (By observation & interview; review of ops manuals, logbook. Compare Oil Record Book with IOPP)
4.4.1.1	No pollution program onboard.	1 B	
4.4.1.2	MARPOL V Pollution placards posted; oil & solid wastes incinerated or landed.	2	
4.4.1.3	Pollution program logs properly maintained. Pollution prevention training provided to crew.	3	Oil Record Book Sat / Unsat Garbage Log Sat / Unsat
4.4.1.4	Established/documented pollution program; oil & solid waste incinerated/transferred ashore; crew training in pollution prev. & waste mgmt.	4	
4.4.1.5	Proactive re-cycling program in place onboard to complement program.	5	
4.4.1.6	Element is not applicable to this vessel.	N/A	

4.5.0.0 4.5.1.0	BALLAST WATER		Ref: 33 CFR 151.subpart D (flow thru- 3Xs tank vol; empty/refill – lose suction) (By observation/interview; review operations manuals & reports/logs)
4.5.1.1	Lack of awareness regarding environmental harm of foreign ballast water. No policy in effect or no/incomplete reports to USCG.	1 B	
4.5.1.2	Aware of environmental harm, but inadequate mid-ocean exch./treatment policy/reports.	2 C	
4.5.1.3	Mid-ocean ballast exchange/treatment policy, and all required reports submitted to USCG.	3	
4.5.1.4	Mid-ocean ballast exchange/treatment policy reports of all ballast activity, including coastal.	4	
4.5.1.5	Innovative mid-ocean ballast exchange/ treatment system or ballast pumped ashore.	5	
4.5.1.6	Element is not applicable to this vessel.	N/A	N/A to intrastate operations and BC

No.	SUBJECT	RATE	REMARKS
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4.6.0.0 4.6.1.0	PLANNED MAINTENANCE SYSTEM (PMS)	Ref: SOLAS, Ch. III, reg. 20 & 52 (lifesaving appliances); ISM Code, par. 10; 33 CFR Table 96.250(j) (Review Planned Maintenance System records & engineroom logs)	
4.6.1.1	No PMS.	1 C	
4.6.1.2	Unstructured PMS.	2	
4.6.1.3	Established planned/preventive maintenance system with detailed record keeping.	3	Navigation, propulsion, steering, electrical, dewatering, fire-fighting & oil transfer systems, plus decks & hull.
4.6.1.4	Vessel has class accredited PMS program.	4	
4.6.1.5	Onboard computerized PMS accredited by class, computerized spare parts inventory & class condition monitoring system.	5	Class:
4.6.1.6	Element is not applicable to this vessel.	N/A	

4.7.0.0 4.7.1.0	INSP/SURVEY (Psgr VsIs - Ballast Only)	Ref: ISM Code, par. 6; 46 CFR 91.40 (US only) (Review operation manuals, logbooks, PMS records)	
4.7.1.1	No schedule for ballast tank or cargo hold inspection.	1 C	
4.7.1.2	Visual inspection of tanks & cargo holds performed at intervals longer than annually.	2	Last Inspection: By whom? Location:
4.7.1.3	Annual visual inspection of ballast tanks & cargo holds or IACS Enhanced Hull Survey program.	3	Last Inspection: By whom? Location:
4.7.1.4	More frequent than annual visual inspection of ballast tanks & cargo holds.	4	Last Inspection: By whom? Location:
4.7.1.5	Inspection program includes both visual & underwater or video surveys.	5	Last Inspection: By whom? Location:
4.7.1.6	Element is not applicable to this vessel.	N/A	

4.8.0.0 4.8.1.0	ULTRASONIC GAUGING	Ref: 46 CFR 91.40 and 40-3(d), (e) (US only); SOLAS Ch. XI, reg. 2.	
4.8.1.1	Ultrasonic gauging of hull & tanks not performed.	1 B	
4.8.1.2	Ultrasonic gauging of hull & tanks performed at intervals greater than 3 years.	2	Last Inspection: By whom? Location:
4.8.1.3	Ultrasonic gauging of hull & tanks performed every 3 years or less, or enrolled in IACS Enhanced Hull Survey program.	3	Last Inspection: By whom? Location:
4.8.1.4	Ultrasonic gauging of hull & tanks performed annually.	4	Last Inspection: By whom? Location:
4.8.1.5	Ultrasonic gauging for vessel under 15 years of age.	5	Last Inspection: By whom? Location:
4.8.1.6	Element is not applicable to this vessel.	N/A	N/A to vessels less than 15 years old & passenger vessels

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NO.	SUBJECT	RATE	REMARKS
4.9.0.0	CONTINGENCY PLAN FIELD DOCUMENT		Ref: WAC 317-10-075
4.9.1.0	<i>Vessel Received Field Document</i>		
4.9.1.1	Document not onboard.	1	Copy of Field Doc. left onboard. Y / N
4.9.1.2	Document brought aboard by Agent after vessel entered state waters.	2	
4.9.1.3	Document onboard prior to vessel entering state waters.	3	
4.9.1.4	Document incorporated into vessel's shipboard procedures manual.	4	
4.9.1.5	Over & above previous.	5	
4.9.1.6	Element is not applicable to this vessel.	N/A	
4.9.2.0	<i>Vessel Possesses and Understands Field Document</i>		
4.9.2.1	Document not onboard.	1	
4.9.2.2	Document aboard but not understood or not posted in a conspicuous and accessible location.	2	
4.9.2.3	Document understood by crew and posted in a conspicuous and accessible location.	3	
4.9.2.4	Document is posted in a conspicuous and accessible location and crew is trained in the proper use of document.	4	
4.9.2.5	Over & above previous.	5	i.e. incorporated in training per WAC 317-40
4.9.2.6	Element is not applicable to this vessel.	N/A	
5.0.0.0	OPERATING PROCEDURES		33 CFR Part 164; STCW; SOLAS
5.1.0.0	BRIDGE OPERATING PROCEDURES/EQUIPMENT		
5.1.1.0	<i>Equipment/Organization</i>		Ref: 33 CFR 164.35 – 164.43; SOLAS Ch. V, reg. 12
5.1.1.1	Any required equipment not functioning. SOLAS violations.	1 A	SAFETY REPORT REQUIRED Specify:
5.1.1.2	Equipment in poor condition or improperly arranged/located.	2 C	
5.1.1.3	Meets U.S./International standards. Effective Standing Orders. Equipment appears well maintained.	3	Standing Orders include: Officer always on bridge; requirement for fixes; bridge equipment directives; authority to reduce/increase speed; different conditions for AT SEA, AT ANCHOR, and ARRIVAL/DEPARTURE; instructions for calling Master; CPA requirements; references to other navigational directives.
5.1.1.4	Two ARPAs, other extra gear. Night Orders to supplement Standing Orders.	4	
5.1.1.5	ECDIS or comparable integrated navigation system.	5	
5.1.1.6	Element is not applicable to this vessel.	N/A	

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No.	SUBJECT	RATE	REMARKS
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5.1.2.0	Charts/Publications		Ref: SOLAS Ch. V, reg. 20; 33 CFR 164.33; 46 CFR 97.05-5 (US only)
5.1.2.1	Applicable/appropriate charts or publications for voyage missing.	1 B	
5.1.2.2	Not all applicable/appropriate charts & pubs for voyage corrected to date.	2 C	
5.1.2.3	Applicable/appropriate charts & pubs corrected & current.	3	
5.1.2.4	All charts & pubs corrected & current plus accurate correction card/folio file.	4	
5.1.2.5	All charts & pubs current plus advanced correction & maintenance system.	5	Specify: Computer Service? Y / N
5.1.2.6	Element is not applicable to this vessel.	N/A	

5.1.3.0	Equipment Error Checks		Ref: SOLAS Ch. V, reg. 19-2 (steering gear); STCW A-II/1, A-II/2, and VIII/2 part 3-1; 33 CFR 164.25 (Verify by checking logs, records and standing orders)
5.1.3.1	No specified checks or checks made less frequently than daily.	1 B	
5.1.3.2	Equipment checks made daily.	2 C	
5.1.3.3	Radars, compass (gyro & magnetic), repeaters checked at least once per watch for errors.	3	
5.1.3.4	All equipment checked once per watch.	4	
5.1.3.5	All equipment checked more often than once per watch.	5	
5.1.3.6	Element is not applicable to this vessel.	N/A	

5.1.4.0	Voyage Planning		Ref: STCW A-VIII/2, part 2 (Verify by checking standing orders, records, logs)
5.1.4.1	No Plan in use.	1 A	
5.1.4.2	Plan w/minimum elements in use (i.e. waypoints, courses & distances only)	2 B	
5.1.4.3	Voyage plan in use with major elements.	3	Elements: waterway characteristics, navigation aids, waypoints, charts/pubs, vessel traffic, environmental conditions, pilotage, VTS,
5.1.4.4	Plan includes additional elements.	4	berthing/anchoring, engineering considerations, & voyage-specific emergency procedures.
5.1.4.5	Plan includes "local" information not normally found in general references.	5	
5.1.4.6	Element is not applicable to this vessel.	N/A	

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No.	SUBJECT	RATE	REMARKS
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5.1.5.0	<i>Pilot Coordination</i>	Ref: STCW A-VIII/2, part 3-1; 33 CFR 164.11(k); RCW 88.16.155 (Verify by inspection of pilot cards and log book)	
5.1.5.1	No formal Master/Pilot interchange.	1 B	
5.1.5.2	Verbal Master/Pilot interchange.	2	
5.1.5.3	Pilot Card used with verbal interchange.	3	
5.1.5.4	Detailed Master/Pilot interchange with Pilot Card as basis.	4	
5.1.5.5	Documented pre-event meeting with all bridge team members, Pilot Card used.	5	
5.1.5.6	Element is not applicable to this vessel.	N/A	N/A to car ferries

5.1.6.0	<i>Bridge Resource Management</i>	Ref: STCW A-VIII/2, part 3-1 (B-VIII/2 recommended) (Verify by checking logs, standing orders, ops manuals)	
5.1.6.1	No BRM practiced.	1 B	
5.1.6.2	Partial BRM practiced.	2	
5.1.6.3	Complete BRM system in place.	3	
5.1.6.4	BRM system includes full bridge team training.	4	
5.1.6.5	BRM system includes simulator training for full bridge teams.	5	
5.1.6.6	Element is not applicable to this vessel.	N/A	

5.1.7.0	<i>Helmsman and Lookout</i>	Ref: STCW A-VIII/2, part 3-1; 46 CFR 15.1109 (Verify by checking logs, standing orders)	
5.1.7.1	Helmsman acts as lookout while steering.	1 B	STCW, 46CFR 97.27& 97.16
5.1.7.2	Helmsman acts as lookout when vessel on autopilot in WA waters.	2	
5.1.7.3	Lookout has no other duties in WA waters.	3	
5.1.7.4	Extra lookout posted.	4	
5.1.7.5	Additional lookouts above 4.	5	
5.1.7.6	Element is not applicable to this vessel.	N/A	

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NO.	SUBJECT	RATE	REMARKS
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5.2.0.0	DECK PROCEDURES	Ref: ISM, STCW, and 33 CFR part 164	
5.2.1.0	<i>Ground Tackle Readiness</i>	Ref: 33 CFR 164.11 (Verify by checking logs, standing orders)	
5.2.1.1	Anchors not ready for use in channel.	1 B	
5.2.1.2	Anchors chained & on brake in channel.	2	
5.2.1.3	Anchors cleared & ready to drop before sea buoy.	3	
5.2.1.4	Person standing by at focsle to drop anchor at Pilot's request.	4	
5.2.1.5	Person standing by at focsle to drop anchor per standard company/Master policy.	5	
5.2.1.6	Element is not applicable to this vessel.	N/A	N/A to State car ferries

5.2.2.0	<i>Anchor Watch</i>	Ref: STCW A-VIII/2, par. 51; 33 CFR 164.19 (Verify by charts, logs, standing orders)	
5.2.2.1	No anchor watch stood.	1 B	33USC1221
5.2.2.2	Infrequent anchor bearings, roving watch.	2	
5.2.2.3	Licensed officer standing anchor watch on bridge at all times.	3	
5.2.2.4	Anchor watch includes constant electronic monitoring (i.e. radar, GPS, etc.).	4	
5.2.2.5	Anchor watch also includes foc'sle checks.	5	
5.2.2.6	Element is not applicable to this vessel.	N/A	N/A to State car ferries

5.2.3.0	<i>Security Rounds</i>	Ref: STCW A-VIII/2, part 4, par. 90 (in port); SOLAS, Ch. II-2, reg. 40 (p/v only). (Verify by checking logs, standing orders)	
5.2.3.1	No scheduled rounds.	1 C	46CFR78.30 & 97.27 (US only)
5.2.3.2	Once per watch at anchor or in port.	2	
5.2.3.3	Hourly rounds in port or at anchor & once per watch at sea.	3	Monitoring of local weather conditions. Smoke detection system with central panel installed? Y 1 N
5.2.3.4	Security rounds plus gangway watch in port.	4	
5.2.3.5	Previous plus additional security measures.	5	
5.2.3.6	Element is not applicable to this vessel.	N/A	

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NO.	SUBJECT	RATE	REMARKS
5.3.0.0	EMERGENCY PREPAREDNESS		Ref: ISM Code, par. 8; STCW Annex, reg. 1/14
5.3.1.0	<i>Emergency Towing</i>		Ref: SOLAS, Ch.II-1, reg. 3-4 (t/v only) ('96 amendments). (Check designated equipment for condition)
5.3.1.1	No plan or procedures for being towed in an emergency.	1 C	
5.3.1.2	Plan/procedures in place. Crew not trained or equipment designated in plan not functional.	2	
5.3.1.3	Plan/procedures in place. Crew trained. Equipment designated in plan functional.	3	
5.3.1.4	Emergency towing drills conducted.	4	
5.3.1.5	Emergency towing drills conducted and towing equipment at both ends of ship.	5	
5.3.1.6	Element is not applicable to this vessel.	N/A	N/A - State Car Ferries
5.3.2.0	<i>Emergency Procedures</i>		Ref: SOLAS, Ch. III, reg. 8 and 37 ('96 amendments); ISM Code, par. 8; 33 CFR 164.25(d); 46 CFR 97.13 (US only) (Verify by standing orders, manuals, station bill)
5.3.2.1	Minimum Station Bill covering only Fire & Boat.	1 C	
5.3.2.2	In excess of minimum, but below level 3.	2	46CFR 97.15-35
5.3.2.3	Station bill and procedures for most common emergencies. 46CFR97.13	3	Procedures for: fire, abandon ship, oil spill, man overboard, collision, grounding, structural failure, loss of propulsion, loss of steering, loss of electrical power, gyro malfunction, emergency towing, loss of bridge throttle control, and heavy weather.
5.3.2.4	Station bill and procedures for conditions specified above plus Emergency Squads and dedicated Rescue Boat(s). 46CFR97.15-45, 78.13-15	4	
5.3.2.5	Station bill and procedures for conditions specified above, Emergency Squads and dedicated Rescue Boat(s) plus drills and preparedness in excess of Int'l and Flag State requirements.	5	
5.3.2.6	Element is not applicable to this vessel.	N/A	
5.4.0.0	OIL TRANSFER		Ref: 33 CFR 155.720, 155.730, 155.750 and 151.25 (Verify by Oil Record Book, Logs, Operating Manuals)
5.4.1.0			
5.4.1.1	No organization in place.	1 A	Bunker packet information left onboard: Y / N
5.4.1.2	OTP meets only CFR requirements or does not cover all types of transfers.	2	33CFR155, 156, 46CFR12, 15, 35
5.4.1.3	Meets WA bunkering requirements & OTP covers pre-planning & team training for all transfers.	3	Bunker Monitor performed: Y / N
5.4.1.4	Previous plus vessel boomed or tug standing by.	4	
5.4.1.5	Previous plus skimmer standing by.	5	
5.4.1.6	Element is not applicable to this vessel.	N/A	

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NO.	SUBJECT	RATE	REMARKS
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5.5.0.0 5.5.1.0	STABILITY CALCULATIONS & CARGO PLANNING	Ref: SOLAS, Ch. VI, reg. 7 ('96 amendments); 46CFR78.17-22, 97.11-12 (Verify by inspecting records)	
5.5.1.1	No calculations or pre-planning done.	1 B	
5.5.1.2	Final calculations only done. Incomplete/inadequate pre-plan prepared.	2	
5.5.1.3	Stability/loading reviewed each watch. Complete pre-plan/intermediate plan.	3	Plan Elements: transverse stability, longitudinal hull stress, sheer forces, bending moments, and ballasting.
5.5.1.4	Stability known by all deck officers. Frequent updates of load/discharge operation.	4	
5.5.1.5	Previous plus electronic systems & stress verifications performed; shift updates.	5	
5.5.1.6	Element is not applicable to this vessel.	N/A	N/A to State Car Ferries

5.6.0.0 5.6.1.0	DANGEROUS & HAZARDOUS CARGO MANIFEST (DCM) AND PLANNING	Ref: SOLAS, Ch. VII, reg. 5; MARPOL, Annex III, reg. 4; 49 CFR 171.12 and 176.24	
5.6.1.1	No DCM.	1 B	
5.6.1.2	DCM presented at completion of loading.	2	
5.6.1.3	Dangerous cargo stowage pre-verified for acceptability per IMDG/CFR.	3	RO/RO vessels may use pre-designated stowage areas.
5.6.1.4	Previous plus loading schedule.	4	
5.6.1.5	Previous plus shift updates.	5	
5.6.1.6	Element is not applicable to this vessel.	N/A	Only Applies to Vessels Carrying IMDG/CFR-Designated Dangerous and/or Hazardous Cargoes

6.0.0.0	ENGINEERING PROCEDURES/SPACES		
6.1.0.0 6.1.1.0	MACHINERY AND SPACES	Ref: SOLAS, Ch. I, reg. 11; SOLAS, Ch. III, regs. 20 and 36 ('96 amendments); ISM Code, par. 10.	
6.1.1.1	Serious condition, must be repaired before vessel can depart. MARPOL/SOLAS violations.	1 A	SAFETY REPORT REQUIRED
6.1.1.2	Need for more pro-active maintenance. Some equipment not functioning.	2 B	Details:
6.1.1.3	Average condition.	3	
6.1.1.4	Better than average.	4	
6.1.1.5	Excellent, like new condition.	5	
6.1.1.6	Element is not applicable to this vessel.	N/A	

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NO.	SUBJECT	RATE	REMARKS
6.2.0.0	ENGINEERING WATCH PRACTICES		Ref: STCW A-VIII/2, part 3-2
6.2.1.0			
6.2.1.1	No organizational guidance. No plans or procedures.	1 A	
6.2.1.2	Verbal instructions only.	2 C	
6.2.1.3	Standing orders posted in Control Room and/or Engine Room.	3	Watch conditions & composition, communication, duties & authorities, procedures & responsibilities, emergency response, watch relief, and inspection/maintenance/operation of critical equipment must be covered.
6.2.1.4	Standing orders posted, including watch responsibilities for all equipment.	4	
6.2.1.5	Previous plus, extensive guides/workbooks.	5	
6.2.1.6	Element is not applicable to this vessel.	N/A	
6.3.0.0	ENGINEERING OPERATING PROCEDURES		Ref: SOLAS, Ch. II-1; STCW A-VIII/2, part 3-2; 33 CFR 164.25
6.3.1.0	<i>Electrical Systems</i>		Ref: SOLAS, Ch. II-1, reg. 42 (p/v) and 43 (c/v); 33 CFR 164.25 (Verify by log entries, computer printouts, ops manuals)
6.3.1.1	No stand-by (S/B) Generators operable.	1 A	SAFETY REPORT REQUIRED
6.3.1.2	S/B generator(s) not tested prior to arrival in WA waters.	2 B	
6.3.1.3	S/B generator(s) tested & proven.	3	No more than 12 hours prior to entry/departure.
6.3.1.4	S/B generator(s) floating on line.	4	Total # of generators:
6.3.1.5	All generators & emergency generator operating, or more sophisticated technology in use.	5	
6.3.1.6	Element is not applicable to this vessel.	N/A	
6.3.2.0	<i>Engine Room (E/R) Crewing</i>		Ref: STCW A-VIII/2, part 3-2 (Verify by log entries, standing orders, ops manuals)
6.3.2.1	Unattended.	1 B	
6.3.2.2	Ratings only in E/R while in WA waters.	2 C	
6.3.2.3	E/R & Control Room manned by Engineers while in WA waters.	3	If Control Room located outside of E/R. Unattended machinery spaces (UMS). Y / N Certified by class? Y / N Class:
6.3.2.4	Previous plus additional personnel on duty.	4	
6.3.2.5	Exceeds 6.3.2.4 above, while in WA waters.	5	
6.3.2.6	Element is not applicable to this vessel.	N/A	

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6.3.3.0	<i>Steering Gear Flat</i>		Ref: SOLAS, Ch. V, reg. 19-2; 33 CFR 164.11(t) and 164.25 (Verify by log entries, standing orders, ops manuals)
6.3.3.1	System malfunctioning.	1 A	SAFETY REPORT REQUIRED
6.3.3.2	No back-up system testing.	2 A	
6.3.3.3	Tests conducted per CFR & hourly rounds made, or monitoring system in use.	3	
6.3.3.4	Previous plus Engineer in steering gear flat.	4	
6.3.3.5	Previous plus Engineer & Helmsman in steering gear flat.	5	
6.3.3.6	Element is not applicable to this vessel.	N/A	

6.3.4.0	<i>Fuel Oil Tanks, Pumps & Purifiers</i>		Ref: SOLAS, Ch. II-1, reg. 15 (Verify by checking logs, computer printouts)
6.3.4.1	Burning direct from storage tanks.	1 B	
6.3.4.2	Burning from storage tanks via purifier.	2 C	
6.3.4.3	Settler/Service tanks at 85% capacity with purified oil, pumps proven.	3	No more than 12 hours prior to entry/departure. SOLAS, Ch. II-1, reg. 26(11) ('96 amendments – keel laid after 7/1/98)
6.3.4.4	Previous plus transfer from settler to service tanks via purifier.	4	
6.3.4.5	Increased sophistication over & above previous, such as continuous purification.	5	
6.3.4.6	Element is not applicable to this vessel.	N/A	

6.3.5.0	<i>Lube Oil Tanks, Pumps & Purifiers</i>		Ref: SOLAS, Ch. II-1, reg. 15 (Verify by checking logs, computer printouts)
6.3.5.1	No back-up testing of lube oil pump.	1 B	
6.3.5.2	Back-up tested for operational readiness. No purification of sump oil.	2 C	
6.3.5.3	Main pump on-line, back-up verified, batch purification of sump oil.	3	No more than 12 hours prior to entry/departure.
6.3.5.4	Main pump on-line, back-up verified, sump oil continuously purified.	4	
6.3.5.5	Increased sophistication over & above previous.	5	
6.3.5.6	Element is not applicable to this vessel.	N/A	

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6.3.6.0	<i>Oil Strainers</i>		Ref: SOLAS, Ch. II-1, reg. 15 (Verify by checking logs, computer printouts)
6.3.6.1	Evidence of strainers unclean/clogged.	1 B	
6.3.6.2	Strainers not cleaned before entry & departure.	2 C	
6.3.6.3	Duplex strainers with backup side cleaned & ready for use.	3	No more than 12 hours prior to entry/departure.
6.3.6.4	Self cleaning strainers, backflushed (main engine).	4	
6.3.6.5	Higher level of technology.	5	
6.3.6.6	Element is not applicable to this vessel.	N/A	

6.3.7.0	<i>Cooling Water System</i>		(Verify by logs, computer printouts)
6.3.7.1	No back up circulating pump.	1 B	
6.3.7.2	Back-up circulating pump untested.	2 C	
6.3.7.3	Back-up circulating pump tested.	3	Scoop Injection? Y / N If yes, secured before entry? Y / N No more than 12 hours prior to entry/departure.
6.3.7.4	Auto-switching.	4	
6.3.7.5	Higher level of technology in use.	5	
6.3.7.6	Element is not applicable to this vessel.	N/A	

6.3.8.0	<i>Start/Control Air System</i>		(Verify by logs, computer printouts)
6.3.8.1	One compressor proven, receiver slack.	1 B	
6.3.8.2	All compressors proven, receiver slack or condensate not drained.	2 C	
6.3.8.3	Receiver full, all compressors proven, condensate drained.	3	No more than 12 hours prior to entry/departure.
6.3.8.4	Automated system in use.	4	
6.3.8.5	Higher level of technology in use (i.e. dryers).	5	
6.3.8.6	Element is not applicable to this vessel.	N/A	

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No.	SUBJECT	RATE	REMARKS
7.0.0.0 DECK		Ref: SOLAS, Ch. I, reg. 11 and Ch. II-1, reg. 3-1 ('96 amendments)	
7.1.0.0 7.1.1.0	DECK		
7.1.1.1	Serious deterioration of hull, piping, fittings and/or structural members. MARPOL/SOLAS violations.	1 A	SAFETY REPORT REQUIRED
7.1.1.2	Attention needed to hull and/or structure.	2 C	
7.1.1.3	Condition commensurate with age & service.	3	
7.1.1.4	Generally good condition.	4	
7.1.1.5	Excellent condition.	5	
7.1.1.6	Element is not applicable to this vessel.	N/A	
8.0.0.0 SAFETY/ LIFESAVING EQUIPMENT		Ref: SOLAS, Ch. III, reg. 20 ('96 amendments); 46 CFR 199.190	
8.1.0.0 8.1.1.0	SAFETY/ LIFESAVING EQUIPMENT		
8.1.1.1	Lifeboats/ firelines holed, gear missing. SOLAS violations.	1 A	SAFETY REPORT REQUIRED
8.1.1.2	Attention needed to lifesaving gear.	2 C	
8.1.1.3	Condition commensurate with age & service.	3	
8.1.1.4	Generally good condition.	4	
8.1.1.5	Excellent condition.	5	
8.1.1.6	Element is not applicable to this vessel.	N/A	
9.0.0.0 ACCOMODATION		Ref: ILO 147 Convention; 46 CFR subpart 92.20 (US only)	
9.1.0.0 9.1.1.0	ACCOMODATION		
9.1.1.1	Crew spaces not clean, equipment broken. ILO-147 violations.	1 B	
9.1.1.2	Attention needed to sanitary conditions.	2 C	
9.1.1.3	Condition commensurate with age & service.	3	
9.1.1.4	Generally good condition.	4	
9.1.1.5	Excellent condition.	5	
9.1.1.6	Element is not applicable to this vessel.	N/A	

CARGO AND PASSENGER VESSEL BOARDING CHECKLIST

V.4.0

PHOTO LOG

No.	Area of Vessel	Subject/Remarks
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Attachment 9

Memorandum of Understanding between the State of Florida and ICCL

Attachment 9

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is entered into this 6th day of December, 2001 by and between the Florida Department of Environmental Protection, herein referred to as FDEP; the Florida-Caribbean Cruise Association and the International Council of Cruise Lines, as representatives of the cruise industry in Florida, hereinafter referred to as FCCA and ICCL.

Whereas, FDEP, is responsible for the protection of Florida's environment and for regulation of environmental laws in the State of Florida; and

Whereas, the FCCA and ICCL are non-profit entities organized for the purpose of representing member cruise lines which operate in Florida; whose current membership is identified in Appendix 1; and

Whereas, the FCCA and ICCL have developed and agreed to cruise industry policies with regard to waste minimization, waste reuse and recycling and waste management practices and procedures; and

Whereas, the United States Coast Guard, herein referred to as USCG, has Federal jurisdiction over environmental matters in navigable waterways in the United States; and

Whereas, the cruise industry through its trade associations----FCCA and ICCL----have been engaged with the FDEP and the USCG in an active discussion involving a number of environmental management policy goals based upon The Memorandum of Understanding executed by the parties dated March 14, 2000; and

Whereas, the FDEP recognizes that cruise vessels operate in international waters and move passengers to destinations worldwide and, consequently, that cruise vessel waste management practices must take into account environmental laws and regulations in many jurisdictions; and

Whereas, the Memorandum of Understanding dated on March 14, 2000 provided for certain environmental policy goal attainments relating to waste management practices; and

Whereas, the FCCA and ICCL have acted in "good faith" working with the FDEP and the USCG to develop waste management practices which preserve a clean and healthy environment and which demonstrate the cruise industry's commitment to be a steward of the environment and set policies that make the industry a leader in environmental performance; and

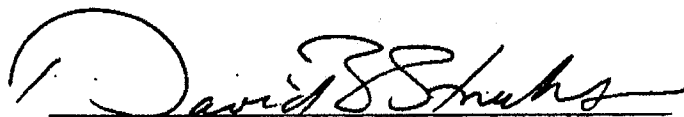
Whereas, the FDEP recognizes that when a cruise vessel seeks to dispose hazardous wastes in Florida then waste management becomes a Florida activity subject to Florida regulations; and

Whereas, the cruise industry recognizes Florida's fragile maritime environment and the cruise industry is committed to help protect this environment; now therefore, FDEP, FCCA and ICCL enter into this Memorandum of Understanding based upon mutual understandings on the following environmental policy goal attainments:

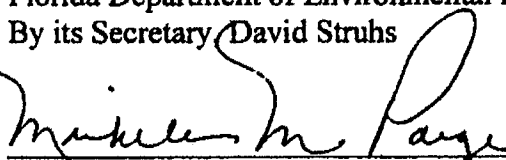
1. FDEP accepts the ICCL Industry standard E-01-01, titled Cruise Industry Waste Management Practices and Procedures (Exhibit A), as ICCL member policy in the management of solid waste, hazardous wastes and waste waters. FDEP acknowledges that FCCA and ICCL members agree to discharge waste waters outside of Florida territorial waters. FDEP also acknowledges that such waste management practices and procedures meet or exceed the standards set forth in Florida laws and applicable Florida regulations.
2. FDEP and the FCCA/ICCL understand that the USCG has Federal jurisdiction over environmental matters in navigable waterways in the United States and conducts passenger ship examinations that include review of environmental systems, Safety Management System (SMS) documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book. FDEP agrees that the USCG is the proper U.S. agency to provide reasonable assurances that the cruise vessel is following management practices and industry standards as contained in Exhibit A. Additionally, FCCA/ICCL member Cruise Vessels will integrate such industry standards into SMS which ensure compliance through statutorily required internal and third party audits.
3. USCG has developed guidelines relating to the inspection of waste management practices and procedures which have been adopted by the cruise industry. FDEP accepts the USCG Navigation and Vessel Inspection Circular and Environmental Systems Checklist (Exhibit B) which will be incorporated into USCG 840 Guidebook as the procedure to conduct waste management inspections on board cruise vessels. FDEP may request, from the USCG, and inspect all records for cruise vessels entering Florida territorial waters.
4. FDEP in consultation with FCCA/ICCL is working with the Environmental Protection Agency (EPA) to develop a national practice for the assigning of an EPA Identification Number to the generator of hazardous wastes which recognizes the multi-jurisdictional itineraries of a cruise vessel. Conceptually, the EPA has agreed that issuing a national identification number to cruise vessels operating in the U.S. is an acceptable procedure. EPA also proposes that the state where company offices are located may issue the national identification numbers provided the criteria and information submitted required for obtaining the number is standard for the United States. FDEP and FCCA/ICCL agree to a uniform application procedure (Exhibit C) for the EPA national identification number in accordance with the Resource Conservation Recovery Act (RCRA). FDEP shall have the right to inspect all such records upon written request to the cruise vessel operator.
5. FCCA and ICCL have adopted a uniform procedure (Exhibit D) for the application of RCRA to cruise vessels entering Florida. FDEP accepts this procedure as the appropriate process for vendor selection and management of hazardous wastes in Florida. FCCA/ICCL member lines agree to provide an annual report regarding the total hazardous waste offloaded in the United States by each cruise vessel.
6. FDEP and FCCA/ICCL agree that all records required by RCRA for cruise vessels entering Florida territorial waters shall be available to FDEP upon written request to the cruise vessel operator.

7. The FDEP recognizes that waste management practices are undergoing constant assessment and evaluation by cruise industry members. It is understood by the FDEP, the FCCA and the ICCL that the management of waste streams will be an on-going process which has as its stated objectives both waste minimization and pollution prevention. Consequently, all parties agree to continue to work with each other in "good faith" to achieve the stated objectives. This may require additional meetings with federal regulators to discuss specific issues applicable to the cruise industry in the U.S.
8. The FDEP agrees that the performance required by the FCCA and ICCL under the terms of this Memorandum of Understanding only shall be directed to its member cruise lines. The FCCA and ICCL acknowledge that its members operate cruise vessels engaged in cruise itineraries greater than one day duration; and further that its members do not operate one-day attraction ships or casino gambling ships.
9. Attached as Appendix II is a discussion of future environmental goals which the FDEP, USCG and FCCA/ICCL have established as part of the ongoing, good faith, discussion amongst the parties. Additional meetings to discuss environmental goals are recognized as a necessary component to the successful implementation of management practices for waste minimization and reduction.

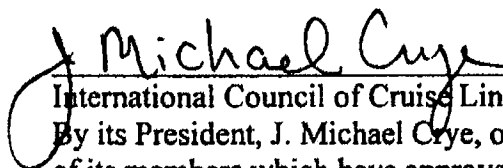
IN RECOGNITION OF THE MUTURAL UNDERSTANDINGS DISCUSSED HEREIN; THE PARTIES HERETO AFFIX THEIR SIGNATURES ON THIS 6th DAY OF December 2001.



Florida Department of Environmental Protection
By its Secretary David Struhs



Florida-Caribbean Cruise Association
By its President, Michele M. Paige, on behalf
of its members which have approved the provisions
of this Memorandum.



International Council of Cruise Lines
By its President, J. Michael Crye, on behalf
of its members which have approved the provisions
of this Memorandum.



INTERNATIONAL COUNCIL
OF CRUISE LINES

ICCL INDUSTRY STANDARD E-01-01 (Revision 1)

**CRUISE INDUSTRY
WASTE MANAGEMENT
PRACTICES AND PROCEDURES**

The members of the International Council of Cruise Lines are dedicated to preserving the marine environment and in particular the pristine condition of the oceans upon which our vessels sail. The environmental standards that apply to our industry are stringent and comprehensive. Through the International Maritime Organization, the United States and other maritime nations have developed consistent and uniform international standards that apply to all vessels engaged in international commerce. These standards are set forth in the International Convention for the Prevention of Pollution from Ships (MARPOL). In addition, the U.S. has jurisdiction over vessels that operate in U.S. waters where U.S. laws such as the Resource Conservation and Recovery Act and the Federal Water Pollution Control Act apply. The U.S. Coast Guard enforces both international conventions and domestic laws.

The cruise industry commitment to protecting the environment is demonstrated by the comprehensive spectrum of waste management technologies and procedures employed on its vessels.

ICCL members are committed to:

- a. Designing, constructing and operating vessels, so as to minimize their impact on the environment;
- b. Developing improved technologies to exceed current requirements for protection of the environment;
- c. Implementing a policy goal of zero discharge of MARPOL, Annex V solid waste products by use of more comprehensive waste minimization procedures to significantly reduce shipboard generated waste;
- d. Expanding waste reduction strategies to include reuse and recycling to the maximum extent possible so as to land ashore even smaller quantities of waste products;
- e. Improving processes and procedures for collection and transfer of hazardous waste; and
- f. Strengthening comprehensive programs for monitoring and auditing of onboard environmental practices and procedures in accordance with the International Safety Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code).

INDUSTRY WASTE MANAGEMENT STANDARDS: ICCL member cruise vessel operators have agreed to incorporate the following standards for waste stream management into their respective Safety Management Systems.

1. Photo Processing, Including X-Ray Development Fluid Waste: Member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations.
2. Dry-cleaning waste fluids and contaminated materials: Member lines have agreed to prevent the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment
3. Print Shop Waste Fluids: Member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.
4. Photo Copying and Laser Printer Cartridges: Member lines have agreed to initiate procedures so as to maximize the return of photo copying and laser printer cartridges for recycling. In any event, these cartridges will be landed ashore.
5. Unused And Outdated Pharmaceuticals: Member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed of in accordance with legal and environmental requirements.
6. Fluorescent And Mercury Vapor Lamp Bulbs: Member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable means of disposal.
7. Batteries: Member lines have agreed to prevent the discharge of spent batteries into the marine environment.
8. Bilge and Oily Water Residues: Member lines have agreed to meet and exceed the international requirements for removing oil from bilge and wastewater prior to discharge.
9. Glass, Cardboard, Aluminum and Steel Cans: Member lines have agreed to eliminate the maximum extent possible, the industry will eliminate the disposal of MARPOL Annex V wastes into the marine environment through improved reuse and recycling opportunities. They have further agreed that waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.
10. Incinerator Ash: Member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities.
11. Graywater: Member lines have agreed that graywater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having

jurisdiction or provided for by local law except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations.

12. Blackwater: *Member lines have agreed that blackwater will be discharged only while the ship is underway and proceeding at a speed of not less than 6 knots and in accordance with applicable regulations; and that treated Blackwater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law, except in an emergency, or where geographically limited. Member lines have further agreed that the discharge of blackwater will comply with all applicable laws and regulations.*

To improve environmental performance, some member cruise lines are field-testing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

Each ICCL cruise vessel operator has agreed to utilize one or more of the practices and procedures contained in the attached "*Cruise Industry Waste Management Practices and Procedures*" in the management of their shipboard waste streams. Recognizing that technology is progressing at a rapid rate, any new equipment or management practices that are equivalent to or better than those described, and which are shown to meet or exceed international and federal environmental standards, will also be acceptable. Member lines have agreed to communicate to ICCL the use of equivalent or other acceptable practices and procedures. As appropriate, such practices and procedures shall be included as a revision to the attached document. As an example, when improved systems for treating blackwater and graywater are perfected and shown to meet the requirements for MSDs and accepted by appropriate authorities, the new systems and associated technology will be included in the attachment as a revision.

ICCL and its Environmental Committee will work with the U.S. Coast Guard, the U.S. Environmental Protection Agency and other appropriate agencies to further implement the above commitments.

ATTACHMENT: CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES (Dated May 14,2001)

Adopted: June 11,2001
Revised: December 1, 2001
Effective Date: July 1, 2001

Attachment to ICCL Standard E-1-01 (Revision 1)

CRUISE INDUSTRY WASTE MANAGEMENT PRACTICES AND PROCEDURES

(REVISED: December 1, 2001)

The cruise industry is dedicated to preserving the marine environment and oceans upon which our ships sail. As a stated industry standard, ICCL members have adopted aggressive programs of waste minimization, waste reuse and recycling, and waste stream management set forth in the following. In addition ICCL members are working in a number of areas to identify and implement new technologies in order to improve the environmental performance of their ships. ICCL member lines currently have agreed to utilize waste management practices and procedures, which meet or exceed the stringent standards as set forth in international treaties and applicable U.S. laws.

Introduction

The cruise industry is inextricably linked to the environment. Our business is to bring people to interesting places in the world, over the water. Recognizing the future of the industry depends on a clean and healthy environment, cruise industry senior management is committed to stewardship of the environment and establishing industry practices that will make ICCL member cruise ship operators leaders in environmental performance.

This document outlining member line practices has been developed under the auspice of the industry's professional organizations, the International Council of Cruise Lines (ICCL), the Florida Caribbean Cruise Association (FCCA), and the Northwest Cruise Ship Association (NWCA). The purpose of this document is to set forth cruise industry waste management practices and procedures that ICCL member cruise vessel operators have agreed to incorporate into their respective Safety Management Systems.

In the development of industry practices and procedures for waste management, the members of the International Council of Cruise Lines have endorsed policies and practices based upon the following fundamental principles:

- Full compliance with applicable laws and regulations
- Maintaining cooperative relationships with the regulatory community
- Designing, constructing and operating vessels, so as to minimize their impact on the environment
- Embracing new technology
- Conserving resources through purchasing strategies and product management
- Minimizing waste generated and maximize reuse and recycling
- Optimizing energy efficiency through conservation and management
- Managing water discharges
- Educating staff, guests and the community.

Discussion

Just as on shore, ship operations and passengers generate waste as part of many daily activities. On ships, waste is generated while underway and in port. Because ships move, the management of these wastes becomes more complicated than for land-based activities, as the facilities and laws change with the location of the ship. Facilities on the ships and management practices must be designed to take into account environmental laws and regulations around the world. Moreover, because waste management ultimately becomes a local activity, the local port infrastructure, service providers, and local waste disposal vendors are factors in the decision-making processes.

On an international level, environmental processes are an important part of the International Maritime Organization's (IMO's) policies and procedures for the maritime industry. ICCL member lines have agreed to incorporate environmental performance into Safety Management Systems (SMS) and MARPOL mandated Waste Management Manuals. Under agreements and laws specific to many nations, these programs are routinely reviewed by Port States to ensure compliance. For example, in the United States, the US Coast Guard has jurisdiction over environmental matters in ports and waterways and conducts passenger ship examinations that include review of environmental systems, SMS documentation and such MARPOL-mandated documents as the Oil Record Book and the Garbage Record Book.

The industry effort to develop waste management practices and procedures has focused on the traditional high volume wastes (garbage, graywater, blackwater, oily residues (sludge oil) and bilge water), pollution prevention, and the small quantities of hazardous waste produced onboard. In the process, ICCL members have shared waste management strategies and technologies, while focusing on a common goal of waste reduction.

The process of waste reduction includes waste prevention, the purchasing of products that have recycled content or produce less waste (e.g. source reduction), and recycling or reuse of wastes that are generated. The ultimate goal is to have the waste management culture absorbed into every facet of cruise vessel operation. A fully integrated system beginning with the design of the vessel should address environmental issues at every step.

Management practices for waste reduction should start before a product is selected. Eco-purchasing and packaging are vital to the success of any environmental program, as are strategies to change packaging, processes and management to optimize the resources used.

The commitment of the industry to this cooperative effort has been quite successful, as companies have shared information and strategies.

Industry Standard Waste Handling Procedures

ICCL member lines have agreed that hazardous wastes and waste streams onboard cruise vessels will be identified and segregated for individual handling and management in accordance with appropriate laws and regulations. They have further agreed, hazardous wastes will not be discharged overboard, nor be commingled or mixed with other waste streams.

- A. **Photo Processing, Including X-Ray Development Fluid Waste:** *ICCL member lines have agreed to minimize the discharge of silver into the marine environment through the use of best available technology that will reduce the silver content of the waste stream below levels specified by prevailing regulations or by treating all photo processing and x-ray development fluid waste (treated or untreated) as a hazardous waste and landing ashore in accordance with RCRA requirements.*

There are several waste streams associated with photo processing operations that have the potential to be regulated under the Resource Conservation and Recovery Act (RCRA). These waste streams include spent fixer, spent cartridges, expired film and silver flake.

Photographic fixer removes the unexposed silver compounds from the film during the developing process. The spent fixer can have as much as 2000-3000 parts per million (ppm) of silver. Silver bearing waste is regulated by RCRA as a hazardous waste if the level of silver exceeds 5 ppm as determined by the Toxicity Characteristic Leaching Procedure (TCLP) test.

Silver recovery units may be used to reclaim the silver from the used fixer waste stream. There are two types of recovery units. These are active (with electricity) and passive (without electricity) units. The active unit uses electricity to plate silver onto an electrode. The passive unit uses a chemical reaction between steel wool and silver to remove most of the silver from solution. Utilizing the best available technology, the equipment currently onboard ICCL member cruise ships is conservatively estimated to reduce the silver content of this effluent below 4 mg/l (milligrams/l or ppm)

The effluent from the silver recovery process must be tested before it can be discharged as a non-hazardous waste to be further diluted by addition to the ship's gray water. After the photographic and X-ray development fluids are treated for the removal of silver, the treated, non-hazardous effluent is then blended with the ship's graywater. In general, assuming that an entire week's photographic and X-ray development treated effluent stream is introduced into a single day's accumulation of graywater, the concentration of silver in the resulting mixture would be less than one-half of one part per billion (<0.5 micrograms/liter). Such mixing is not done on a weekly basis. Even at this assumed extreme however, it is expected that the silver concentration would only be approximately one fifth (1/5) the surface water quality standard for predominately marine waters specified in one state where cruise ships operate. When mixing is done on a daily basis it is evident that the resulting immediate concentration would be almost an order of magnitude less than this (1/50 of the current surface water quality standard). Additionally, it is evident that total mass of any discharges of silver would be negligible. Member lines have agreed that this discharge would be carried out only while their vessels are underway. Also, it should be noted that these estimates were carried out considering the largest cruise ships in service, which would produce the greatest amount of waste.

Handling Method 1 Employed by Member Lines:

Treat used photographic and x-ray development fluids to remove silver for recycling.

Verify that the effluent from the recovery unit is less than 5 parts per million (ppm) silver, as measured by EPA-approved methodology.

After treatment, the residual waste stream fluid is non-hazardous and landed ashore or discharged in accordance with the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) and other prevailing regulations.

Handling Method 2 Employed by Member Lines:

Used photographic and x-ray development fluids, either treated or untreated, may be assumed to be a hazardous waste. In this event, they are landed ashore in accordance with the requirements of the Resource Conservation and Recovery Act (RCRA).

- B. Dry-cleaning waste fluids and contaminated materials:** *ICCL member lines have agreed to prevent the discharge of chlorinated dry-cleaning fluids, sludge, contaminated filter materials and other dry-cleaning waste byproducts into the environment.*

Shipboard dry cleaning facilities use a chlorinated solvent called perchlorethylene (also known as PERC or tetrachloroethylene) as a dry cleaning fluid. This is the approved dry cleaning solvent for these units. Operators must receive specific required training for the correct use of this chemical and its associated precautions. This solvent should be used in accordance with all safety procedures including appropriate personal protective equipment (PPE).

The dry cleaning units produce a small volume waste from condensate, the bottoms of the internal recovery stills, waste products from button and lint traps, spent perchloroethylene and filter media. This waste is comprised of dirt, oils, filter material, and spent solvent. Each ship utilizing these dry-cleaning units produces approximately two pounds of waste material weekly. However, the amounts may vary greatly by season and passenger load. This material is classified as hazardous waste under RCRA and must be handled accordingly.

Handling Method 1 Employed by Member Lines:

Perchloroethylene (PERC) and other chlorinated dry-cleaning fluids, contaminated sludge and filter materials are hazardous waste and landed ashore in accordance with the requirements of RCRA.

- C. Print Shop Waste Fluids:** *ICCL member lines have agreed to prevent the discharge of hazardous wastes from printing materials (inks) and cleaning chemicals into the environment.*

Print shop waste may contain hazardous waste. Printing solvents, inks and cleaners all may contain hydrocarbons, chlorinated hydrocarbons, and heavy metals that can be harmful to human and aquatic species. Recent advances in printing technology and substitution of chemicals that are less hazardous reduces the volume of print shop waste generated and reduces the impact of these waste products.

ICCL member lines have agreed to utilize, whenever possible, printing methods and printing process chemicals that produce both less volume of waste and less hazardous waste products, that shipboard printers will be trained in ways to minimize printing waste generated, and that alternative printing inks such as soy based, non-chlorinated hydrocarbon based ink

products will be used whenever possible. The member lines have further agreed that all print shop waste including waste solvents, cleaners, and cleaning cloths will be treated as hazardous waste, if such waste contains chemical components that may be considered as hazardous by regulatory definitions, and that all other waste may be treated as non-hazardous.

Handling Method 1 Employed by Member Lines:

When using traditional or non-soy based inks and chlorinated solvents, all print shop waste is treated as hazardous, and discharged ashore in accordance with RCRA.

Handling Method 2 Employed by Member Lines:

Shipboard printing processes use non-toxic based printing ink such as soy based, non-chlorinated solvents, and other non-hazardous products to eliminate hazardous waste products.

- D. Photo Copying and Laser Printer Cartridges:** *ICCL member lines have agreed to initiate procedures so as to maximize the return of photocopying and laser printer cartridges for recycling, and in any event, have agreed that these cartridges will be landed ashore.*

Increased use of laser and photo copying equipment on shore as well as onboard ship results in the generation of increased volumes of waste cartridges, inks, and toner materials. ICCL member lines have agreed to use only such inks, toners and printing/copying cartridges that contain non-hazardous chemical components, and that none of these cartridges or their components should be disposed of by discharge into the marine environment. In recognition of the member lines' goal of waste minimization, they have further agreed these cartridges should, whenever possible, be returned to the manufacturer for credit, recycling, or for refilling.

Handling Method Employed by Member Lines:

ICCL member lines have agreed that wherever possible, photo copying and laser printer cartridges will be collected, packaged and returned for recycling and when this is not possible, that these materials will not be discharged into the sea or other bodies of water but will be handled as other shipboard waste that is landed ashore for further disposal.

- E. Unused And Outdated Pharmaceuticals:** *ICCL member lines have agreed to ensure that unused and/or outdated pharmaceuticals are effectively and safely disposed in accordance with legal and environmental requirements.*

In general ships carry varying amounts of pharmaceuticals. The pharmaceuticals carried range from over-the-counter products such as anti-fungal creams to prescription drugs such as epinephrine. Each ship stocks an inventory based on its itinerary and the demographics of its passenger base. ICCL member lines have agreed that all pharmaceuticals will be managed to ensure that their efficacy is optimized and that disposal is done in an environmentally responsible manner.

ICCL member lines have further agreed that when disposing of pharmaceuticals, the method used will be consistent with established procedures, and that pharmaceuticals and medications which are off specification or which have exceeded their shelf-life, and stocks that are unused and out of date, cannot be used for patients and therefore will be removed from the ship. Further, each regulatory jurisdiction has a posting of listed pharmaceuticals that must be

considered hazardous waste once the date has expired or the item is no longer considered good for patient use.

Through onboard management of the medical facility, ICCL member lines have agreed that stocks of such listed pharmaceuticals are returned to the vendor prior to date of expiration. Pharmaceuticals that are being returned and which have not reached their expiration date are shipped using ordinary practices for new products.

Safety and Health

ICCL member lines have agreed that all expired listed pharmaceuticals will be handled in accordance with established procedures and all personnel handling this waste will receive appropriate training in the handling of hazardous materials. As guidance, the US Environmental Protection Agency (EPA) has issued a report that clarifies the fact that residuals, such as epinephrine, found in syringes after injections are not considered an acutely hazardous waste by definition and may be disposed of appropriately in sharps containers. Member lines have agreed that all Universal Precautions will be adhered to when handling sharps.

Handling Method 1 Employed by Member Lines:

Establish a reverse distribution system for returning unexpired, unopened non-narcotic pharmaceuticals to the original vendor.

Handling Method 2 Employed by Member Lines:

Appropriately destroy narcotic pharmaceuticals onboard ship in a manner that is witnessed and recorded.

Handling Method 3 Employed by Member Lines:

Land listed pharmaceuticals in accordance with local regulations. Listed pharmaceuticals are a hazardous waste having chemical compositions which prevent them from being incinerated or disposed of through the ship's sewer system. Listing of such pharmaceuticals may vary from state to state.

Handling Method 4 Employed by Member Lines:

Dispose of other non-narcotic and non-listed pharmaceuticals through onboard incineration or landing ashore.

F. Fluorescent And Mercury Vapor Lamp Bulbs: *ICCL member lines have agreed to prevent the release of mercury into the environment from spent fluorescent and mercury vapor lamps by assuring proper recycling or by using other acceptable disposal.*

The recycling of fluorescent lights and high intensity discharge (HID) lamps is a proven technology capable of reliably recovering greater than 99 percent of the mercury in the spent lights. This is done by using a crush-and-sieve method. In this process, the spent tubes are first crushed and then sieved to separate the large particles from the mercury containing phosphor powder. The phosphor powder is collected and processed under intense heat and pressure. The mercury is volatilized and then recovered by condensation. The glass particles are segregated and

recycled into other products such as fiberglass. Aluminum components are also recycled separately.

Storage and handling of used lights pose no compatibility problems; nevertheless, storage and shipment of the glass tubes is best done keeping the glass tubes intact. These items are classified as "Universal Waste" when they are shipped to a properly permitted recycling facility; as such, testing is not required.

Safety and Health

Fluorescent and Mercury Vapor lamps contain small amounts of mercury that could potentially be harmful to human health and the environment. To prevent human exposure and contamination of the environment, ICCL member lines have agreed that these lamps will be handled in an environmentally safe manner. Recycling of mercury from lamps and other mercury containing devices is the preferred handling method and is encouraged by various states. The recycling of fluorescent lights and HID lamps keeps potentially hazardous materials out of landfills, saves landfill space and reduces raw materials production needs.

Handling Method Employed by Member Lines:

Fluorescent and mercury vapor lamps are collected and recycled or landed for recycling or disposal in accordance with prevailing laws and regulations.

G. Batteries: *ICCL member lines have agreed to prevent the discharge of spent batteries into the marine environment.*

If not properly disposed of, spent batteries may constitute a hazardous waste stream. Most of the large batteries are on tenders and standby generators. Small batteries used in flashlights and other equipment and by passengers, account for the rest. There are four basic types of batteries used.

Lead-acid batteries – These are used in tenders and standby generators. They are wet, rechargeable, and usually six-celled. They contain a sponge lead anode, lead dioxide cathode, and sulfuric acid electrolyte. The electrolyte is corrosive. These batteries require disposal as a hazardous waste, unless recycled or reclaimed.

Lead-acid batteries use sulfuric acid as an electrolyte. Battery acid is extremely corrosive, reactive and dangerous. Damaged batteries will be drained into an acid-proof container. A damaged and leaking battery is then placed in another acid-proof container, and both the electrolyte and the damaged battery placed in secure storage for proper disposal as a hazardous waste.

Nickel-cadmium (NiCad) batteries – These are usually rechargeable, and contain wet or dry potassium hydroxide as electrolyte. The potassium hydroxide is corrosive and the cadmium is a characteristic hazardous waste. Therefore, NiCad batteries will be disposed of as hazardous waste, unless recycled or reclaimed.

Lithium batteries – These are used as a power source for flashlights and portable electronic equipment. All lithium batteries will be disposed of as hazardous waste, or sent out for reclamation.

Alkaline batteries – These are common flashlight batteries and are also used in many camera flash attachments, cassette recorders, etc. They should be recycled, properly disposed or reclaimed.

Handling Method Employed by Member Lines:

Spent batteries are collected and returned for recycling and/or disposal in accordance with prevailing regulations. Discarded batteries are isolated from the refuse waste stream to prevent potentially toxic materials from inappropriate disposal. The wet-cell battery-recycling program is kept separate from the dry battery collection process. Intact wet-cell batteries are sent back to the supplier. Dry-cell batteries are manifested to a licensed firm for recycling.

H. Bilge and Oily Water Residues: *ICCL member lines have agreed to meet and exceed the international requirements for removing oil from bilge and wastewater prior to discharge.*

The area of the ship at the very bottom of the hull is known as the bilge. The bilge is the area where water collects from various operational sources such as water lubricated shaft seals, propulsion system cooling, evaporators, and other machinery. All engine and machinery spaces also collect oil that leaks from machinery fittings and engine maintenance activities. In order to maintain ship stability and eliminate potential hazardous conditions from oil vapors in engine and machinery spaces, the bilge spaces should be periodically pumped dry. In discharging bilge and oily water residues, both international regulations (MARPOL) and United States regulations require that the oil content of the discharged effluent be less than 15 parts per million and that it not leave a visible sheen on the surface of the water.

All ships are required to have equipment installed onboard that limits the discharge of oil into the oceans to 15 parts per million when a ship is en route and provided the ship is not in a special area where all discharge of oil is prohibited. Regulations also require that all oil or oil residues, which cannot be discharged in compliance with these regulations, be retained onboard or discharged to a reception facility. The equipment and processes implemented onboard cruise ships to comply with these requirements are complex and sophisticated.

The term "en route" as utilized in MARPOL (73/78) Regulation 9(b) is taken to mean while the vessel is underway. The U.S. Coast Guard has informed ICCL that it agrees with this meaning of "en route."

In accordance with MARPOL (73/78) Regulation 20, ICCL member lines have agreed that every ship of 400 gross tons and above shall be provided with an oil record book which shall be completed on each occasion whenever any of numerous specified operations take place in the ship and that operations include:

- a. Ballasting or cleaning of fuel oil tanks,
- b. Discharge of dirty ballast or cleaning water from the fuel oil tanks above,
- c. Disposal of oily residues,
- d. And discharge of bilge water that accumulated in machinery spaces.

Requirements regarding the keeping of an Oil Record Book as well as the form of the Oil Record Book are also found in MARPOL and in U.S. Coast Guard regulations (33CFR151).

Handling Method Employed by Member Lines:

Bilge and oily water residue are processed prior to discharge to remove oil residues, such that oil content of the effluent is less than 15 ppm as specified by MARPOL Annex 1.

- I. **Glass, Cardboard, Aluminum and Steel Cans:** *ICCL member lines have agreed to eliminate, to the maximum extent possible, the disposal of MARPOL Annex V wastes into the marine environment through improved reuse and recycling opportunities, and that no waste will be discharged into the marine environment unless it has been properly processed and can be discharged in accordance with MARPOL and other prevailing requirements.*

Management of shipboard generated waste is a challenging issue for all ships at sea. This is true for cruise vessels, other commercial vessels, military ships, fishing vessels and recreational boats. Waste products in earlier days were made from natural materials and were mostly biodegradable. Today's packaging of food and other products presents new challenges for waste management. A large cruise ship today can carry over three thousand passengers and crew. Each day, an average cruise passenger will generate two pounds of dry trash and dispose of two bottles and two cans.

A strategy of source reduction, waste minimization and recycling has allowed the cruise industry to significantly reduce shipboard generated waste. To attain this, ICCL member lines have agreed to adopt a multifaceted strategy that begins with waste minimization to decrease waste from provisions brought onboard. This means purchasing in bulk, encouraging suppliers to utilize more efficient packaging, reusable packaging, and packaging materials that are more environmentally friendly—those that can be more easily disposed of or recycled. In fact, through this comprehensive strategy of source reduction, total waste on passenger vessels has been reduced by nearly half over the past ten years.

Another important component of the industry's waste reduction strategy is product or packaging recycling. Glass, aluminum, other metals, paper, wood and cardboard are, in most cases, recycled.

Handling Method Employed by Member Lines:

MARPOL Annex V ship waste is minimized through purchasing practices, reuse and recycling programs, landing ashore and onboard incineration in approved shipboard incinerators. Any Annex V waste that is discharged at sea will be done in strict accordance with MARPOL and any other prevailing requirements.

- J. **Incinerator Ash:** *ICCL member lines have agreed to reduce the production of incinerator ash by minimizing the generation of waste and maximizing recycling opportunities, and that the discharge of incinerator ash containing hazardous components will be prevented through a program of waste segregation and periodic ash testing.*

Incinerator ash is not normally a hazardous waste. Through relatively straightforward waste management strategies, items that would cause the ash to be hazardous are separated from the waste stream and handled according to accepted hazardous waste protocols. In general, source segregation for waste streams is foundational for onboard waste management and is incorporated into the waste management manual required by MARPOL. Waste management for onboard waste streams include the following: source reduction, minimization, recycling,

collection, processing and discharge ashore. This allows the incinerator to be used primarily for food waste, contaminated cardboard, some plastics, trash and wood.

Member lines have agreed that incinerator ash will be tested at least once quarterly for the first year of operation to establish a baseline and that testing may then be conducted once a year. The member lines have further agreed that a recognized test procedure will be used to demonstrate that ash is not a hazardous waste. A recognized test procedure includes the following metals as indicators for toxicity - arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Special attention is placed on the removal of batteries from the incinerator waste stream. The use of incinerators saves landfill space and prevents the build up of material onboard that could become the breeding ground for insects, rodents and other vermin.

Handling Method Employed by Member Lines:

Proper hazardous waste management procedures are to be instituted onboard each ship to assure that waste products, which will result in a hazardous ash, are not introduced into the incinerator. Non-hazardous incinerator ash may be disposed of at sea in accordance with MARPOL Annex V. Ash identified as being hazardous is disposed of ashore in accordance with RCRA.

K. Wastewater reclamation

Because of the amounts of fresh water involved, and its restricted availability onboard ship (all fresh water must be either purchased or generated onboard), fresh water is a valuable commodity. Therefore, water management is extremely important and takes the form of both minimizing water usage and the potential reclamation and reuse of water for non-potable purposes. Many ICCL companies are researching new technology and piloting graywater treatment systems onboard their vessels. ICCL member operators also take numerous steps in onboard water management. Water management techniques include:

- a. Use of technical water (for example: air conditioning condensate) where possible.
- b. Use of water recovery systems (for example: filtering and reuse of laundry water - last rinse use for first wash).
- c. Reclamation and reuse as technical water (flushing toilets, laundry, open deck washing) of properly treated and filtered wastewaters.
- d. Active water conservation (for example: use of reduced flow showerheads, vacuum systems for toilets, vacuum food waste transportation and laundry equipment that utilizes less water).

L. Graywater: *ICCL member lines have agreed to discharge graywater only while the ship is underway and proceeding at a speed of not less than 6 knots; that graywater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of graywater will comply with all applicable laws and regulations.*

The term graywater is used on ships to refer to wastewater that is generally incidental to the operation of the ship. The International Maritime Organization (IMO) defines graywater as including drainage from dishwasher, shower, laundry, bath and washbasin drains. The US Clean Water Act (formally known as the Federal Water Pollution Control Act) includes galley, bath and shower water in its definition of graywater. The US regulations implementing this act do not

include a further definition of gray water. However, the regulations do include a provision that exempts all of the wastewater included in the IMO definition and other discharges incidental to the operation of a ship from the Clean Water Act's permitting program (formally known as the National Pollution Discharge Elimination System (NPDES) program). Finally, the US Coast Guard regulations include provisions that essentially combine the two definitions from the IMO and the Clean Water Act. None of the definitions of graywater include blackwater (discussed below) or bilgewater from the machinery spaces. Recent U.S. Legislation places limits on the discharge of graywater in the Alaska Alexander Archipelago.

Handling Method Employed by Member Lines:

Graywater is discharged only while ships are underway and proceeding at a speed of not less than 6 knots, in recognition that dispersal of these discharges is desirable and that mixing of these waters, which are discharged approximately 10-14 feet below the surface, by the action of the propellers and the movement of the ship, provides the best dispersal available.

*M. **Blackwater:** ICCL member lines have agreed to discharge blackwater only while the ship is underway traveling at a speed of not less than 6 knots and in accordance with applicable regulation, and that blackwater will not be discharged in port and will not be discharged within 4 nautical miles from shore or such other distance as agreed to with authorities having jurisdiction or provided for by local law, except in an emergency, or where geographically limited. The member lines have further agreed that the discharge of blackwater will comply with all applicable laws and regulations.*

Waste from toilets, urinals, medical sinks and other similar facilities is called "blackwater." Most cruise ships separate blackwater from other wastewaters before processing and/or discharge.

Treated blackwater is processed using an approved "Marine Sanitation Device" (MSD) that is intended to prevent the discharge of untreated or inadequately treated blackwater. Marine Sanitation Devices use physical, chemical and/or biological processes to allow effluent from the process to be discharged with characteristics that are similar to effluents from conventional, shoreside wastewater treatment plants.

All MSDs are certified and approved by the US Coast Guard. The US Coast Guard consults with the Environmental Protection Agency in evaluating processes used to certify MSDs.

The US Coast Guard regularly inspects MSDs while onboard ships for proper operation during their Control Verification Examinations. If the Coast Guard has reason to believe that an MSD is not properly operating, it can require the vessel owner to have the effluent sampled and analyzed by a qualified wastewater laboratory, with the results reported to the Coast Guard.

Handling Method 1 Employed by Member Lines:

Blackwater is treated by a properly working, approved Marine Sanitation Device prior to discharge. As agreed with and required by the U.S. Coast Guard, MSDs are tested periodically to ensure continued operation in accordance with certification standards.

Handling Method 2 Employed by Member Lines:

Untreated blackwater is discharged into the ocean at a distance greater than 4 nautical miles from any land, coral reef or designated sensitive area in accordance with MARPOL or such other distance as agreed to with authorities having jurisdiction

N. Advanced Wastewater Treatment Systems:

To improve environmental performance, cruise lines are testing and installing wastewater treatment systems that utilize advanced technologies. These onboard wastewater treatment systems are designed to result in effluent discharges that are of a high quality and purity; for example, meeting or surpassing standards for secondary and tertiary effluents and reclaimed water. Effluents meeting these high standards would not be subjected to the strict discharge limitations previously discussed.

O. Training and Educational Materials

Training is an important and ongoing part of every position and tasking onboard cruise ships. Not only is training necessary for the safe and economical operation of a ship, it is required by numerous international conventions and flag state regulations. The International Convention on Standards of Training Certification and Watchkeeping (STCW) for example, sets forth requirements for knowledge, experience and demonstrated competency for licensed officers of the deck and engineering departments and for ratings forming part of a navigation or engineering watch. These detailed requirements address not only the navigation of the ship but also the proper operation of the shipboard machinery and knowledge of and ability to assure compliance with the environmental protection requirements of MARPOL and the safety regulations of The International Convention on Safety of Life at Sea (SOLAS). SOLAS also requires that the ship's training manual (which contents are prescribed by regulation) be placed in the crew messes and recreation rooms or in individual crew cabins.

ICCL member lines have developed programs that raise the level of environmental awareness on the part of both the passengers and the crew. Each ship's crew receives training regarding shipboard safety and environmental procedures. Advanced training in shipboard safety and environmental management procedures is provided for those directly involved in these areas. Those directly responsible for processing wastes are given specific instruction in their duties and responsibilities and in the operation of the various equipment and waste management systems. Specific actions that our member lines have taken to train employees and increase passenger awareness include:

- a. Announcements over the public address system and notices in ship newsletters that caution against throwing any trash overboard,
- b. Signage and colorful posters placed in crew and passenger areas encouraging environmental awareness and protection,
- c. Safety and environmental information booklets in crew cabins and crew lounges,
- d. Regular meetings of ship safety and environmental committees consisting of officers and crew from all departments to review methods of improving performance, including better and more effective environmental practices.

STCW, SOLAS and the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM Code) require that training be fully documented. Individual training is documented in each crewmember's file. Ship training exercises, such as fire drills and emergency response exercises, are documented in the appropriate ship's logs. All of these

training documents are required to be available for oversight examination by both the ship's flag state inspectors and by port state authorities such as the United States Coast Guard.

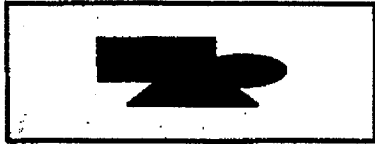
Placards warning of the prohibition of the discharge of oil are posted on all ships operating in the navigable waters of the United States as required by U.S. Coast Guard regulations (33CFR155.450). Additionally, as part of required shipboard waste management plans, both Coast Guard regulations (33CFR151.59) and MARPOL (Annex V Regulation 9) require the posting of placards that notify the passengers and the crew of the disposal requirements for garbage. These placards are to be written in the official language of the State whose flag the ship is entitled to fly and also in English or French if neither of these is the official language. Once again, oversight of compliance with these requirements is conducted by ISM audits and frequent inspections by flag states and the United States Coast Guard.

The Safety of Life at Sea Convention mandates compliance with the ISM Code. This comprehensive Code requires that each vessel operating company and each vessel participate in a very strictly defined management program, under both internal and external audit and regulatory oversight, that sets forth detailed procedures for assuring compliance with safety, environmental protection, emergency response and training mandates.

Equivalent equipment, practices and procedures

ICCL member lines have agreed that the use of equivalent or other acceptable practices and procedures shall be communicated to ICCL. As appropriate, such practices and procedures shall be included as a revision to this document. As an example, when improved systems for treating blackwater and graywater are perfected, shown to meet the requirements for MSDs and accepted by appropriate authorities for the treatment of graywater, the new systems and associated technology will be included together with their impact on the current standard of discharging graywater only while underway.

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SEPTEMBER XX, 2001

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. X – 2001

Subj: POLLUTION INSPECTION CHECKLIST AS ADDENDUM TO EXISTING FOREIGN PASSENGER VESSEL EXAMINATION BOOK, CG-840

- Ref:
- (a) Memorandum of Understanding (MOU) dated March 14, 2000 entered between Florida Department of Environmental Protection (FDEP) and the Florida-Caribbean Cruise Association (FCCA), a representative of the cruise industry in Florida.
 - (b) International Council of Cruise Lines (ICCL) Industry Standard E-01-01, "Waste Management Practices and Procedures."
 - (c) General Accounting Office Report of February 2000 on "MARINE POLLUTION – Progress Made to Reduce Marine Pollution by Cruise Ships, but Important Issues Remain."
 - (d) Title IV "Certain Alaskan Cruise Ship Operations" contained in Section 1(a)(4) of Public Law 106-554 enacted on December 21, 2000.
 - (e) 33 CFR 159, Subpart E – Discharge of Effluents in certain Alaskan Waters by Cruise Vessel Operations

1. **PURPOSE:** The checklist contained in Appendix 1 will eventually be incorporated as an extension to the existing Foreign Passenger Vessel Examination Book, CG-840. It is an extensive list of all possible examination items related to pollution prevention equipment, operation, plans and records. It is intended as a job aid to be used by Coast Guard senior marine inspectors during boardings of foreign-flagged passenger vessels. Inspectors should be especially familiar with the contents of the Marine Safety Manual (MSN), Volume II, Material Inspection, Section B, Chapter 6, "Pollution Prevention," and Section C, Chapter 2, Paragraph K, "Marine Sanitation Devices."
2. **DIRECTIVES AFFECTED:** This would revise the existing Foreign Passenger Vessel Examination Books CG-840, CV1, CV2 and CV3.
3. **DISCUSSION:** It is not the Coast Guard's intention to inspect all the items listed in the checklist at every exam; rather the inspector should use it as a reminder and use his/her own experience, knowledge, and judgment to determine the depth and scope of each examination.

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However, it is envisioned that the inspector will select at least one waste stream for a thorough and detailed examination. The selection will be based on the inspector's discretion, taking into account the inspectors impression about the condition of the various waste stream systems on board the vessel; weighing the need to inspect all systems over a reasonable period of time; and maintaining randomness so that the operator has no advance knowledge of the waste stream that may be selected. It is incumbent on the vessel operator to be familiar with this NVIC and its enclosure. The operator should be able to present to the inspector a clear description of the practices and procedures for handling each waste stream and also to produce such records, as the inspector might need to verify compliance with these guidelines. Inspectors should be familiar with ICCL's Industry Standard E-01-01 "Waste Management Practices and Procedures," and SMS documentation on ICCL cruise ships should closely follow this standard. The different waste streams may be categorized as follows:

- a. Oil pollution prevention systems, which include the oily water separator, the fuel/lubricating oil, transfer and sludge containment system. The inspector should verify that the oily water separator is operating within the desired range; that the alarms are working; that crew is knowledgeable and operating instructions are posted; and that maintenance is carried out at regular intervals. Actual piping may be verified against the approved piping diagram if the inspector notices modifications made to the system.
- b. Gray water system includes discharges from galley, sinks, washbasin drains, showers, and baths. These may be held in large tanks before being pumped overboard. The handling and discharge of gray water will vary from ship to ship and the inspector should ensure the procedures followed by the ship correspond to those described in its Ship Management System (SMS) documentation. Gray water should normally not be pumped through a Marine Sanitation Device (MSD) because an MSD is not designed to handle the volume of gray water produced on a cruise ship. Other waste streams such as hazardous waste or medical waste must also not be mixed with gray water. Drains from hospitals, photo labs, slops, must be separate from the gray water system.
- c. Black water system includes marine sanitation devices and other systems to treat, store, and discharge sewage. The checklist is designed to guide the inspector through some basic questions to ascertain whether the system is working as designed and that the crew is properly trained in its operation. For example, does the MSD appear to be properly installed? Is there adequate capacity for the number of persons on board? Are maintenance procedures being followed? Are there records of expendables being ordered: filters, chemicals, et cetera? Are the units operating within the manufacturer's design specifications? Are there clear and simple operating instructions? Is the crew knowledgeable in the use of the equipment/system?
- d. Hazardous waste includes dry cleaning (PERC) waste, used paints and thinners, silver-bearing photo-processing waste, cleaning solutions and other similar items. Each vessel may vary in both the type and volumes of hazardous waste generated depending on the technology and processes aboard ship. This checklist is designed to evaluate on-board management of hazardous waste streams and to ensure that hazardous constituents are

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not released into the environment and that accountability is demonstrated via adequate waste disposal records.

- e. **Non-hazardous waste.** This would include shipboard garbage including plastics and synthetic material, medical waste, food wastes and recyclables such as glass, cardboard, aluminum and metal cans. Items to be checked should include waste sorted to prevent hazardous waste from entering the non-hazardous waste stream; no plastics or synthetics discharge overboard, separate and proper disposal of hazardous and non-hazardous incinerator ash; and proper disposal of grease from grease traps.

4. BACKGROUND:

- a. On March 14, 2000, the Florida Caribbean Cruise Association (FCCA) signed a Memorandum of Understanding (MOU) with the Florida Department of Environmental Protection (FDEP) (Ref 1). Under this MOU, the FDEP recognized ICCL's Industry Standard E-01-01 "Waste Management Practices and Procedures," as meeting or exceeding the standards set forth in Florida laws and applicable Florida regulations. Though the Coast Guard was not a party to the MOU, the Coast Guard was in attendance during the signing and during prior discussions leading up to the MOU.
- b. The FDEP also recognized the Coast Guard as the primary federal agency with the responsibility to examine cruise vessels for the proper administration of waste streams. As a result the Coast Guard worked in conjunction with FDEP and ICCL to develop a checklist section related to monitoring of hazardous waste and disposal.
- c. At the same time, a number of other pollution prevention initiatives were also underway. The General Accounting Office (GAO) had just completed a report to Congress (Ref. 3) recommending that the Coast Guard initiate discussions with the cruise ship industry, other federal and state agencies, and environmental groups as appropriate, on the need for improved water quality standards for gray water and black water discharged from cruise ships and other vessels and assess the need to periodically monitor the water quality of these discharges. Subsequently, legislation was passed (Ref. 4) and regulations were promulgated (Ref. 5) related to monitoring and sampling of black water and gray water on cruise ships in Alaska.
- d. The Coast Guard has taken this opportunity to prepare this checklist consolidating all CG pollution inspection items on passenger vessels and fill in the gaps as needed. The checklist was developed by the CG in conjunction with FDEP and ICCL.

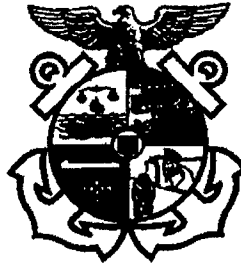
5. ACTION: Officers in Charge Marine Inspections (OCMIs) should:

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- a. Bring this circular to the attention of appropriate individuals in the marine industry within their zones, especially those in the industry that are not members of ICCL.
- b. Follow the guidance in this circular while conducting control verification examinations on passenger vessels.
- c. If a vessel is detained for non-conformance with RCRA, notify the State RCRA program office immediately.

Encl: (a) Pollution inspection checklist for passenger cruise vessels

United States Coast Guard



**FOREIGN PASSENGER VESSEL
POLLUTION SURVEY EXAM BOOK
(FOR ALL PASSENGER VESSELS)**

Name of Vessel	Flag ☒ No Change
IMO Number	Case Number
Date Completed	
Location	
Senior Marine Inspectors / Port State Control Officers	
1. _____	5. _____
2. _____	6. _____
3. _____	7. _____
4. _____	8. _____

Use of Foreign Passenger Vessel Pollution Survey Exam Book

This Checklist is an extensive list of all possible examination items related to pollution prevention equipment, operation, plans and records. It is intended as a job aid to be used by Coast Guard senior marine inspectors during boardings of foreign-flagged passenger vessels. It is not the Coast Guard's intention to inspect all the items listed in the checklist at every exam; rather the inspector should use it as a reminder and use his/her own experience, knowledge, and judgment to determine the depth and scope of each examination. However, it is envisioned that the inspector will select at least one waste stream for a thorough and detailed examination. The selection will be based on the inspector's discretion, taking into account the inspectors impression about the condition of the various waste stream systems on board the vessel; weighing the need to inspect all systems over a reasonable period of time; and maintaining randomness so that the operator has no advance knowledge of the waste stream that may be selected. It is incumbent on the vessel operator to be familiar with this checklist. The operator should be able to present to the inspector a clear description of the practices and procedures for handling each waste stream and also to produce such records, as the inspector might need to verify compliance with these guidelines.

As a port state responsibility, senior marine inspectors/port state control officers must verify that the vessels and their crews are in substantial compliance with international conventions and applicable U.S. laws. The senior marine inspectors/port state control officers, based on their observations, must determine the depth and scope of the examination. This document does not establish or change Federal laws or regulations. References given are only general guides. Refer to IMO publications, United States Code, Code of Federal Regulations, the Port State Control Job Aid, NVIC's, and any locally produced guidance for specific regulatory references. Inspectors should be especially familiar with the contents of the Marine Safety Manual (MSN), Volume II, Material Inspection, Section B, Chapter 6, "Pollution Prevention," and Section C, Chapter 2, Paragraph K, "Marine Safety Devices."

NOTE: Guidance on how to examine foreign passenger vessels for compliance with pollution prevention can be found in Navigation Vessel Inspection Circular (NVIC) XX-2001.

Conducting the exam

- Complete Certificates/Equipment Data/Records information (Section A).
- Review SMS Environmental Procedures (Section B).
- Examine MSD, OWS, Garbage logs, Oil Record Book as per CG-840 Exam books for CVQ or CVE as appropriate.
- Select one of the following waste streams for a detailed exam (Section C)
 - Section
 - C1 Oil Pollution Handling Waste Stream (Bilge, Sludge, Fuel, Lube Oil etc)
 - C2 Gray Water Waste Stream
 - C3 Black Water/Sewage Waste Stream
 - C4 Hazardous Waste Stream
 - C5 Non-hazardous Waste Stream

NOTE: Many items listed are not mandatory requirements, but fall under the umbrella of "Management Policy". Inspectors should be familiar with ICCL's Industry Standard E-01-01 "Waste Management Practices and Procedures," and SMS documentation on ICCL cruise ships should closely follow this standard. If the areas listed are corporate policy as set out in the company's Safety Management System (SMS), then the vessel should be held accountable for the actions as required in 33 CFR 96 and SOLAS Chapter IX. If state or local laws exist that are more stringent than US or international law, then the local or state laws must be followed. These vessels are not exempt simply because they are a foreign vessel.

Pre-inspection Items

- Review MSIS records
- PSVH
- MISN (past)
- MIAR (past)
- Print Center for Disease Control Green Sheet
<http://www2.cdc.gov/nceh/vsp/vspmain.asp>

Post-inspection Items

- Issue letters/certificates to vessel
- Issue Port State Control Report of Inspection-Form A
- Issue Port State Control Report of Inspection-Form B (if needed)
- Fill out Vessel Record Card (to include "Waste Stream" area inspected)
- MIAR activity case MARPOL (MAR) in addition to CCV or CVQ

Certificates / Reports

Name of Certificate	Issuing Agency	ID #	Port Issued	Issued Date	Expiration Date
International Oil Pollution Prevention					
International Sewage Pollution Prevention Certificate (if issued)					
US Public Health Report (USPH latest report)					
State Certificates of Emission (if applicable)					
State Certificates of Ballast Water (if applicable)					

Equipment Data

Equipment Name	Capacity	US or MEPC Approval Nr	Authority/Agency
Oily Water Separator	Throughput		
Oily Water Separator	Throughput		
Oily Water Separator	Throughput		
Waste Oil Holding Tank Capacity			
Marine Sanitation Device Certificate of Type Test	Volume/day		
Marine Sanitation Device Certificate of Type Test	Volume/day		
Marine Sanitation Device Certificate of Type Test	Volume/day		
Black Water Tank Capacity			
Gray Water Tank Capacity			

Pollution Records

	Date	Location	Amc
Last time bunkers were taken on			
Next time bunkers will be taken on			
Last time sludge/oily bilge water pumped ashore			
Last operation of OWS or overboard discharge			
Garbage incinerated			
Garbage discharged overboard at sea			
Garbage discharged ashore			
Required U.S. Ballast Water Report			

Environmental Procedures can be found in the Ship Management System (SMS) documentation or in Company Policies and maintenance manuals, inspection logs, oil record books, etc. The inspector should question the ship staff on procedures and normal operations, and compare the answer to what is written in procedures and manuals.

- | | |
|--|--|
| <input type="checkbox"/> Current pollution prevention records <ul style="list-style-type: none"> • Person-in-charge designated and qualified • Transfer equipment tests and inspections • Declaration of Inspection • Ship to provide PMS logs and required PMS activities for the selected waste stream for verification. • Verify SMS incorporates PMS activities and logs for all Waste Streams. | 33 CFR 156.150
33 CFR 155.700
33 CFR 156.170 |
| <input type="checkbox"/> Oil Record book (Part 1) (spot-check) <ul style="list-style-type: none"> • Each operation signed by person-in-charge • Each complete page signed by master • Book maintained for 3 years • Use of proper codes and version for vessel • Transfer receipts/manifest match oil record book entries | MARPOL Annex. I/20
33 CFR 151.25 |
| <input type="checkbox"/> Shipboard Oil Pollution Emergency Plan <ul style="list-style-type: none"> • Approved by administration (class society) • Updated and current • In English and working language of crew • Correct contact numbers for National and Local Authorities (Port Authorities for ports visited not every COTP) • Immediate Actions List • Non Mandatory Provisions (if listed in SOPEP) Spill kits located and inspected | MARPOL Annex.
I/26.1
33 CFR 151.26 |
| <input type="checkbox"/> Oil Transfer Procedures <ul style="list-style-type: none"> • Posted / available in crew's language • Formal in CFR order or cross reference index page • List/description of products carried by vessel • Description of transfer system including a line diagram of piping system (pumps, vents, valves, alarms, shutoffs, etc.) • Number of persons required on duty • Duties by title of each person • Means of communication (two-way voice) • Procedures to top off tanks and disconnect • Procedures to report oil discharges • Emergency response procedures (fire, spill, human exposure) | 33 CFR 155.720
33 CFR 155.750
33 CFR 154.310 |
| <input type="checkbox"/> Garbage Management Plan <ul style="list-style-type: none"> • Garbage Record Book • Type, amount, location, date/time • Receipts • Each entry signed by Officer-in-Charge and each page by Master • Person-in-Charge Designated | |
| <input type="checkbox"/> Hazardous Waste Disposal Documentation <ul style="list-style-type: none"> • EPA Generator ID# _____ • Records • Uniform Hazardous Waste Manifests • Land Disposal Restriction Notification Certification Forms (LDR) • Shipping Document for Regulated Medical Waste | |

Section B
Environmental Procedures
Con't

- | | |
|--|--|
| <input type="checkbox"/> MARPOL V placard posted | MARPOL Annex V/9 |
| <input type="checkbox"/> Garbage Management Plan <ul style="list-style-type: none">• Garbage Record Book• Type, amount, location, date/time• Receipts• Each entry signed by Officer-in-Charge and each page by Master | MARPOL Annex V
MARPOL Annex
V/9(3)
MARPOL Annex
V/9(2) |
| <input type="checkbox"/> Person-in-Charge Designated | |
| <input type="checkbox"/> Non-Hazardous Waste Disposal Documentation <ul style="list-style-type: none">• EPA Generator ID# _____• Records• Non-Hazardous Waste Manifests | U.S. Local
Regulations as
applicable |
| <input type="checkbox"/> Records of consumables kept updated
Used and unused | Shipboard Records
(ISM) |
| <input type="checkbox"/> International Sewage Pollution Prevention Certificate (when MARPOL IV enacted) | MARPOL Annex IV |
| <input type="checkbox"/> Recycling policy being followed | Shipboard policy
(ISM) |

Section C1
Oil Pollution Handling Waste Stream (Bilge, Sludge, Fuel, Lube Oil etc)

Oil pollution prevention systems, which include the oily water separator, the fuel/lubricating oil, transfer and sludge containment system. The inspector should verify that the oily water separator is operating within the required range; that the alarms are working; that crew is knowledgeable and operating instructions are posted; and that maintenance is carried out at regular intervals. Actual piping may be verified against the approved piping diagram if the inspector notices modifications made to the system.

- | | | |
|--------------------------|---|---|
| <input type="checkbox"/> | Oily water Separator <ul style="list-style-type: none"> • Verify bilge suction piping (section) matches approved piping diagram (direct to OWS, to holding tank, etc.) • Observe general housekeeping and cleanliness • Witness operational test of OWS, evaluate operator competency. System operating in published ranges • Test 15 ppm Oil Content Meter and alarm • Verify system automatically recirculates (3-way valve) or shuts down when >15ppm • Visually sample processed water • Compare ship's operational maintenance routine with actual Preventative Maintenance conducted. Request proof/documentation of maintenance completed (used consumables from OWS, receipts of service, technician reports, contractor disposal records) • Review meter calibration records • Lab analysis of sample as appropriate/needed | MARPOL Annex I/16 |
| <input type="checkbox"/> | Oil Pollution placard posted | 33 CFR 155.450 |
| <input type="checkbox"/> | Standard discharge connection | MARPOL Annex I/19
33 CFR 155.430
33 CFR 155.320 |
| <input type="checkbox"/> | Fuel/Lube oil fill and sludge discharge containment <ul style="list-style-type: none"> • Size (<1600GT _ bbl, >1600GT 1 bbl) • Fixed (Built after 30Jun74) or Portable (before 30Jun74) • Drains • Scupper closures | 33 CFR 155.470 |
| <input type="checkbox"/> | Prohibited oil spaces | 33 CFR 155.790 |
| <input type="checkbox"/> | Deck/Bunker Station lighting | 33 CFR 155.800/805 |
| <input type="checkbox"/> | Oil transfer hose (if vessel uses to transfer in U.S. waters) including Tender Hoses <ul style="list-style-type: none"> • Condition • Markings (MAWP, Man. Date, Test date) • Hose assembly requirements (blanked off if not used) • Tests and inspections | 33 CFR 154.500
33 CFR 156.170 |
| <input type="checkbox"/> | Waste oil incineration <ul style="list-style-type: none"> • Tests and inspections • Record keeping | |

Section C2
Grey Water Waste Stream

Gray water system includes discharges from galley, sinks, washbasin drains, showers, and baths. These may be held in large tanks before being pumped overboard. The handling and discharge of gray water will vary from ship to ship and the inspector should ensure the procedures followed by the ship correspond to those described in its Ship Management System (SMS) documentation. Gray water should normally not be pumped through a Marine Sanitation Device (MSD) because an MSD is not designed to handle the volume of gray water produced on a cruise ship. Other waste streams such as hazardous waste or medical waste must also not be mixed with gray water. Drains from hospitals, photo labs, slops, must be separate from the gray water system.

(Clean Water Act)
33 USC 1251 et seq.
33 CFR 159.300
Subpart E for (D17)
Local Regulations

Sources

- Galley (ex. Dishwashers, floor drains, sinks)
- Showers/Baths & washbasin drains
- Laundry

Prohibited Sources (hazardous materials, bilges, photo shop, print shop, hospital spaces etc.)

Connections to the Black Water System

Connections to Ballast Water System

Number of tanks _____

Total tank capacity _____ m3

Volume Produced _____ (m3 per hour)

Maximum number of days in port without discharging, _____

Sufficient capacity for persons on board and time in port?

Review Gray water (SMS) Ship Management System documentation procedures.

Ensure Quality Assurance / Quality Control Plan - vessel specific.

Is Gray water processed and discharged?

What are disposal Gray water procedures: Shore and at Sea. (company policy)

What are their sampling procedures (vessel specific).

How often do they take samples (record book if applicable)

Samples test result - log record book.

What are the State, Federal and local regulations for Gray water discharge?

Disposal

- Shore
- At sea
- Sampling/Testing
- Note

Some gray water treatment employs advanced ultra-filtration systems, these systems claim to reduce gray water waste by 85% - 90%.

- Alaska - Effective July 2001, Operators of cruise vessels carrying 500 or more passengers and transiting applicable waters of Alaska are restricted in where they may discharge effluents and will be required to perform testing of sewage and gray water discharges. The Coast Guard will inspect, monitor, and oversee this process to ensure compliance with applicable water quality laws and regulations. (33 CFR 159)

Section C3
Black Water/Sewage Waste Stream

Black water system includes marine sanitation devices and other systems to treat, store, and discharge sewage. The checklist is designed to guide the inspector through some basic questions to ascertain whether the system is working as designed and that the crew is properly trained in its operation. For example, does the MSD appear to be properly installed? Is there adequate capacity for the number of persons on board? Are maintenance procedures being followed? Are there records of expendables being ordered: filters, chemicals, et cetera? Are the units operating within the manufacturer's design specifications? Are there clear and simple operating instructions? Is the crew knowledgeable in the use of the equipment/system?

Sources

- Toilets, Urinals, Water Closets, scuppers
- All Drainage from Medical Premises, photo labs, slops, must be separate from the gray water system.

System installed, maintained and operated in accordance with approved plans and manufactures specifications. Modifications documented

- Tank Capacity
- Volume Produced
- Chemical/Biological treatment
- Chemical Treatment Level
- Sufficient chemicals, additives, approved cleaning materials onboard. (enzymes, "Gamazyme", chlorine)
- Operating instructions

U.S. Marine Sanitation Device Requirements

- Type (I, II, III)
- Nameplate
Should be designed to resist efforts of removal or efforts to alter the information.
- Placard
- Proper operation (macerators, treatment chemicals)
- Structural integrity, no leaks
- Certificate of Type Test

Foreign Flag Vessels in U. S. Waters

A foreign flag vessel that has a "Certificate of Type Test" under MARPOL Annex IV indicating that its sewage treatment plant meets the test requirements of Resolution MEPC.2 (VI) of the International Maritime Organization (IMO) will be accepted by the Coast Guard as being in compliance with 33 CFR 159.7(b) or (c). The Certificate of Type Test must be issued by or on behalf of a government that is a party to the MARPOL convention. Such a plant will be considered as fully equivalent to a Coast Guard certified Type II MSD as long as the unit is in operable condition. However, the unit may not be labeled as USCG certified. U.S. registered vessels will continue to be required to have Coast Guard certified MSDs per 33 CFR 159.

Standard Discharge Connection (when Annex IV enacted)

- New ships 200 gross tons and above
- New ships less than 200 gross tons and carry more than 10 persons.
- Existing ships 200 gross tons and above after 10 years after the date entry into force of Annex IV

Disposal

- Shore
- Overboard valves secured
- At sea (provide proof of location discharge)
- Logged position, speed (if required by management)
 - When comminuted and disinfected greater than 4 miles.
 - When not comminuted or disinfected greater than 12 miles.
 - Both to be discharged while ship is underway at greater than 4 knots.
- EPA Prohibited Areas
- Connections to the gray water system
- Alaskan Waters:

Effective July 2001, Operators of cruise vessels carrying 500 or more passengers and transiting applicable waters of Alaska are restricted in where they may discharge effluents and will be required to perform testing of sewage and graywater discharges. The Coast Guard will inspect, monitor, and oversee this process to ensure compliance with applicable water quality laws and regulations. (33 CFR 159).

Sampling/Testing

- Lab analysis of fecal coliform/total suspended solids in effluent
- Results of residual chlorine content in effluent testing
- Calibration records for dosing pump/proportioner

MARPOL Annex IV
(Pending Ratification)
40 CFR 140.3 & .4
33 CFR 159.57
33 CFR 159.7
33 CFR 159.55
33 CFR 159.59
MARPOL Annex IV/8
40 CFR 140.3
MARPOL Annex IV/3
Resolution MEPC.2(VI)
(pending ratification)
33 CFR 159.65
NVIC 9-82

33 CFR 159.7
40 CFR 140.4
40 CFR 136

Hazardous waste includes dry cleaning (PERC) waste, used paints and thinners, silver-bearing photo-processing waste, cleaning solutions and other similar items. Each vessel may vary in both the type and volumes of hazardous waste generated depending on the technology and processes aboard ship. This checklist is designed to evaluate on-board management of hazardous waste streams and to ensure that hazardous constituents are not released into the environment and that accountability is demonstrated via adequate waste disposal records.

Hazardous Waste

40 CFR 262
49 CFR 173
RCRA
SARA Title III
42 USC 11002(a)(3)
40 CFR 355 App A / E

- Has the company conducted a waste determination? Through Process Knowledge or Waste Analysis (circle one)? If not, hazardous waste may not be landed.
- Have responsible personnel received initial and refresher training.
- Is there any evidence that hazardous wastes are being incinerated, diluted, neutralized, or evaporated as a means of disposal.
- Is there any evidence of hazardous material being discharged overboard?
- Are hazardous wastes being properly stored, maintained, labeled, and placarded? Note any observations made of deficiencies, dates and nature of repairs.
- Does the crew have ready access to spill control and decontamination equipment?
- Are records maintained and manifests completed for potential hazardous waste streams as follows:
 - Silver Bearing Photo Processing Waste (developers, wash water, Silver Recovery Units)
 - X-Ray equipment
 - Print Shop Waste (inks, dyes, cleaning solvents)
 - Used Solvents, Paints & Thinners
 - Fluorescent/Mercury Vapor Bulbs
 - Batteries:
 - Nickel Cadmium (Nicad)
 - Lead Acid
 - Lithium
 - Alkaline
 - Pharmaceuticals/Narcotics
 - Dry Cleaning Waste (PERC, lint, sludge, filters, condensate water)
 - Aerosol Cans
 - Cleaning Solutions (de-scalers, acids, bases)
 - Expired pyrotechnics
 - Rags contaminated with hazardous wastes

The following excerpt from 40 CFR 262 regarding Resource Conservation and Recovery Act (RCRA) requirements is provided for background information only. The State RCRA program office must be consulted if any clarifications are needed for a particular situation.

HAZARDOUS WASTE HANDLING REQUIREMENTS

§ 262.11 Hazardous waste determination.

A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the following method:

- (a) Determine if the waste is listed as a hazardous waste in subpart D of 40 CFR part 261.
- (c) Or if not listed in subpart D of 40 CFR part 261, generator must determine if the waste is identified in subpart C of 40 CFR part 261 by either:
 - (1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261
 - (2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

262.12 EPA identification numbers.

(a) A generator must not treat, store, dispose of, transport, or offer for transportation, hazardous waste without having received an EPA identification number from the Administrator.

262.20 General requirements.

- (a) A generator who transports, or offers for transportation, hazardous waste for offsite treatment, storage, or disposal must prepare a Manifest OMB control number 2050-0039 on EPA form 8700-22, and, if necessary, EPA form 8700-22A, according to the appendix to part 262.
- (b) Generator must designate on manifest one facility that is permitted to handle the waste described on the manifest.

262.23 Use of the manifest.

- (a) The generator must:
 - (1) Sign the manifest certification by hand; and
 - (2) Obtain the handwritten signature of the initial transporter and date of acceptance on the manifest; and
 - (3) Retain one copy, in accordance with § 262.40(a) and give the transporter the remaining copies of the manifest.

262.30, .31, .32 & .33 Packaging, Labeling, Marking and Placarding.

Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must package, label, mark and placard the waste in accordance with the applicable Department of Transportation regulations on packaging under 49 CFR parts 172, 173, 178, and 179. Before transporting hazardous waste or offering hazardous waste for transportation off-site, a generator must mark each container of 110 gallons or less used

in such transportation with the following words and information displayed in accordance with the requirements of 49 CFR 172.304: **HAZARDOUS WASTE – Federal Law Prohibits Improper Disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency. Generator's Name and Address ----- . Manifest Document Number ----- .**

262.34 Accumulation time.

A generator may accumulate hazardous waste on-site for 90 days or less for large quantity generator and 180 days or less for small quantity generator, without a permit or without having interim status.

The date upon which each period of accumulation begins must be clearly marked and visible for inspection on each container and while being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste."

§ 262.40 Recordkeeping.

(a) A generator must keep a copy of each manifest signed in accordance with § 262.23(a) for three years or until he receives a signed copy from the designated facility which received the waste. This signed copy must be retained as a record for at least three years from the date the waste was accepted by the initial transporter.

(b) A generator must keep a copy of each Biennial Report and Exception Report for a period of at least three years from the date of the report.

(c) A generator must keep records of any test results, waste analyses, or other determinations made in accordance with § 262.11 for at least three years from the date that the waste was last sent to on-site or off-site treatment, storage, or disposal.

Non-hazardous waste would include shipboard garbage including plastics and synthetic material, certain medical wastes, food wastes and recyclables such as glass, cardboard, aluminum and metal cans. Items to be checked should include waste sorted to prevent hazardous waste from entering the non-hazardous waste stream; no plastics or synthetics are to be discharged overboard, separate and proper disposal of hazardous and non-hazardous incinerator ash; and proper disposal of grease from grease traps.

- Garbage Management Procedures**
 - Shipboard garbage properly handled in accordance with Garbage Management Plan
 - No plastics or synthetics discharged overboard
 - Waste sorted to prevent hazardous waste entering non-hazardous waste stream or incinerated.
 - Incinerator ash if discharged overboard free of plastic residue (clinkers) or free of unburned food wastes if landed ashore.
 - Foreign Food Wastes handled per APHIS regulations
 - Medical Wastes-incinerated or manifested as Bio-Hazardous Waste.
 - Discharged outside of special areas only (when special area restrictions are in effect)
 - Incinerator operation observed (if in operation)

- Procedures to minimize amount of potential garbage**
 - Is vessel encouraging ship suppliers to consider alternate means of packing, use of other than plastics?
 - Is vessel using reusable packing?
 - Is waste generated while in port disposed to shore reception facility prior to sailing.

- Recycling**
 - Is ships crew following policy for recycling.

- Maintenance conducted on equipment**
 - Incinerator
 - Grinders

- Human factors**
 - Crew in garbage room comfortably positioned to perform jobs.
 - Warning signs posted around equipment.
 - Personal protective equipment available, functioning and in place.
 - Sanitation, from a health standpoint, being maintained (ILO 147).

- Record keeping**
 - Garbage Record Book
 - Type, amount, location, date/time
 - Receipts
 - Each entry signed by Officer-in-Charge and each page by Master
 - Any reports of alleged inadequacy of port reception facilities for garbage on file.

33 CFR 151.63
MARPOL Annex V/9
MARPOL Annex V/3

AGENT

Vessel representative hired by the ship's owners. Ship's agent may be tasked with various jobs such as: ensuring proper vessel documentation and compliance.

AUTOMATIC STOPPING DEVICE

Is a control mechanism that ensures discharge is stopped when the oil content of the effluent exceeds 15 parts per million (PPM).

BALLAST

Used to improve the stability and control the draft of a ship. (In Ballast - having only ballast for a load)

BLACK OIL

A black or very dark brown colored layer of oil. Depending on the quantity spilled, oil tends to quickly spread out over the water surface to a thickness of about one-millimeter.

BLACK WATER (sewage)

Examples - possible sources toilets, urinals, and medical waste.

CARGO SHIP

Any ship which is not a passenger ship.

COTP

Captain of the Port.

CWA

Clean Water Act.

CVE

Control Verification Exam.

DISPERSION

The breaking up of an oil slick into small droplets which are mixed into the water column as a result of breaking waves and other sea surface turbulence.

EFFLUENT

To flow out. (Waste material, refuse, and sewage)

EMULSIFICATION

The formation of a water - in - oil mixture. The tendency for emulsification to occur varies with different oils and is much more likely to occur under high-energy conditions (wind and waves).

EPA

Environmental Protection Agency

15 PPM ALARM

An alarm that activates when the effluent passing through oil-filtering equipment exceeds 15 PPM.

GRAY WATER

Includes discharges from galley, sinks, washbasin, drains, showers and baths. These may be held in large tanks prior to being discharged overboard (State, Fed, regulation permitting).

HSSC

Harmonized system of survey and certification.

I'CCCL

International Counsel of Cruise Lines, participates in regulatory and policy development process to promote all measures that foster a safe, secure, healthy cruise ship environment.

ICLL

International Convention for Load Lines.

IMO

International Maritime Organization. Specialized agency of the United Nations concerned solely with maritime affairs. Responsible for international treaties, conventions, resolutions and codes to improve Maritime safety.

ISM

International Safe Management

MARPOL

The international convention for the prevention of pollution from ships.

MSC

Maritime Safety Committee. The highest technical body of the IMO deals with issues such as aids to navigation, vessel equipment, and construction, manning requirements handling dangerous cargoes, hydrostatic information and marine casualty information.

MSD

Marine Sanitation Device.

OIL CONTENT METER

An instrument used to measure continuously the oil content of the effluent in the line to ensure that the operation does not contravene the convention.

OIL FILTERING EQUIPMENT

Equipment that uses any combination of a separator, filter or coalescer, and also a single unit designed to produce an effluent with oil content less than 15ppm. (MARPOL reg 16(1))

Oily Water Separator

The basic principle of oil / water separation is their difference in specific gravity. The specific gravity of most oils is less than water; therefore, it will naturally float to the top of an oil / water solution. Small droplets of oil float to the top much slower than large droplets. This is due to the large surface area to mass ratio. To speed up the process of separation, OWS units form larger oil droplets out of smaller ones, thus decreasing the surface area to mass ratio. The increased mass of the oil droplet increases its buoyancy, thus causing it to rise more quickly.

PASSENGER SHIP

A ship which carries more than 12 passengers.

PMS

Preventative Maintenance System

QUALIFIED INDIVIDUAL (QI)

The person authorized by the responsible party to act on their behalf, authorize expenditures and obligate organization's resources.

RCRA

Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the issue of how to safely manage and dispose of the huge volumes of municipal and industrial waste generated nationwide.

RECOVERABLE OIL

Oil that is in a thick enough layer on the water to be recovered by conventional techniques and equipment. Only black or dark brown oil, mousse, and heavy sheens (dull brown) are generally considered thick enough to be effectively recovered by skimmers.

SEPARATION EQUIPMENT

A device designed to remove enough oil from an oil-water mixture to provide a resulting mixture with an oil content of less than 100ppm, or 15ppm, such as an Oily Water Separator (OWS).

SLICK

Oil spilled on the water, which absorbs energy and dampens out the surface waves making the oil appear smoother or slicker than the surrounding water.

SHEEN

A sheen is a very thin layer of oil (less than 0.0001 inches or 0.003mm) floating on the water surface and is the most common form of oil seen the later stages of a spill. According to their thickness, sheens vary in color ranging from dull brown for the thicker layers to rainbows, grays silvers and almost transparent for the thinnest layers.

SLUDGE TANKS

Every ship of 400 GT or more must be provided with a tank or tanks of adequate capacity, in regard to type of machinery and length of voyage, to receive the oil residues (sludge) which cannot be dealt with otherwise in accordance with MARPOL Annex I.

SMS

Safety Management System (sometimes referred to as an SQM).

SOLAS

Safety of Life at Sea. The international convention for the Safety of Life at Sea.

SOPEP

Shipboard Oil Pollution Emergency Plan.

STCW

The international convention on Standards of Training, Certification and Watchkeeping. (STCW)

TANKER

Is a cargo ship constructed or adapted for the carriage in bulk of liquid cargoes of an inflammable nature.

TARBALLS

Weathered oil that has formed pliable balls or patches that float on the water. Tarballs may vary in size from millimeters to on foot across. Depending on exactly how weathered or hardened, the outer layer of the tarball is, sheen may or may not be present.

TRANSFER

Any movement of oil or hazardous material to, from or within a vessel by means of pumping, gravitation, or displacement.

DRAFT

**Single EPA ID Number for Cruise Ships
State Required Annual Reporting Components**

EPA and the Florida Department of Environmental Protection have developed a guidance for assigning identification numbers (ID #) to individual cruise ships. Florida in conjunction with other States developed procedures for annual reporting to meet State requirements.

Single ID number per cruise ship:

We are proposing that individual cruise ships be assigned EPA ID #s as generators of hazardous waste for purposes of RCRA. The procedures being proposed are detailed below.

A cruise ship would determine its American-based home port State (the State in which it has its main port of call). After determining the home port State, the cruise line would notify that State or EPA Regional office of its hazardous waste activities and the generator size of each cruise ship based on the quantity of hazardous waste generated per ship in accordance with 40 CFR 261.5(c). The home port State or EPA Regional office will issue an EPA identification number for each individual cruise ship using the current established procedure. The number will reflect the home port State initials and ten alpha numeric characters. We are recommending that the State consider a ship's International Maritime Organization number (ship registry number). This is generally a five to seven digit number. Zeros can be added before or after the number to reach the required ten spaces. (RCRAInfo will reject duplicate numbers; therefore, placing the zeros after the IMO number would be a better practice.) Using the IMO number will allow for coordination with the Coast Guard, as this is the number they use most often.

To identify the ID as a cruise ship, enter the SIC code 4481 "deep sea passenger transportation, except by ferry". In 2002 with the next release of RCRAInfo, NAICS codes will replace SIC codes. The corresponding NAICS code which will then apply is 483112 "deep sea passenger transportation". Anyone wishing to generate a report on cruise ships can structure the query referencing the SIC or NAICS code to retrieve the ID's for cruise ships.

After the identification number is assigned, it will remain with that ship and be used on all hazardous waste manifests regardless of where the waste is offloaded in the U.S. The assignment of the ID number will not impact the applicability of State-specific RCRA requirements. For example, when waste is offloaded in a State, the cruise ship will comply with that particular State's RCRA requirements whether or not that State assigned its ID number. The ship will be required to provide records to the individual State as required by State law.

Submission of State Annual Reports for Inclusion Into the EPA Biennial Report System:

Cruise ships, as generators, are under the same national and State-specific reporting requirements as all generators. Depending on a cruise ship's "home port State", reporting requirements will vary and any required reports are due to the responsible government agency.

Currently the States send reports to EPA to be input into the Biennial Reporting System (BRS) on a biennial basis. However, many States require annual reporting from generators and treatment, storage, and disposal facilities rather than biennial reports. Therefore, for any generator, such as the cruise ship, the annual report required by the State could be modeled from the existing PC-based national electronic submittal/reporting system for BRS. An example of this database is available at:

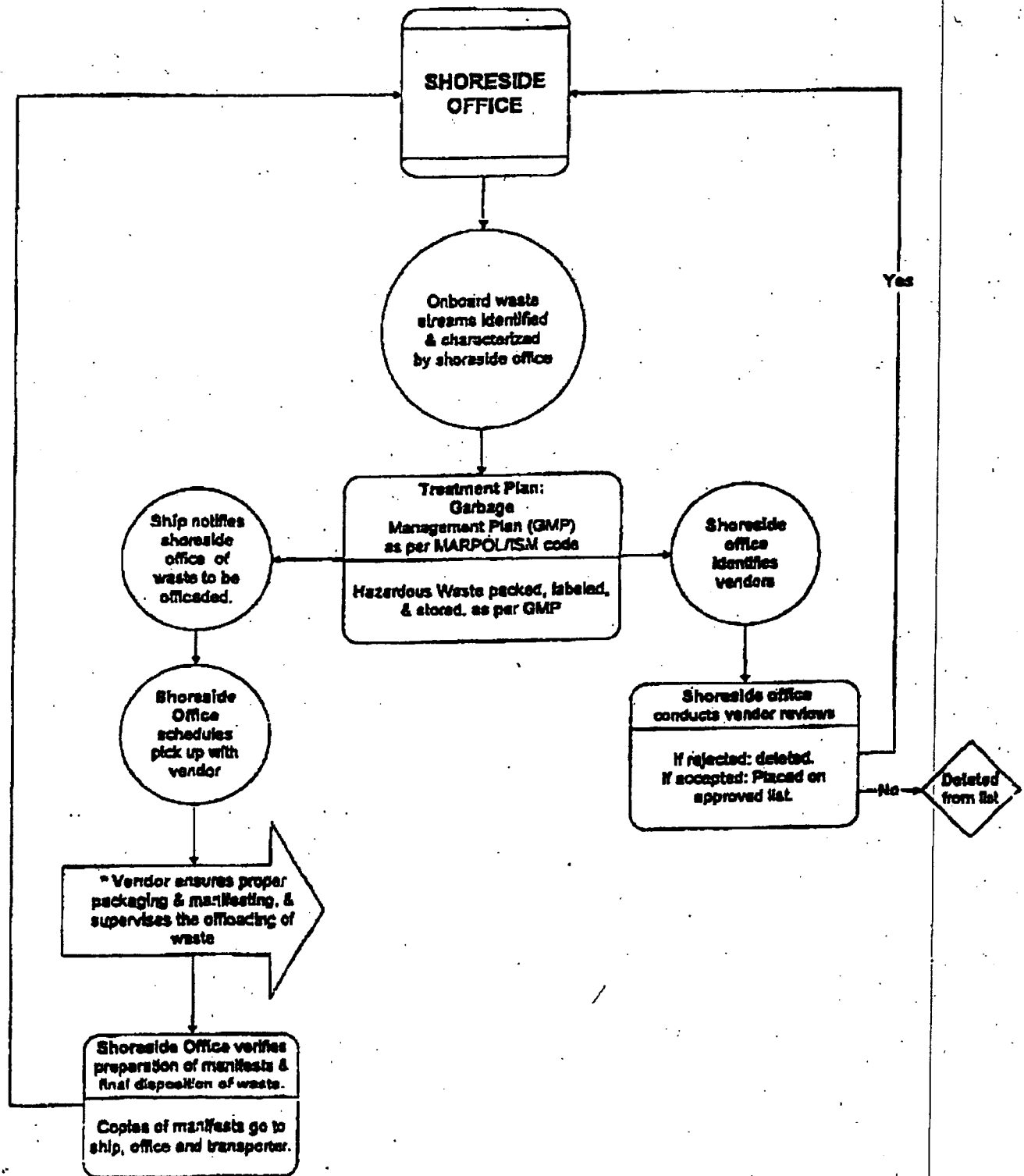
<http://www.epa.gov/epaoswer/hazwaste/data/brs01/forms.htm> and a working model of the BRS type software is available from the State of Florida Department of Environmental Protection at:

http://www.dep.state.fl.us/waste/categories/hazardous/pages/BRS_data.htm

Manifest data may be input and submitted via BRS data files (flat files), then uploaded to the national RCRAInfo BRS portion of the database. Reports could be generated by the cruise ship company using the BRS-type software, while the States and EPA could generate reports directly from RCRAInfo. The BRS software is capable of reporting waste by individual state, all wastes offloaded by the entire cruise line fleet, by each vessel, and at each State port facility. This software can be provided to the cruise lines and the cruise lines can then submit information in flat file format electronically to the home port state or any requesting state. Reports may be submitted electronically or hard copy as required by state law. Canada or other

foreign countries with manifest requirements could potentially be aggregated in the same program for reporting purposes.

States wishing to record waste activity outside the federally mandated biennial report cycle may use the national RCRAInfo database to house that information (i.e., the annual report) as long as the data created meets the required file specifications. This information will only be available if it is provided by the States to EPA. Once in the database, any State will have read access to the information. Confidential business information will not be entered into the database.



NOTE: If the contents of a waste container are unknown, the label will state "unknown." The ship will have the vendor sample and characterize the waste. Once the waste is properly characterized it will be labeled and offloaded under the supervision of the vendor.

* For the United States, the assigning of an EPA Identification Number is as per existing practice.



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Carnival Cruise Lines

Celebrity Cruises

Costa Cruise Lines N.V.

Cunard Line Limited

Disney Cruise Line

Holland America Line

Norwegian Cruise Line

Princess Cruises

Regal Cruises

Royal Caribbean International

Seabourn Cruise Line

Sun Cruises

Topaz International Cruises

FCCA Member Lines

*Carnival Cruise Lines • Celebrity Cruises • Costa Cruise Lines • Cunard Line Ltd. • Disney Cruise Line
Holland America Line • Norwegian Cruise Line • Princess Cruises • Regal Cruises • Royal Caribbean International
Seabourn Cruise Line • Sun Cruises • Topaz International Cruises*



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FCCA Member Lines

*Carnival Cruise Lines • Celebrity Cruises • Costa Cruise Lines • Cunard Line Ltd. • Disney Cruise Line
Holland America Line • Norwegian Cruise Line • Princess Cruises • Regal Cruises • Royal Caribbean International
Seabourn Cruise Line • Sun Cruises • Topaz International Cruises*

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FCCA Member Lines

*Carnival Cruise Lines • Celebrity Cruises • Costa Cruise Lines • Cunard Line Ltd. • Disney Cruise Line
Holland America Line • Norwegian Cruise Line • Princess Cruises • Regal Cruises • Royal Caribbean International
Seabourn Cruise Line • Sun Cruises • Topaz International Cruises*

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FCCA Member Lines

*Carnival Cruise Lines • Celebrity Cruises • Costa Cruise Lines • Cunard Line Ltd. • Disney Cruise Line
Holland America Line • Norwegian Cruise Line • Princess Cruises • Regal Cruises • Royal Caribbean International
Seabourn Cruise Line • Sun Cruises • Topaz International Cruises*

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FCCA 12/05/01

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INTERNATIONAL COUNCIL
OF CRUISE LINES

Carnival Cruise Lines

Celebrity Cruises

Costa Cruise Lines N.V.

Crystal Cruises

Cunard Line Limited

Disney Cruise Line

Holland America Line

Norwegian Cruise Line

Orient Lines

Princess Cruises

Radisson Seven Seas Cruises

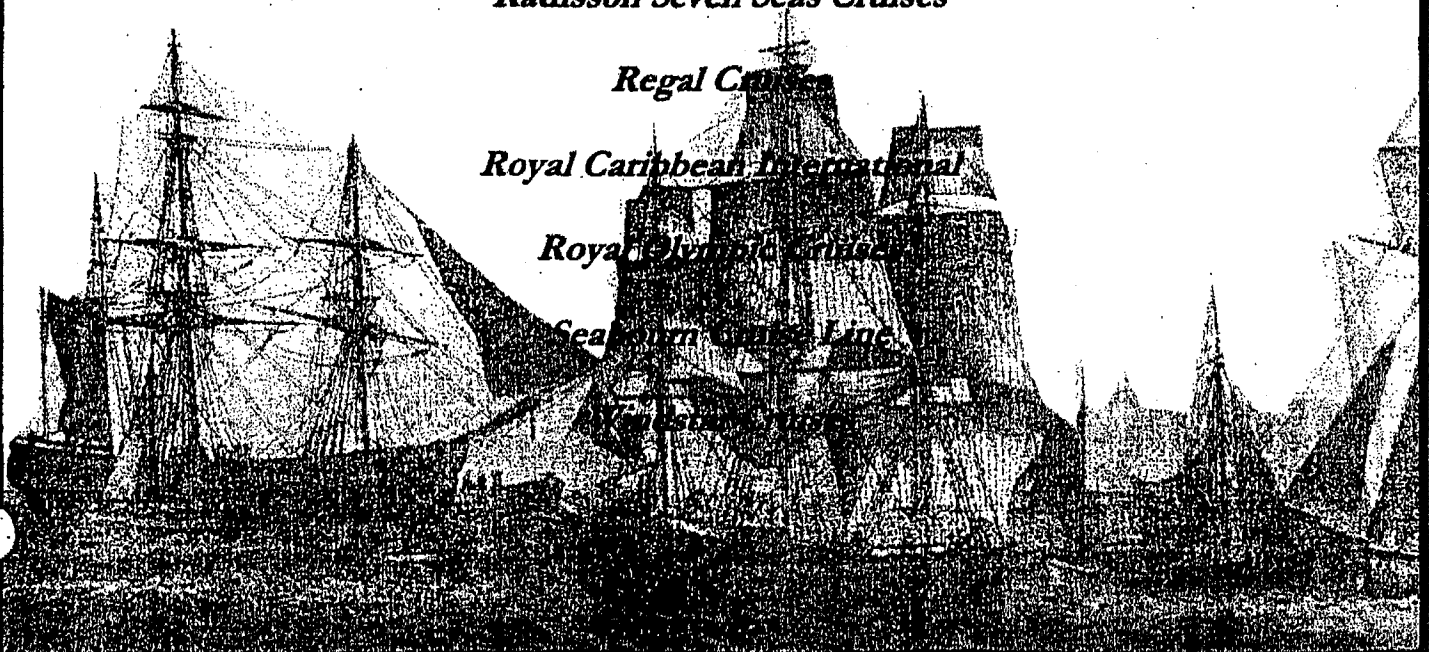
Regal Cruises

Royal Caribbean International

Royal Olympic Cruises

Seabourn Cruise Line

Wendell Cruise Lines



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FDEP, FCCA and ICCL Memorandum of Understanding 12/06/01
Future Environmental Goals

1. FDEP recognizes that many FCCA/ICCL member cruise lines have adopted an environmental policy relating to "hull cleaning" whereby member cruise lines have agreed not to perform hull cleaning on cruise vessels in Florida waters when such cleaning operation would cause a discoloration of water or increase levels of copper, tin or chlorates in Florida waters. The FDEP and ICCL/FCCA agree to address this issue as a future environmental goal.
2. FDEP and FCCA/ICCL member cruise lines recognize the importance of instituting a process of continued training of cruise industry, FDEP, and USCG employees in the implementation of existing law, including inspection and compliance requirements, and the provisions of this MOU. FDEP, FCCA and ICCL agree to coordinate training activities and include all parties in scheduled training sessions.
3. FDEP, FCCA and ICCL agree to hold a meeting during calendar year 2002, and on an annual basis thereafter, for the purpose of consideration of policy and other changes to this MOU and to work cooperatively on waste minimization and pollution prevention technology and training initiatives. The USCG and other appropriate entities will be invited to participate.

Attachment 10

Marine Oil Transfer Report

Attachment 10



State of California, Department of Fish and Game
OFFICE OF OIL SPILL PREVENTION AND RESPONSE (OSPR)
 P.O. Box 949209, Sacramento, CA 94244-2090
MARINE OIL TRANSFER REPORT DF&G-OSPR-1948 & 1949 REV 10/97

DATE

TIME

LOCATION	OPS	OIL TYPE	BARRELS	OIL TYPE	BARRELS
REC. VESSEL	FLAG	OWNER / OPERATOR		COFR #	OFFICIAL #
DISCHG. VESSEL	FLAG	OWNER / OPERATOR		COFR #	OFFICIAL #

COMPLIANCE: Y = YES, N = NO, C = CORRECTED ON SPOT, (*) = refer to ADDITIONAL COMMENTS/NARRATIVE page			RECEIVING VESSEL			DISCHARGING VESSEL		
TITLE 14	33 CFR	REQUIREMENT	Y	N	C	Y	N	C
844.2(c)(1)[BU&MTU] 844.7(c)(1)[Lighter]		Notification was made 4 to 24 hours prior to transfer operation						
843.1 (b)(2)	156.150 (a)	Each PIC filled out and signed DOI.						
816.04 (a)(2)(b)		State contingency plan available.						
843.1 (a)	155.700	Separate PIC designated for transferring vessel and for receiving vessel.						
843.1 (b)(1)	155.710	PIC meets requirements as PIC.						
843.1 (b)(2)	155.820	Written record with name of each person designated as PIC available.						
843.5	155.770	Oil was not intentionally drained into bilges.						
843.6(a)	155.780(a)	Has an operable means for emergency shutdown.						
843.7(a)(b)(c)	155.785(a)(b)(c)	(a) Continuous two-way voice communication between PIC's of both vessels.						
		(b) Two-way voice communication system, usable and effective in all phases of the transfer and weather conditions. Back up/redundant system in place.						
		(c) Two-way communication system intrinsically safe.						
843.8 (a)	156.120 (a)	Vessel moorings						
843.8 (b)	156.120 (b)	Oil transfer hose/s length.						
843.8 (c)	156.120 (c)	Oil transfer hose/s support.						
843.8 (d)	156.120 (d)	Oil transfer system alignment.						
843.8 (e)	156.120 (e)	Each part of the oil transfer system not necessary for the transfer operation is securely capped, flanged, blanked or shut off.						
843.8 (f)	156.120 (f)	End of each hose not connected for transfer is plugged, capped, flanged or blanked off.						
843.8 (g)	156.120 (g)	Transfer system is attached to a fixed connection. (Exception: automatic back pressure nozzle)						
843.8 (h)	156.120 (h)	Each overboard discharge or sea suction valve is sealed or lashed in the closed position.						
843.8 (i)	156.120 (i)	Oil transfer hose condition.						
843.8 (j)	156.120 (m)	Discharge containment equipment on deck or on dock.						
	156.120 (n)	Discharge containment drained.						
843.8 (k)	156.120 (o)	Each drain and scuppers closed by mechanical means.						
843.8 (l)	156.120 (p)	All connections in the oil transfer system are leak free.						
		Pump packing gland leak does not exceed discharge containment capacity.						
843.8 (m)	156.120 (q)	Communications operable during transfer operation.						
843.8 (n)	156.120 (r)	Emergency shutdown in place and operable.						
843.8 (o)	156.120 (s)	PIC on both discharging and receiving vessel						
843.8 (p)(1) (2) (3)	156.120 (t)(1) (2) (3)	Each PIC: (1) at site or available.						
		(2) Possession of oil transfer procedures.						
		(3) Conducts transfer in accordance with the procedures.						
843.8 (q) (1) (2)	156.120 (u) (1) (2)	Personnel required: (1) On duty						
		(2) Conducts transfer in accordance with the procedures.						
843.8 (r)	156.120 (v)	Each PIC understands and speaks English language. No language barrier.						
843.8 (s) (1-12)	156.120 (w)(1-12)	Pre-transfer conference.						
		(1) The identity and quantity of product to be transferred.						
		(2) The sequence of the transfer operation.						

COMPLIANCE: Y = YES, N = NO, C = CORRECTED ON SPOT			RECEIVING VESSEL			DISCHARGING VESSEL		
TITLE 14	33 CFR	REQUIREMENT	Y	N	C	Y	N	C
843.4(b)	155.750 (a)(2)	A description of each transfer system of vessel including						
843.4(b)(1)	155.750 (a)(2)(i)	A line diagram of the vessels transfer piping including the location of each valve, pump, control device, vent and overflow						
843.4(b)(2)	155.750 (a)(2)(ii)	The location of the shutoff valve or other isolation device that separates any bilge or ballast system from the transfer system; and						
843.4(b)(3)	155.750 (a)(2)(iii)	A description of and procedure for emptying the discharge containment system required by 33 CFR 155.310 and 155.320						
843.4(c)	155.750 (a)(3)	The number of persons required to be on duty during oil transfer operations						
843.4(d)	155.750 (a)(4)	The duties by title of each officer, person in charge, tanker person, deck hand and any other person required for each oil transfer operation;						
843.4(e)	155.750 (a)(5)	Procedures and duty assignments for tending the vessels moorings during the transfer of oil;						
843.4(f)	155.750 (a)(6)	Procedures for operating the emergency shutdown and communications.						
843.4(g)	155.750 (a)(7)	Procedures for topping off tanks.						
843.4(h)	155.750 (a)(8)	Procedures for ensuring all valves used during transfer are closed upon completion of oil transfer operation.						
843.4(i)	155.750 (a)(9)	Procedures for reporting oil discharges into the water.						
843.4(j)	155.815 (a)(1 thru 5)	Procedures for closing and opening vessels openings. (Tank vessels only)						
		(1) Expansion trunk hatches.						
		(2) Ullage openings.						
		(3) Sounding ports.						
		(4) Tank cleaning openings.						
		(5) Any other openings that maintain seaworthy conditions and prevent release of oil or hazardous material in the event of a tank vessel accident.						

NOTE: ANY BOX CHECKED AS "NO" IS A VIOLATION OF STATE AND/OR FEDERAL REGULATIONS.
 SEE ATTACHED ADDITIONAL COMMENTS/NARRATIVE PAGE/S IF APPLICABLE
 NOTE: Signing below acknowledges receipt of this Marine Oil Transfer Report only.

SIGNATURES:

 OSPR Representative PIC: Loading PIC: Off-Loading

PRINT NAME:

 OSPR Representative PIC: Loading PIC: Off-Loading

COMMENTS/NARRATIVE

COMPLIANCE: Y = YES, N = NO, C = CORRECTED ON SPOT, (*) = refer to ADDITIONAL COMMENTS/NARRATIVE page			RECEIVING VESSEL			DISCHARGING VESSEL				
TITLE 14	33 CFR	REQUIREMENT	Y	N	C	Y	N	C		
843.8 (s) (1-12) (cont'd)	156.120 (w)(1-12) (cont'd)	(3) The transfer rate.								
		(4) The name or title and location of each person participating in the transfer.								
		(5) The details of the transfer/receiving systems and particulars of the transfer.								
		(6) The critical stages of the transfer operation.								
		(7) All Federal, State and local rules that apply to the transfer.								
		(8) The emergency procedures.								
		(9) The discharge containment procedures.								
		(10) The discharge reporting procedures.								
		(11) The watch or shift arrangements.								
		(12) The transfer shutdown procedures.								
		843.8 (t)	156.120 (x)	PIC's agreed to begin transfer operation.						
		843.8 (u)	155.790 (a)(1)(2)	Deck lighting between sunset and sunrise.						
844(b)(1-7)[BU&MTU] 844.5(b)(1-7)[Lighter]		If a bunker operation, did transfer vessel have resources to contain & remove an on-deck oil spill for at least 7 barrels (MTU 2 barrels).								
		If a lighter operation, did vessels less than 400' have resources to contain and remove an on deck spill for at least 7 barrels. (Vessels over 400" 12 barrels)								
		(1) Sorbents;								
		(2) Non-sparking hand scoops, shovels and buckets;								
		(3) Containers suitable for holding recovered waste;								
		(4) Emulsifiers for deck cleaning;								
		(5) Appropriate protective clothing;								
		(6) Non-sparking portable pumps, and hoses;								
844(c)[BU&MTU]		If a bunker operation, transfer vessel or MTU carried at point of transfer resources to contain and remove persistent oil spills in the water.								
844.5(c)[Lighter]		If a lighter operation, service vessels carried or supplied at point of transfer resources to contain and remove persistent oil spills in the water.								
844(d)[BU&MTU]		If a bunker operation, transfer vessel or MTU identified resources and procedures to contain a 50 barrel spill. These resources were at the point of transfer and ready for immediate deployment in case of an oil spill.								
844.5(d)[Lighter]		If a lighter operation, the owner or operator of the service vessel identified resources and procedures to contain a 50 barrel spill. These resources were at the point of transfer and ready for immediate deployment in case of an oil spill.								
844.4(a)(2)[Lighter]	151.33	If a lighter operation, both vessels have the certificates required by USCG								
844.4(a)(3)[Lighter]	151.19/151.21	If a lighter operation, vessel to be lightered has an IOPP certificate or equivalent								
845.1		Compliance with Federal, State and local regulations.								
845.2(b)(1,2&4)		(1) Vessel operator provided access to records								
		(2) Vessel operator provided access to vessel.								
		(4) If access was denied was transfer operations terminated.								

CONTENTS OF TRANSFER PROCEDURES

COMPLIANCE: Y = YES, N = NO, C = CORRECTED ON SPOT			RECEIVING VESSEL			DISCHARGING VESSEL		
TITLE 14	33 CFR	REQUIREMENT	Y	N	C	Y	N	C
843.2	155.730	Oil transfer procedures current & personnel using procedures.						
843.3 (a)(b)(c)	55.740 (a)(b)(c)	Oil transfer procedures are: (a) Available for inspection.						
		(b) Printed in English and language of crew.						
		(c) Permanently posted or available & easily seen for crew.						
843.4	155.750 (a)	Oil transfer procedures must contain in the order listed or by use of a cross-referenced index page all of the following:						
843.4(a)	155.750 (a)(1)	List of each product transferred to or from the vessel, including the following info:						
	155.750 (a)(1)(i)	Generic chemical name						
	155.750 (a)(1)(ii)	Cargo information as described by 33 CFR 154.310(a)(5)(ii)						
	155.750 (a)(1)(iii)	Applicability of transfer procedures						

Attachment 11

Vessel Waste Streams Matrix

Attachment 12

Quarterly Cruise Ship Wastewater Discharge 2001-2002

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2001				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Carnival						No Discharge(s) For Date Reported
M/S Ecstasy	San Pedro		Twice A Week	Twice A Week	Twice A Week	On Mondays and Fridays. Replaced the MS Holiday in May 2001
M/S Elation	San Pedro	Once A Week	Once A Week	Once A Week	Once A Week	Holds all wastewater discharges until outside twelve nautical miles from land.
M/S Holiday	San Pedro	Twice a Week* (Mon & Fri)	Twice A Week* (Mon & Fri)			*Discharged grey water in Q1& Q2 (80 tons/visit) into San Pedro Cruise Terminal
Celebrity Cruise (under Royal Caribbean Cruises)						No Discharge(s) For Dates Reported
MV Mercury	San Francisco San Diego San Diego		5/2/01 4/30/01		10/21/01 11/25/01	
GTS Infinity	Los Angeles San Francisco San Francisco San Diego San Diego		4/29/01	9/28/01 9/29/01 9/30/01		
			4/7/01 4/28/01			
Cruise West Spirit of Oceanus		32N 118-43W No Operations In CA Waters	No Operations In CA Waters	No Operations In CA Waters	10/20/01*	*grey water was discharged in Q4 (91 cubic meter)
Crystal Cruises Crystal Symphony			No Operations In CA Waters	No Operations In CA Waters	12/21/01	No Discharge(s) For Dates Reported
	Los Angeles Los Angeles	1/5/01 1/12/01				
Crystal Harmony	Los Angeles San Francisco San Francisco San Francisco San Francisco San Francisco		5/20/01 5/21/01 6/2/01 6/14/01 6/26/01	8/26/01 7/8/01 7/20/01 8/1/01 8/13/01 08/25/01	No Operations In CA Waters	

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line	2001 Reporting Quarters					Comments
	Ship	Port	Q1	Q2	Q3	
Cunard Line Limited/Seabourn Cruise Line						
Queen Elizabeth 2	Los Angeles	1/19/01	No Operations In CA Waters	No Operations In CA Waters	No Operations In CA Waters	No Discharge(s) For Dates Reported
Seabourn Sun	San Diego San Francisco	1/7/01 1/9/01				
Seabourn Legend	San Diego	1/27/01				
	Los Angeles San Diego	1/28/01 1/29/01				
Holland America Line Westours Inc.						
MS Statendam	San Diego	1/2/01	4/7/01	9/29/01	10/14/01	No Discharge(s) For Dates Reported except where indicated by (*)
	San Diego	1/12/01	4/17/01		10/24/01	
	San Diego	1/27/01	4/30/01		11/3/01	
	San Diego	2/6/01			11/18/01	
	San Diego	2/16/01			12/3/01	
	San Diego	3/3/01			12/13/01	
	San Diego	3/13/01			12/23/01	
	San Diego	3/23/01				
MS Ryndam	San Diego		5/3/01		10/1/01	
	San Diego				10/8/01	
	San Diego				10/18/01	
	San Diego				10/28/01	
MS ZaanDam	San Francisco San Diego		5/3/01 4/30/01		10/5/01	
MS Veendam	San Francisco		5/16/01		10/2/01	
MS Volendam	San Diego		5/10/01		10/8/01	
MS Westerdam	San Francisco Los Angeles				10/11/01 10/13/01	
Mitsui O.S.K. Passenger Line		No Operations In CA Waters	No Operations In CA Waters	Report Not Submitted	Report Not Submitted	No Discharge(s) For Dates Reported

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2001				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Norwegian Cruise Lines				No Operations In CA Waters		No Discharge(s) For Dates Reported
Crown Odyssey	Los Angeles	3/27/01				
Norwegian Sky	San Diego San Francisco San Francisco		4/23/01 4/25/01 4/26/01		11/29/01	
Norwegian Wind	San Diego San Francisco		4/22/01 4/24/01			
Norwegian Star	San Diego Los Angeles San Pedro				12/2/01 12/3/01 12/5/01	
NYK Cruises Co., LTD		No Operations In CA Waters	No Operations In CA Waters	No Operations In CA Waters	No Operations In CA Waters	No Discharge(s) For Dates Reported
MS Asuka	San Francisco					
Princess Cruise Lines						No Discharge(s) For Dates Reported
Aurora	San Francisco	1/29/01				
Oriana	San Francisco	3/14/01				
Sea Princess	San Diego San Francisco Los Angeles		4/29/01	9/27/01 9/29/01	Operated in CA Waters	
Dawn Princess	San Francisco		5/10/01	9/21/01		
Sun Princess	San Francisco Los Angeles		5/12/01	9/25/01		
Ocean Princess	Los Angeles San Francisco		5/18/01	9/26/01		
Crown Princess					Operated in CA Waters	
Radisson Seven Seas Cruises		No Operations In CA Waters				No Discharge(s) For Dates Reported
Seven Seas Mariner	San Francisco Los Angeles San Diego		4/24/01	9/16/01 9/17/01	10/12/01 10/13/01 10/14/01	

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2001				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Royal Caribbean Cruises Ltd.						No Discharge(s) For Dates Reported
Vision of the Seas	San Diego	1/6/01	4/21/01		10/7/01	
	San Diego				11/4/01	
	San Diego				11/26/01	
	San Diego				12/2/01	
	San Diego				12/9/01	
	San Diego				12/16/01	
	San Diego				12/23/01	
	San Diego				12/30/01	
Viking Serenade	San Pedro	Fridays	Fridays	Fridays	Fridays	
	San Pedro	Mondays	Mondays	Mondays	Mondays	
	San Pedro	Tuesdays	Tuesdays	Tuesdays	Tuesdays	
	Santa Catalina	Wednesday	Wednesday	Wednesday	Wednesday	
Rhapsody of the Seas	San Pedro	Sundays				
	Los Angeles		4/1/01			
	San Diego		4/1/01		10/14/01	
	San Diego		4/15/01			
	San Diego		4/22/01			
Radiance of the Sea	Los Angeles		4/21/01			
	Los Angeles		4/22/01			
	San Diego		4/24/01			
	San Francisco		4/27/01			
Silver Sea Cruises LTD.						No Discharge(s) For Dates Reported
Silver Whisper	San Francisco	No Operations In CA Waters	No Operations In CA Waters	7/1/01	No Operations In CA Waters	

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2002				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Carnival						No Discharge(s) For Dates Reported
M/S Ecstasy	San Pedro	Twice A Week	Twice A Week	Twice A Week	Twice A Week	
M/S Elation	San Pedro	Once A Week	Once A Week	Once A Week	Once A Week	
M/S Spirit	San Diego San Diego				10/25/02 11/2/02	
Celebrity Cruise (under Royal Caribbean Cruises)						No Discharge(s) For Dates Reported
GTS Infinity	San Diego San Diego San Diego	No Operations In CA Waters	5/10/02	No Operations In CA Waters	10/20/02 11/17/02 12/8/02	
MV Mercury	San Diego San Diego		4/17/02 5/15/02			
MV Summit	San Diego		5/3/02		10/4/02	
Cruise West			No Operations In CA Waters		No Operations In CA Waters	No Operations In CA Waters
Spirit of Oceanus						
Crystal Cruises						No Discharge(s) For Dates Reported except where indicated with (*)
Crystal Symphony	San Diego San Francisco Los Angeles Los Angeles	1/3/02 1/4/02 1/17/02	4/25/02 4/27/02	No Operations In CA Waters	No Operations In CA Waters	
Crystal Harmony	Los Angeles San Francisco San Francisco San Francisco San Francisco San Francisco San Francisco Monterey San Diego	No Operations In CA Waters	No Operations In CA Waters	7/4/02 7/16/02 7/28/02 8/9/02 8/21/02 9/2/02 9/14/02	12/23/02 9/2/02 9/14/02 10/8/02 10/9/02* 10/10/02	
						*discharged 14 miles off shore - reported March 2003

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2002				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Cunard Line Limited/Seabourn Cruise Line			No Operations In CA Waters	No Operations In CA Waters	No Operations In CA Waters	No Discharge(s) While Operating in CA Waters
Queen Elizabeth 2	Los Angeles	Operated In CA				
Seabourn Sun	San Diego	Operated In CA				
Holland America Line Westours Inc.						No Discharge(s) For Dates Reported
MS Statendam	San Diego	1/7/02	4/7/02		10/7/02	
	San Diego	1/17/02	4/17/02		10/21/02	
	San Diego	2/1/02	5/2/02		10/31/02	
	San Diego	2/16/02	5/9/02		11/15/02	
	San Diego	2/26/02			11/25/02	
	San Diego	3/13/02			12/10/02	
	San Diego	3/23/02			12/20/02	
MS Ryndam	San Diego		4/24/02	No Operations In CA Waters	10/9/02	
	San Diego		5/4/02		10/19/02	
	San Diego		5/14/02		10/26/02	
	San Diego				11/16/02	
	San Diego				11/23/02	
	San Diego				11/30/02	
	San Diego				12/7/02	
	San Diego				12/14/02	
	San Diego				12/21/02	
	San Diego				12/29/02	
MS ZaanDam	San Francisco		4/30/02		10/24/02	
	San Diego				10/11/02	
MS Veendam	Los Angeles		5/16/02		11/26/02	
MS Volendam	San Diego		5/1/02			
	Los Angeles					
MS Amsterdam	San Francisco				10/4/02	
	Los Angeles				10/6/02	
Mitsui O.S.K. Passenger Line						Reports Were Not Submitted For Any Quarter of Year 2002
Norwegian Cruise Lines						No Discharge(s) For Dates Reported
Crown Odyssey	Los Angeles	3/15/02		No Operations In CA Waters	12/2/02	
Norwegian Sky	Los Angeles		4/22/02		10/2/02	
	San Diego		4/24-25/02			
	San Francisco					

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2002				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
NYK Cruises Co. LTD		No Operations in CA Waters	No Operations in CA Waters	7/1/02	No Operations in CA Waters	No Discharge(s) For Dates Reported
Princess						No Discharge(s) For Dates Reported and No Discharge(s) While Operating In CA Waters
Aurora	San Francisco	1/25/02				
Oriana	San Francisco	3/14/02				
Sea Princess	San Diego	Operated In CA	Operated In CA	Operated in CA		
Dawn Princess	San Francisco		5/7/02		Operated In CA	
Sun Princess	San Francisco		5/10/02	Operated in CA	Operated In CA	
Ocean Princess	San Francisco		5/4/02	Operated in CA		
Crown Princess	San Diego	Operated In CA	4/9/02			
Star Princess		Operated In CA	Operated In CA	Operated in CA	Operated In CA	
Royal Princess					Operated In CA	
Regal Princess			Operated In CA	Operated in CA		
Radisson Seven Seas Cruises		No Operations in CA Waters	No Operations in CA Waters	No Operations in CA Waters	No Operations in CA Waters	
Royal Caribbean Cruises Ltd.						No Discharge(s) For Dates Reported
Vision of the Seas	San Diego	1/6/02	4/7/02		10/16/02	
	San Diego	2/3/02	4/14/02		10/23/02	
	San Diego	2/10/02	4/21/02		11/6/02	
	San Diego	2/17/02	4/28/02		11/13/02	
	San Diego	03/10/02	5/5/02		11/20/02	
	San Diego	3/17/02	5/12/02			
	San Diego	3/24/02				
	San Diego	3/31/01				
	Los Angeles				October 7,11,14,18,21,25,28 30 November 1,4,8,11,15,18,22, 24	

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2002				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Royal Caribbean Cruises Ltd. (continued)						
Vision of the Seas	Los Angeles				December 1,8,15,22, 29	No Discharge(s) For Dates Reported
	Santa Catalina Island				10/10/02	
	Santa Catalina Island				10/17/02	
	Santa Catalina Island				10/24/02	
	Santa Catalina Island				10/31/02	
	Santa Catalina Island				11/7/02	
	Santa Catalina Island				11/14/02	
	Santa Catalina Island				11/21/02	
Viking Serenade	San Pedro San Pedro San Pedro Santa Catalina Island	Fridays Mondays Tuesdays Wednesday				No Discharge(s) For Dates Reported. The Viking Serenade was sold on Feb. 14, 2002
Grandeur of the Seas	San Diego San Diego San Diego San Diego San Diego San Diego San Diego San Diego San Diego San Diego San Diego San Diego		5/19/02 5/26/02 6/2/02 6/9/02 6/16/02 6/23/02 6/30/02	7/7/02 7/14/02 7/21/02 7/28/02 8/4/02 8/11/02 8/18/02*		No Discharge(s) For Dates Reported * observing "No Discharge within the Sanctuary" Practice
Radiance of the Sea	San Diego		4/19/02		11/10/02	
Legend of the Seas	San Francisco San Diego San Diego			9/22-28/02 9/29/02	10/6/02 10/13/02	

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2002				
Ship	Port	Reporting Quarters				Comments
		Q1	Q2	Q3	Q4	
	San Diego				10/20/02	

* Indicates a discharge(s) occurred for noted reporting dates.

**Regulation of Cruise Ships in California
June 1, 2003**

Quarterly Cruise Ship Wastewater Discharge

Cruise Line		2002				Comments
		Reporting Quarters				
Ship	Port	Q1	Q2	Q3	Q4	
Royal Caribbean Cruises Ltd. (continued)						
Legend of the Seas	San Diego				10/27/02	No Discharge(s) For Dates Reported
	San Diego				11/3/02	
	San Diego				11/10/02	
	San Diego					
	Santa Catalina Island				11/18/02 11/11/02	
Silver Sea Cruises LTD.		No Operations in CA Waters	No Operations in CA Waters	No Operations in CA Waters	No Operations in CA Waters	

* Indicates a discharge(s) occurred for noted reporting dates.

Attachment 13

Crystal Cruises Letter



February 27, 2003

Ms. Nancy Kampus
State Water Resources Control Board
Division of Water Quality
1001 I Street
Sacramento, CA 95814

Dear Ms. Kampus,

This letter is in response to your February 21st e-mail inquiry to Tom Greene of Crystal Cruises, with respect to the October 9, 2002, Monterey Bay call of Crystal Harmony.

I regret to inform you that, despite numerous explicit written and verbal orders to the contrary, discharges of gray water, treated black water, and processed bilge water were released from Crystal Harmony commencing at approximately 19:20 on October 9, 2002 within the boundaries of the Monterey Bay National Marine Sanctuary. While permission was granted by the watch officer to discharge and the event logged at 18:43, the actual discharge commenced at approximately 19:20 at position 36-14.1' N, 122-10.0' W. The ship was on a course of 153 T traveling at approximately 20.5 knots. The ship exited the sanctuary at approximately 20:10. The estimated quantities discharged were 129 cubic meters of gray water, 1 cubic meter of treated black water, and 8 cubic meters of processed bilge water.


Crystal Cruises' policy is to not discharge in any marine sanctuary— worldwide. While this unfortunate incident took place approximately 14 miles offshore, it was not only a variance to the commitment we made to Monterey, but it also violated Crystal Cruises' own corporate environmental policy.

As evidence of this commitment, immediately following Crystal's investigation, we terminated the Chief Officer, who was primarily responsible for the occurrence of this unfortunate incident. In addition, two other senior officers, including the Captain, and a junior officer, were censured and given final warnings.

Crystal takes its obligations to preserving the environment very seriously. We have made it clear and reaffirmed to all personnel that any infractions of this policy, or any other environmental policies, will result in the immediate dismissal of the individuals involved. Additionally, we have reiterated that if laws or regulations are violated in connection with any such incident, the Company will fully cooperate with investigating officials. As no laws or government regulations were violated in the above incident, no reports of the discharges were made to authorities.

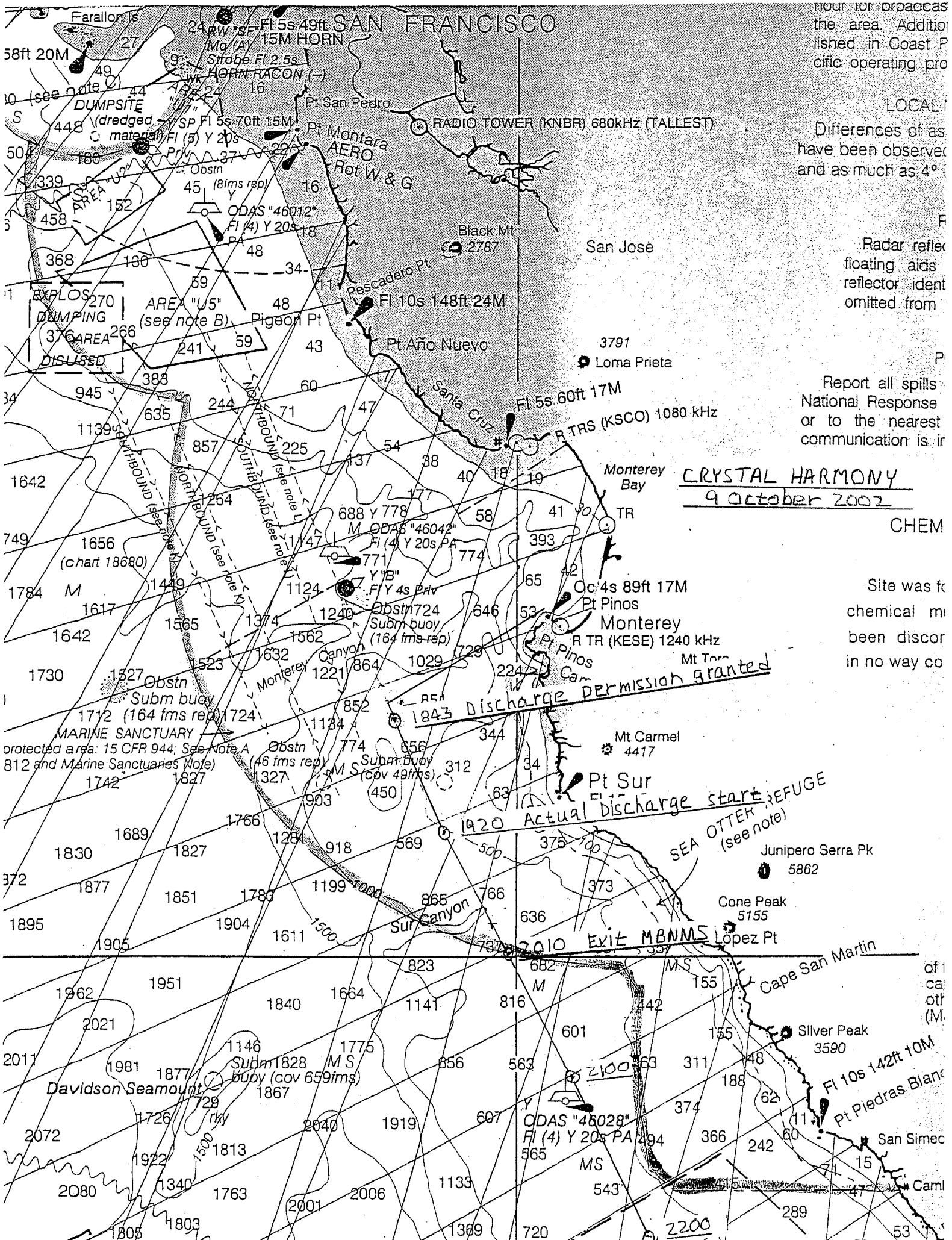
Crystal Cruises sincerely apologizes for the incident and truly regrets that vessel personnel did not comply with the firm instructions given them with respect to the call in Monterey.

Sincerely,


Joseph L. Valenti
Sr. Vice President
Marine Operations

Enclosure

2049 Century Park East, Suite 1400
Los Angeles, California 90067
Tel. 310.785.9300, Fax. 310.785.0011
www.crystalcruises.com



hour for broadcast
the area. Addition
lished in Coast P
cific operating pro

LOCAL I

Differences of as
have been observed
and as much as 4° i

F

Radar reflex
floating aids
reflector ident
omitted from

P

Report all spills
National Response
or to the nearest
communication is ir

CRYSTAL HARMONY
9 October 2002

CHEM

Site was fr
chemical mi
been discor
in no way co

1843 Discharge permission granted

1920 Actual Discharge start REFUGE

2010 Exit MBNMS

protected area: 15 CFR 944; See Note A
812 and Marine Sanctuaries Note)

SEA OTTER
(see note)

of 1
ca:
otr
(M.

Attachment 14

Cruise Ship Miles in California Waters In 2000

Attachment 14

Estimated Cruise Ship Transiting Miles in California Coastal Waters in 2000

Port of Arrival	Previous Port*	Number of Trips**	Estimated Trip Distance in CA waters***	Estimated Total Distance (Incoming)	Estimated Total Distance (In & Out)****
LA/LB	LA/LB	1	0	0	0
LA/LB	Mexico	296	100	29600	59200
LA/LB	Vancouver	4	800	3200	6400
LA/LB	Hawaii	2	100	200	400
LA/LB	San Francisco	1	400	400	800
San Diego	Mexico	34	50	1700	3400
San Diego	Hawaii	8	100	800	1600
San Diego	Vancouver	2	1,000	2000	4000
San Francisco	Mexico	4	550	2200	4400
San Francisco	Vancouver	8	400	3200	6400
San Francisco	Alaska	13	400	5200	10400
San Francisco	San Diego	1	500	500	1000
San Francisco	LA/LB	1	400	400	800
Totals		375		49400	98800

* Mexico = Mexico or South America.

Vancouver = Vancouver, Victoria Island, Portland or Grays Harbor

** Number of Trips = total number of specified trips by all cruise ships coming into port in 2000 per CSLC.

*** Estimated Trip Distance = miles travelled in California Coastal Waters only.

**** Assume ship returns to last port via incoming route.

Attachment 15

Vehicle Emission Observation Form

COMPANY NAME
Princess CL, Dawn Princess

STREET ADDRESS
Pier 35 @ Kearny & Embarcadero

CITY
San Francisco STATE
CA ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
the last of 4 stacks on the port side

HEIGHT ABOVE GROUND LEVEL
~100 feet HEIGHT RELATIVE TO OBSERVER
Start *~100'* End *100'*

DISTANCE FROM OBSERVER
Start *120 yds* End *120 yds* DIRECTION FROM OBSERVER
Start *N* End *N*

DESCRIBE EMISSIONS
Start *lotting* End *lotting*

EMISSION COLOR
Start *grey* End IF WATER DROPLET-PLUME
Attached Detached

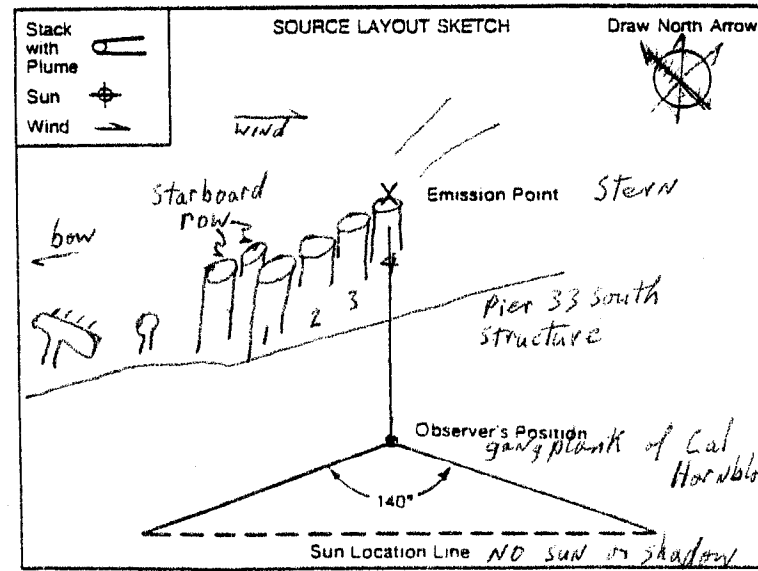
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

DESCRIBE PLUME BACKGROUND
Start *overcast sky* End *overcasty partly cloudy*

BACKGROUND COLOR
Start *white* End *white* SKY CONDITIONS
Start *high overcast* End *break, up*

WIND SPEED
Start *<2mph* End *<2* WIND DIRECTION
Start *W* End *W*

AMBIENT TEMP
Start *60* End *60* WET BULB TEMP RH, percent



ADDITIONAL INFORMATION
only the top of the ship is visible over Pier 33 south / only one of 9 stacks is emitting

OBSERVATION DATE		START TIME		END TIME	COMMENTS
SEC	MIN	0	15	30	
<i>21 Sept 01</i>		<i>1112</i>		<i>1122</i>	
1	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
2	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
3	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
4	<i>1/4</i>	<i>1/4</i>	<i>1/2</i>	<i>1/2</i>	
5	<i>1/2</i>	<i>1/4</i>	<i>1/4</i>	<i>1/2</i>	
6	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
7	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
8	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>	<i>1/2</i>	
9	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>	
10	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
11					
12					
13					<i>Access denied.</i>
14					<i>No unannounced</i>
15					<i>visits will be</i>
16					<i>entertained (as of 11 Sept)</i>
17					
18					<i>left business card</i>
19					<i>w/ security</i>
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)
Terone Preston

OBSERVER'S SIGNATURE
Terone Preston DATE
21 Sept 01

ORGANIZATION
Air Resources, Compliance Div.

CERTIFIED BY
ARB, CD DATE

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME
Princess CL, Dawn Princess

STREET ADDRESS
Pier 35 @ Kearny & Embarcadero

CITY
San Francisco

STATE
CA

ZIP

PHONE (KEY CONTACT)

SOURCE ID NUMBER

PROCESS EQUIPMENT

OPERATING MODE

CONTROL EQUIPMENT

OPERATING MODE

DESCRIBE EMISSION POINT
the last of 4 stacks on the port side

HEIGHT ABOVE GROUND LEVEL
~100 feet

HEIGHT RELATIVE TO OBSERVER
Start *~100'* End *100'*

DISTANCE FROM OBSERVER
Start *120 yds* End *120 yds*

DIRECTION FROM OBSERVER
Start *N* End *N*

DESCRIBE EMISSIONS

Start *lotting* End *lotting*

EMISSION COLOR
Start *grey* End

IF WATER DROPLET/PLUME
Attached Detached

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

DESCRIBE PLUME BACKGROUND

Start *overcast sky* End *overcast*

BACKGROUND COLOR
Start *white* End *white*

SKY CONDITIONS
Start *overcast high* End *overcast breaking up*

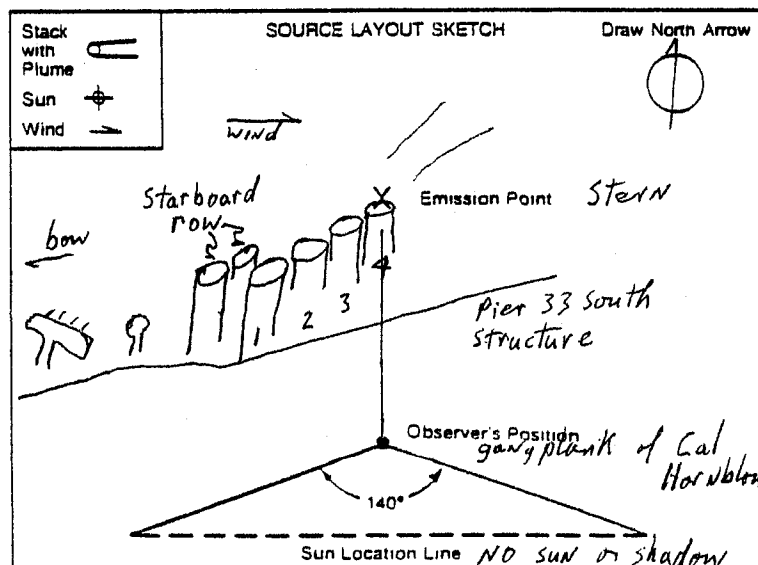
WIND SPEED
Start *<2mph* End *<2*

WIND DIRECTION
Start *W* End *W*

AMBIENT TEMP

WET BULB TEMP

RH, percent



ADDITIONAL INFORMATION
only the top of the ship is visible over Pier 33 south / only one of 4 stacks is emitting

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>21 Sept 01</i>		<i>1112</i>		<i>1122</i>	
SEC	0	15	30	45	MIN
1	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
2	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
3	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
4	<i>1/4</i>	<i>1/4</i>	<i>1/2</i>	<i>1/2</i>	
5	<i>1/2</i>	<i>1/4</i>	<i>1/4</i>	<i>1/2</i>	
6	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
7	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
8	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>	<i>1/2</i>	
9	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>	
10	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
11				<i>10</i>	<i>Random</i>
12				<i>.77</i>	<i>Calabria, Marconi</i>
13					<i>Access denied.</i>
14					<i>No unannounced</i>
15					<i>visits will be</i>
16					<i>entertained (as of 11 Sept)</i>
17					
18					<i>left business card</i>
19					<i>w/ security</i>
20				<i>0</i>	<i>at 11:15</i>
21				<i>.125</i>	<i>3000 ft</i>
22				<i>.05</i>	
23				<i>0</i>	<i>Intensity</i>
24				<i>.5</i>	<i>at 11:15</i>
25				<i>.5</i>	<i>at 11:15</i>
26				<i>.5</i>	<i>at 11:15</i>
27				<i>.04</i>	<i>at 11:15</i>
28				<i>.75</i>	<i>at 11:15</i>
29				<i>.75</i>	<i>at 11:15</i>
30				<i>1.00</i>	<i>at 11:15</i>

OBSERVER'S NAME (PRINT)
Terone Preston

OBSERVER'S SIGNATURE
Terone Preston

DATE
21 Sept 01

ORGANIZATION
Air Resources, Compliance Div.

CERTIFIED BY
ARB, CD

DATE

VI LE EMISSION OBSERVATION FORM

No.

COMPANY NAME
P&O Sea Princess

STREET ADDRESS
Pier 35

CITY
San Francisco STATE
CA ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT
1st starboard stack OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT

HEIGHT ABOVE GROUND LEVEL
150' HEIGHT RELATIVE TO OBSERVER
Start *150'* End

DISTANCE FROM OBSERVER
Start *150 yds* End *150 yds* DIRECTION FROM OBSERVER
Start *NNW* End *NNW*

DESCRIBE EMISSIONS

Start End

EMISSION COLOR
Start *grey* End IF WATER DROPLET PLUME
Attached Detached

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

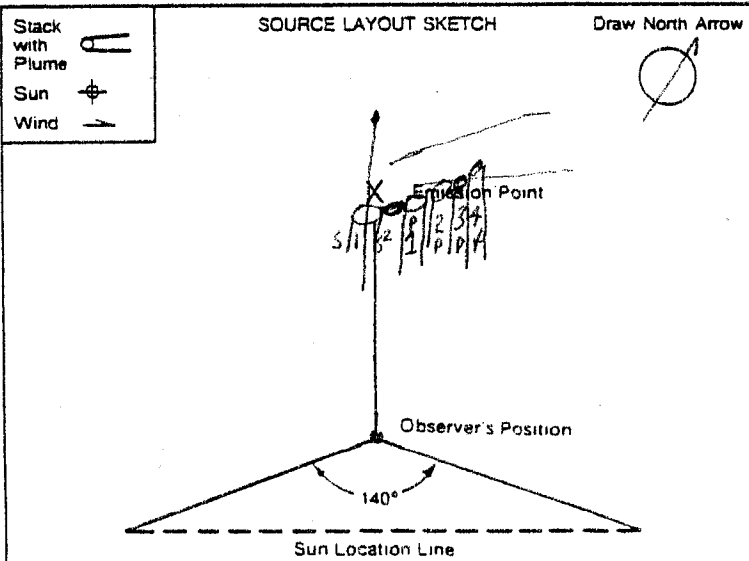
DESCRIBE PLUME BACKGROUND

Start *high clouds* End

BACKGROUND COLOR
Start *white* End *white* SKY CONDITIONS
Start *partly cloudy* End *partly cloudy*

WIND SPEED
Start *2* End WIND DIRECTION
Start *NW* End *WNW*

AMBIENT TEMP
Start *60* End WET BULB TEMP RH, percent



ADDITIONAL INFORMATION
starboard stacks 3 & 4 are smaller than the other 6 stacks

OBSERVATION DATE		START TIME				END TIME
<i>27 Sept 01</i>		<i>1300</i>				<i>1311</i>
SEC	0	15	30	45	COMMENTS	
MIN						
1			<i>1230</i>		<i>SP motors in (25-30%) emitting from stacks</i>	
2						
3					<i>Port 1 & 2 Starboard 2</i>	
4	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>Port stack has stopped</i>	
5	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>	<i>emitting</i>	
6	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>		
7	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>		
8	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>		
9	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>		
10	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>		
11	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>	<i>1/4</i>		
12	<i>1/4</i>	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>		
13	<i>1/4</i>	<i>1/2</i>	<i>1/2</i>	<i>1/4</i>		
14	<i>1/4</i>	<i>1/2</i>	<i>1/4</i>	<i>1/2</i>		
15						
16						
17					<i>1355 only</i>	
18	<i>< 1/4</i>				<i>starboard #2 is emitting 0-1/4</i>	
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

OBSERVER'S NAME (PRINT)
Terode Preston

OBSERVER'S SIGNATURE
Terode Preston DATE
27 Sept 01

ORGANIZATION
CARB Compliance

CERTIFIED BY
CARB DATE

CONTINUED ON VEO FORM NUMBER

VI LE EMISSION OBSERVATION FORM

No.

COMPANY NAME
Celebrity Infinity

STREET ADDRESS
Pier 35

CITY
San Francisco

STATE
CA

PHONE (KEY CONTACT)

SOURCE ID NUMBER

PROCESS EQUIPMENT

OPERATING MODE

CONTROL EQUIPMENT

OPERATING MODE

DESCRIBE EMISSION POINT
*multiple stacks are assembled
amidship*

HEIGHT ABOVE GROUND LEVEL
150'

HEIGHT RELATIVE TO OBSERVER
Start *150'* End

DISTANCE FROM OBSERVER
Start *150 yds* End *150 yds*

DIRECTION FROM OBSERVER
Start *NNW* End *NNW*

DESCRIBE EMISSIONS

Start *NONE* End *No visible emissions*

EMISSION COLOR

Start *N/A* End

IF WATER DROPLET PLUME
Attached Detached

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED

Start *N/A* End *N/A*

DESCRIBE PLUME BACKGROUND

Start *blue sky* End *blue sky*

BACKGROUND COLOR

Start *blue* End *blue*

SKY CONDITIONS

Start *clear* End *clear*

WIND SPEED

Start *calm* End *1 mph*

WIND DIRECTION

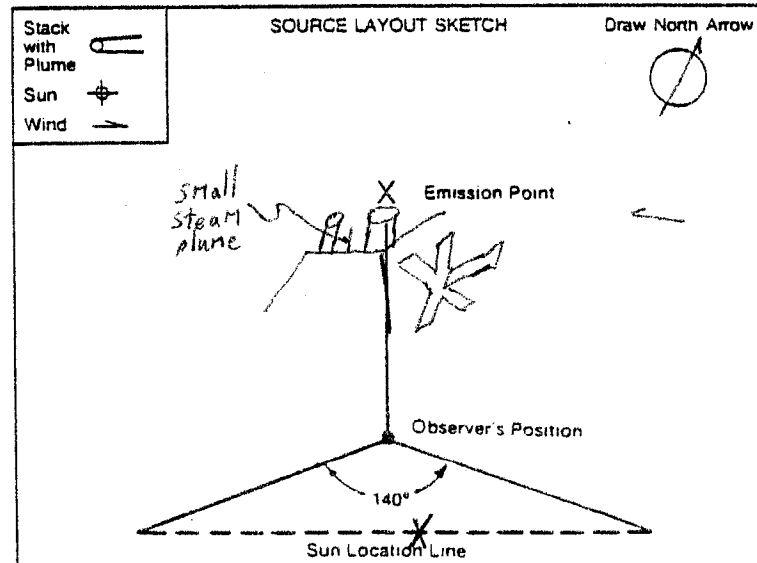
Start *east to* End *variable*

AMBIENT TEMP

Start *68* End *68*

WET BULB TEMP

RH, percent



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME				END TIME
29 Sept 01 Fri		1025				1035
SEC	0	15	30	45	COMMENTS	
MIN						
1	0	0	0	0		
2	0	0	0	0	No visible	
3	0	0	0	0	emissions	
4	0	0	0	0		
5	0	0	0	0		
6	0	0	0	0		
7	0	0	0	0		
8	0	0	0	0		
9	0	0	0	0		
10	0	0	0	0		
11						
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30						

OBSERVER'S NAME (PRINT)
Terone Preston

OBSERVER'S SIGNATURE
Terone Preston

DATE
29 Sept 01

ORGANIZATION
Air Resources, Compliance

CERTIFIED BY
ARB

DATE

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME
Holland America Zaandam

STREET ADDRESS

CITY
San Diego STATE
CA ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
The largest of six stacks visible from ~80 yds starboard

HEIGHT ABOVE GROUND LEVEL
130 feet HEIGHT RELATIVE TO OBSERVER
Start *130* End *130*

DISTANCE FROM OBSERVER DIRECTION FROM OBSERVER

DESCRIBE EMISSIONS

Start *lofting* End *lofting*

EMISSION COLOR IF WATER DROPLET/PLUME
Start *lt gray* End *lt gray* Attached Detached

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *1 stack diam above stack* End *1 diameter above stack*

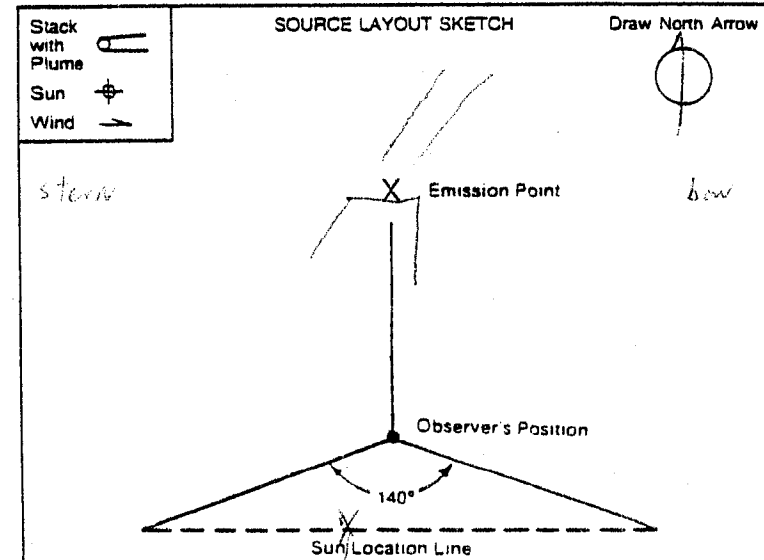
DESCRIBE PLUME BACKGROUND

Start *solid overcast sky* End *solid overcast sky*

BACKGROUND COLOR SKY CONDITIONS
Start *white* End *white* Start End

WIND SPEED WIND DIRECTION
Start *0-2* End *0-2* Start *West* End *West*

AMBIENT TEMP WET BULB TEMP RH, percent
Start *60* End *60*



ADDITIONAL INFORMATION
estimated no sun visible

OBSERVATION DATE		START TIME				END TIME
<i>5 Oct 01</i>		<i>1540</i>				<i>1550</i>
SEC	0	15	30	45	COMMENTS	
MIN						
1	0	0	0	1/2		
2	0	0	0	0	<i>emissions over</i>	
3	1/4	0	0	0	<i>consistent low</i>	
4	0	0	1/4	0	<i>and non-zero</i>	
5	0	0	0	0		
6	0	1/4	0	0		
7	0	0	0	0		
8	0	1/4	0	0		
9	0	0	0	0		
10	1/4	0	0	0		
11						
12						
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29						
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OBSERVER'S NAME (PRINT)
Josane Pieterse

OBSERVER'S SIGNATURE
Josane Pieterse DATE

ORGANIZATION

CERTIFIED BY
ARB DATE
12 Sept 01

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME *Seven Seas Marine*

STREET ADDRESS *Last pier / Next to US Navy pier 11*

CITY *San Diego* STATE *CA* ZIP _____

PHONE (KEY CONTACT) _____ SOURCE ID NUMBER _____

PROCESS EQUIPMENT _____ OPERATING MODE _____

CONTROL EQUIPMENT _____ OPERATING MODE _____

DESCRIBE EMISSION POINT _____

HEIGHT ABOVE GROUND LEVEL *150'* HEIGHT RELATIVE TO OBSERVER
Start *150'* End *150'*

DISTANCE FROM OBSERVER Start *700'* End _____ DIRECTION FROM OBSERVER
Start *NW* End *NW*

DESCRIBE EMISSIONS
Start *letting* End *letting*

EMISSION COLOR Start *gray* End _____ IF WATER DROPLET PLUME
Attached Detached

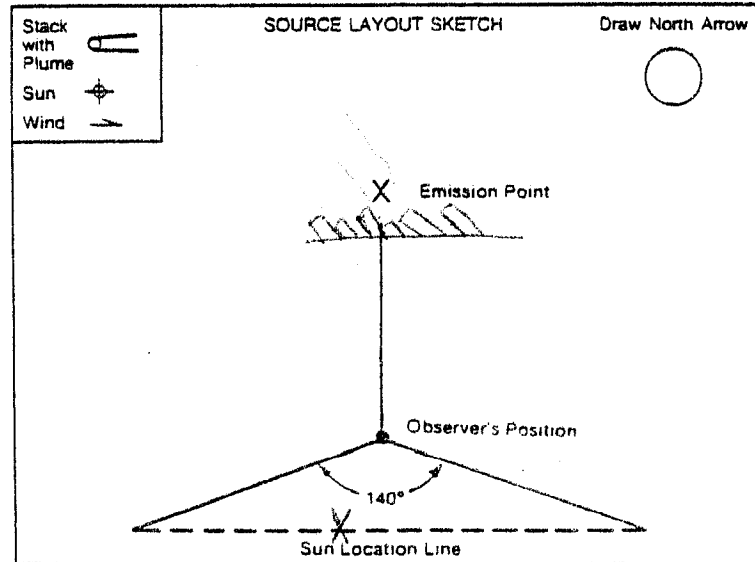
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

DESCRIBE PLUME BACKGROUND
Start *clear sky* End *clear sky*

BACKGROUND COLOR Start *blue* End *blue* SKY CONDITIONS Start *partly cloudy* End *partly cloudy*

WIND SPEED Start *0-2* End *0-2* WIND DIRECTION Start *West* End *west*

AMBIENT TEMP Start *70* End *70* WET BULB TEMP _____ RH, percent _____



ADDITIONAL INFORMATION _____

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>14 Oct 01</i>		<i>10 57</i>		<i>11 06</i>	
SEC	0	15	30	45	
MIN					
1	0	0	1 0	0	
2	0	0	0	0	
3	0	0	0	0	
4	<i>1/4</i>	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	<i>emissions continue</i>
11					<i>at less than 1/4 Rmpd</i>
12					
13					
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30					

OBSERVER'S NAME (PRINT) *Tecova Prater*

OBSERVER'S SIGNATURE *Tecova Prater* DATE *14 Oct 01*

ORGANIZATION *ARB*

CERTIFIED BY *ARB* DATE _____

CONTINUED ON VEO FORM NUMBER _____

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME *Rhapsody of the Seas*

STREET ADDRESS *Harbor Blvd btwn Seawall & Marina & State St*

CITY *San Diego* STATE *CA* ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT

HEIGHT ABOVE GROUND LEVEL *150'* HEIGHT RELATIVE TO OBSERVER Start *150'* End *150'*

DISTANCE FROM OBSERVER Start *600'* End *600'* DIRECTION FROM OBSERVER Start *NW* End *NW*

DESCRIBE EMISSIONS

Start *lofting* End *lofting*

EMISSION COLOR Start *grey* End *grey* IF WATER DROPLET PLUME Attached Detached

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED Start *just above stack* End *just above stack*

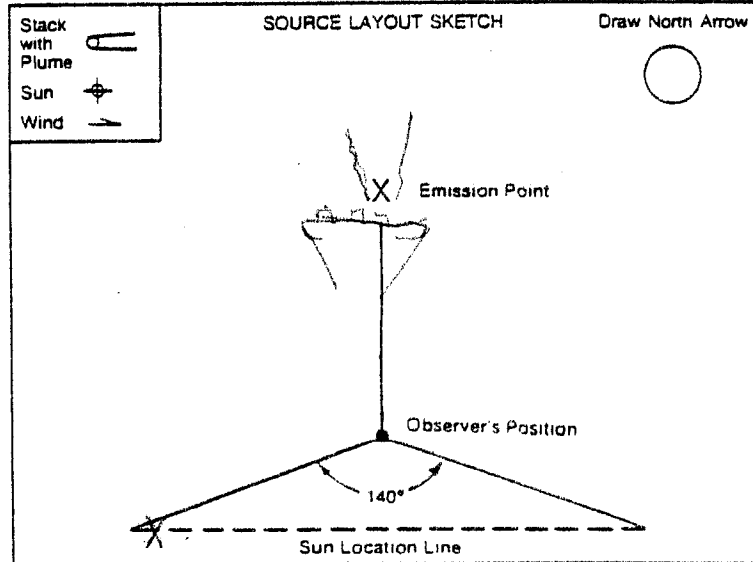
DESCRIBE PLUME BACKGROUND

Start *blue sky* End *blue sky*

BACKGROUND COLOR Start *blue* End *blue* SKY CONDITIONS Start *clear* End *clear*

WIND SPEED Start *0-2* End *0-2* WIND DIRECTION Start *variable* End *variable*

AMBIENT TEMP Start *80* End *80* WET BULB TEMP RH, percent



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME		END TIME	COMMENTS
14 Oct		1354		1402	
SEC	0	15	30	45	
MIN					
1	1/4	1/4	1/4	1/4	
2	0	0	1/4	1/4	
3	1/4	0	1/4	1/4	
4	1/4	1/4	0	1/4	full stop of lowered
5	0	1/2	1/4	1/4	motion
6	1/2	1/2	1/2	1/2	two stacks emitting
7	3/4	1/2	3/4	1/2	
8	1/2	1/4	1/2	1/2	
9					
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30					

OBSERVER'S NAME (PRINT) *Terone Preston*

OBSERVER'S SIGNATURE *Terone Preston* DATE *14 Oct 01*

ORGANIZATION *ARB, Compliance*

CERTIFIED BY *ARB* DATE *12 Sept 01*

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME *Holland Amer. Ryndam*

STREET ADDRESS *Cruise Ship Dock*

CITY *San Diego* STATE *CA* ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
a clump of eight or more stacks

HEIGHT ABOVE GROUND LEVEL *150'* HEIGHT RELATIVE TO OBSERVER
Start *150'* End *150'*

DISTANCE FROM OBSERVER Start *400'* End *400'* DIRECTION FROM OBSERVER
Start *WNW* End *WNW*

DESCRIBE EMISSIONS
Start *lofting* End *lofting*

EMISSION COLOR Start *grey* End *grey* IF WATER DROPLET-PLUME
Attached Detached

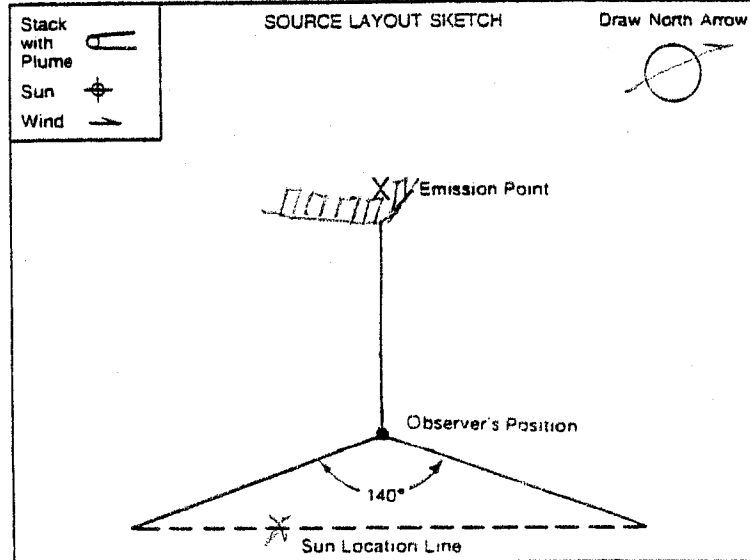
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

DESCRIBE PLUME BACKGROUND
Start *whisp of cloud* End *blue sky*

BACKGROUND COLOR Start *light blue* End *blue* SKY CONDITIONS
Start *high thin clouds* End *high thin clouds*

WIND SPEED Start *0-2* End *0-2* WIND DIRECTION Start *N* End *N*
variable

AMBIENT TEMP Start *70°F* End *70* WET BULB TEMP RH, percent



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>18 Oct 01</i>		<i>1145</i>		<i>1154</i>	
SEC	0	15	30	45	
MIN					
1	<i>1/4</i>	<i>0</i>	<i>1/4</i>	<i>0</i>	
2	<i>1/4</i>	<i>0</i>	<i>0</i>	<i>0</i>	
3	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
4	<i>0</i>	<i>0</i>	<i>1/4</i>	<i>0</i>	
5	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
6	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
7	<i>0</i>	<i>0</i>	<i>1/4</i>	<i>0</i>	
8	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
9	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
10	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
11					
12					
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30					

OBSERVER'S NAME (PRINT) *Jerome Preston*

OBSERVER'S SIGNATURE *Jerome Preston* DATE *18 Oct 01*

ORGANIZATION

CERTIFIED BY DATE

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME
Carnival Ecstasy

STREET ADDRESS
San Pedro Cruise Ship dock berth 93A

CITY
San Pedro STATE
CA ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
the third of 4 stacks on the starboard fluke of the whale tail

HEIGHT ABOVE GROUND LEVEL
150' HEIGHT RELATIVE TO OBSERVER
Start *100'* End *100'*

DISTANCE FROM OBSERVER
Start *400'* End DIRECTION FROM OBSERVER
Start End

DESCRIBE EMISSIONS
Start *drifting* End *lofting*

EMISSION COLOR IF WATER DROPLET PLUME
Start *grey* End *grey* Attached Detached

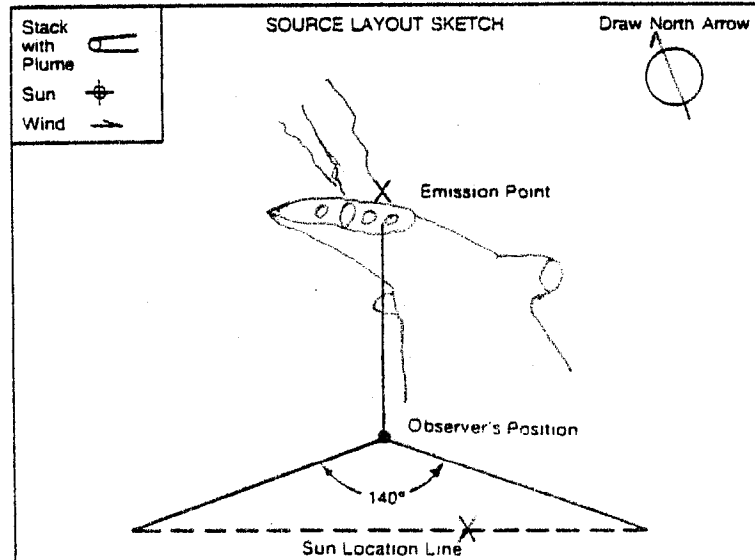
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above whale tail* End *just above whale tail*

DESCRIBE PLUME BACKGROUND
Start *thin overcast* End *thin overcast*

BACKGROUND COLOR SKY CONDITIONS
Start *bluish white* End *high overcast* End *overcast*

WIND SPEED WIND DIRECTION
Start End Start End

AMBIENT TEMP WET BULB TEMP RH, percent
Start *68* End



ADDITIONAL INFORMATION
North establish by talking to surveyor on-site

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>19 Oct 01</i>		<i>0945</i>		<i>0955</i>	
SEC	0	15	30	45	
MIN					
1	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
2	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
3	<i>3/4</i>	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	
4	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	<i>1/2</i>	
5	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>Volume of emissions</i>
6	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>appears reduced</i>
7	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
8	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
9	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
10	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
11					
12					
13					
14					
15					
16					<i>There are two ramps from the parking lot. I stood 50' south of the southern ramp</i>
17					
18					
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28					
29					
30					

OBSERVER'S NAME (PRINT)
Terone Preston

OBSERVER'S SIGNATURE
Terone Preston DATE
19 Oct 01

ORGANIZATION
ARB

CERTIFIED BY
ARB DATE

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME *Viking Seacade*

STREET ADDRESS *Berth 92*

CITY *Sun Pedro* STATE *CA* ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
one of a cluster of stacks

HEIGHT ABOVE GROUND LEVEL *150'* HEIGHT RELATIVE TO OBSERVER
Start *150'* End *150'*

DISTANCE FROM OBSERVER Start *400 yds* End *400 yds* DIRECTION FROM OBSERVER
Start *east* End *east*

DESCRIBE EMISSIONS
Start *lotting* End *lotting*

EMISSION COLOR Start *grey* End *grey* IF WATER DROPLET PLUME
Attached Detached

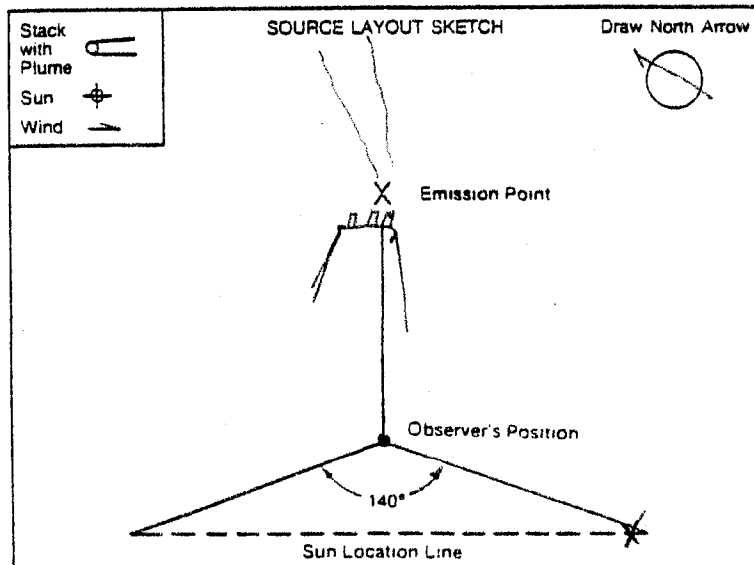
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

DESCRIBE PLUME BACKGROUND
Start *high overcast* End *high overcast*

BACKGROUND COLOR *bluish white* SKY CONDITIONS Start *high overcast* End

WIND SPEED Start *calm* End *calm* WIND DIRECTION Start *N/A* End *N/A*

AMBIENT TEMP Start End WET BULB TEMP *N/A* RH, percent



ADDITIONAL INFORMATION
observed from an open lot east of the Maritime Museum on Harbor Dr.

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>19 Oct 01</i>		<i>1019</i>		<i>1028</i>	
SEC	0	15	30	45	
MIN					
1	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	
2	<i>1</i>	<i>1</i>	<i>1</i>	<i>1</i>	
3	<i>1</i>	<i>1</i>	<i>3/4</i>	<i>3/4</i>	
4	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
5	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
6	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
7	<i>1</i>	<i>1</i>	<i>3/4</i>	<i>1</i>	
8	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
9	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
10	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
11					
12					
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30					

OBSERVER'S NAME (PRINT) *Terone Preston*

OBSERVER'S SIGNATURE *Terone Preston* DATE *19 Oct 01*

ORGANIZATION *ARB*

CERTIFIED BY *ARB* DATE

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME
Carnival Spirit

STREET ADDRESS
Course Ship Terminal, North Pier

CITY
San Diego STATE
CA ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
Port fluke of the whale's tail

HEIGHT ABOVE GROUND LEVEL
~150' HEIGHT RELATIVE TO OBSERVER
Start *150* End *150*

DISTANCE FROM OBSERVER DIRECTION FROM OBSERVER
Start End Start End

DESCRIBE EMISSIONS
Start *droffing* End

EMISSION COLOR IF WATER DROPLET PLUME
Start *UNK* End *UNK* Attached Detached

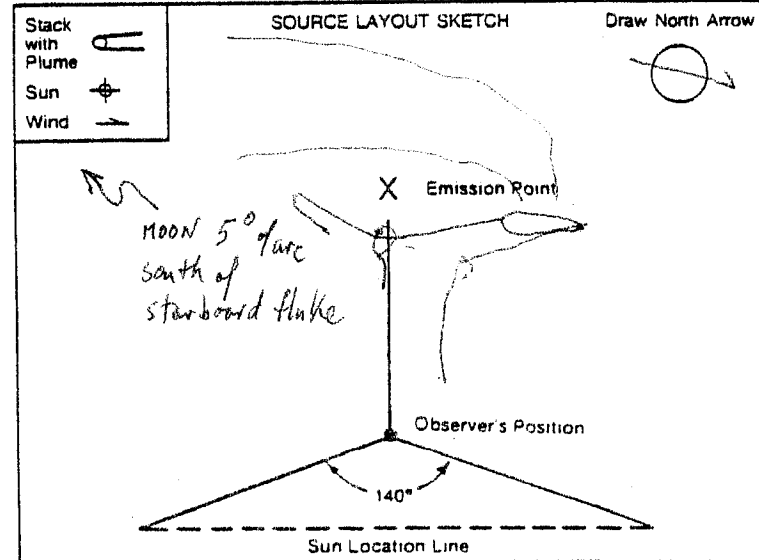
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *top edge of whale tail* End

DESCRIBE PLUME BACKGROUND
Start *clear sky* End

BACKGROUND COLOR SKY CONDITIONS
Start *black* End *black* Start *clear w/ crescent moon* End *clear*

WIND SPEED WIND DIRECTION
Start *1 mph* End *1 mph* Start *NW* End *NW*

AMBIENT TEMP WET BULB TEMP RH, percent
Start *70* End *70*



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME		END TIME	COMMENTS
20 Oct 01		1940		1950	
SEC	0	15	30	45	COMMENTS
MIN					
1	3/4	3/4	3/4	3/4	There are NO visible emissions from the starboard side
2	3/4	3/4	3/4	3/4	
3	3/4	3/4	3/4	3/4	
4	3/4	3/4	3/4	3/4	
5	3/4	3/4	3/4	3/4	
6	3/4	3/4	3/4	3/4	
7	3/4	3/4	3/4	3/4	
8	3/4	3/4	3/4	3/4	
9	3/4	3/4	3/4	3/4	
10	3/4	3/4	3/4	3/4	
11					
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30					

OBSERVER'S NAME (PRINT)
TERRANCE PRESTON

OBSERVER'S SIGNATURE
Terrance Preston DATE

ORGANIZATION

CERTIFIED BY DATE

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME *Hillier Associates Staten Island*

STREET ADDRESS

CITY *San Diego* STATE *CA* ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT
a cluster of eight or more stacks

HEIGHT ABOVE GROUND LEVEL *150'* HEIGHT RELATIVE TO OBSERVER
Start *150'* End *150'*

DISTANCE FROM OBSERVER Start *500'* End DIRECTION FROM OBSERVER
Start *WNW* End *WNW*

DESCRIBE EMISSIONS
Start *No visible emissions* End *No visible emissions*

EMISSION COLOR Start *N/A* End *N/A* IF WATER DROPLET PLUME
Attached Detached

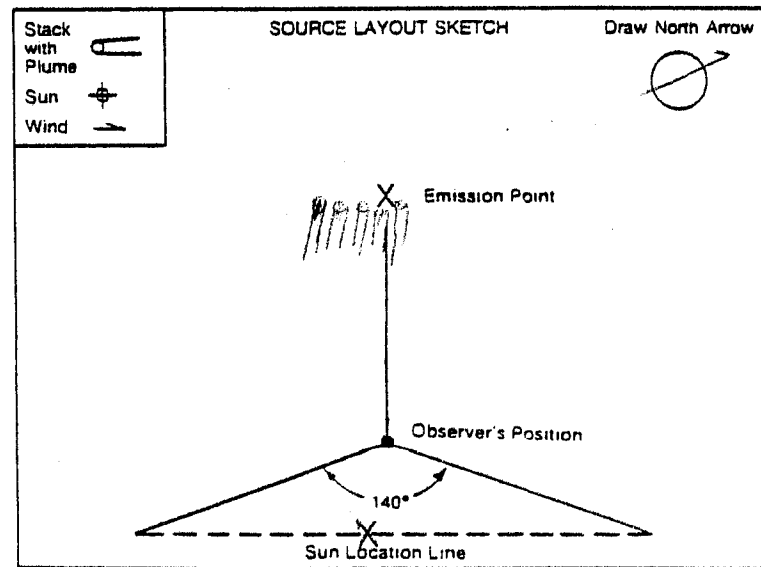
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stacks* End *just above stacks*

DESCRIBE PLUME BACKGROUND
Start *mostly blue sky ^{thin} cloud top* End *high thin clouds*

BACKGROUND COLOR Start *lt blue* End *lt blue* SKY CONDITIONS *thin wispy*
Start *high clouds* End *high clouds*

WIND SPEED Start *calm* End *calm* WIND DIRECTION Start *N/A* End *N/A*

AMBIENT TEMP Start *70* End *70* WET BULB TEMP RH, percent



ADDITIONAL INFORMATION
100% emission observed on approach from port rear stack / All clear before observation

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>14 Oct 01</i>		<i>1030</i>		<i>1039</i>	
SEC	0	15	30	45	
MIN					
1	0	0	0	0	
2	0	0	0	0	
3	0	0	0	0	
4	0	0	0	0	
5	0	0	0	0	
6	0	0	0	0	
7	0	0	0	0	
8	0	0	0	0	
9	0	0	0	0	
10	0	0	0	0	
11					
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OBSERVER'S NAME (PRINT) *Terone Prestons*

OBSERVER'S SIGNATURE *Terone Prestons* DATE *14 Oct 01*

ORGANIZATION *Air Resources P/d*

CERTIFIED BY *ARB* DATE *12 Sept 01*

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME
HA stadium

STREET ADDRESS
Harbor Blvd

CITY
San Diego STATE
CA ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT

HEIGHT ABOVE GROUND LEVEL
150 HEIGHT RELATIVE TO OBSERVER
Start *150* End *150*

DISTANCE FROM OBSERVER
Start *500'* End *500'* DIRECTION FROM OBSERVER
Start *NW* End *WNW*

DESCRIBE EMISSIONS
Start *lofting* End *lofting*

EMISSION COLOR
Start *grey* End *grey* IF WATER DROPLET PLUME
Attached Detached

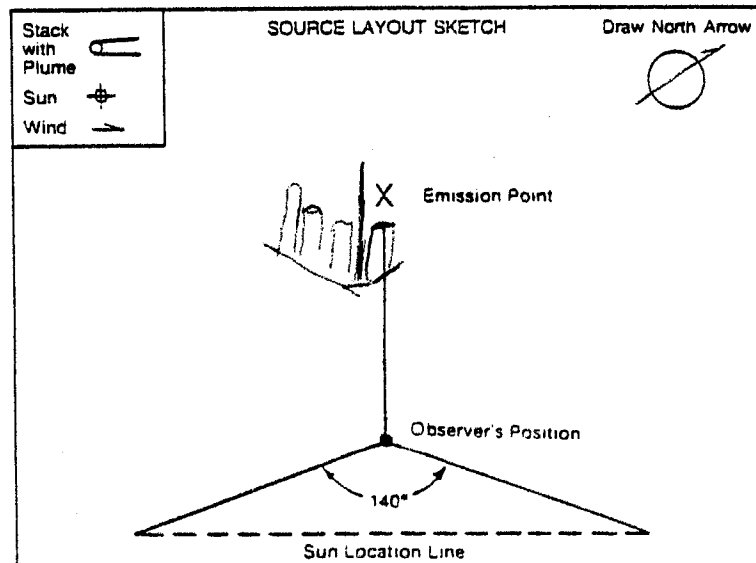
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

DESCRIBE PLUME BACKGROUND
Start *clear sky* End *clear sky*

BACKGROUND COLOR
Start *blue* End *blue* SKY CONDITIONS
Start *partly cloudy* End *partly cloudy*

WIND SPEED
Start *0-2* End *0-2* WIND DIRECTION
Start *North* End *North*

AMBIENT TEMP
Start *75* End *75* WET BULB TEMP RH, percent



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>14 Oct 01</i>		<i>1118</i>		<i>1125</i>	
SEC	0	15	30	45	
MIN					
1	<i>1/2</i>	<i>0</i>	<i>0</i>	<i>1/2</i>	
2	<i>0</i>	<i>0</i>	<i>1/2</i>	<i>1/2</i>	
3	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
4	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
5	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>emissions</i>
6	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>stopped.</i>
7	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	
8	<i>0</i>	<i>0</i>	<i>0</i>		
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)
Tarone Preston

OBSERVER'S SIGNATURE
Tarone Preston DATE
14 Oct 01

ORGANIZATION

CERTIFIED BY
ARB DATE
12 Sept 01

CONTINUED ON VEO FORM NUMBER

VISIBLE EMISSION OBSERVATION FORM

No.

COMPANY NAME
Celebrity

STREET ADDRESS

CITY STATE ZIP

PHONE (KEY CONTACT) SOURCE ID NUMBER

PROCESS EQUIPMENT OPERATING MODE

CONTROL EQUIPMENT OPERATING MODE

DESCRIBE EMISSION POINT

HEIGHT ABOVE GROUND LEVEL
150 feet

HEIGHT RELATIVE TO OBSERVER
Start End

DISTANCE FROM OBSERVER
Start *150 yds* End

DIRECTION FROM OBSERVER
Start End

DESCRIBE EMISSIONS

Start *lofting* End *lofting*

EMISSION COLOR IF WATER DROPLET PLUME
Start End Attached Detached

POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED
Start *just above stack* End *just above stack*

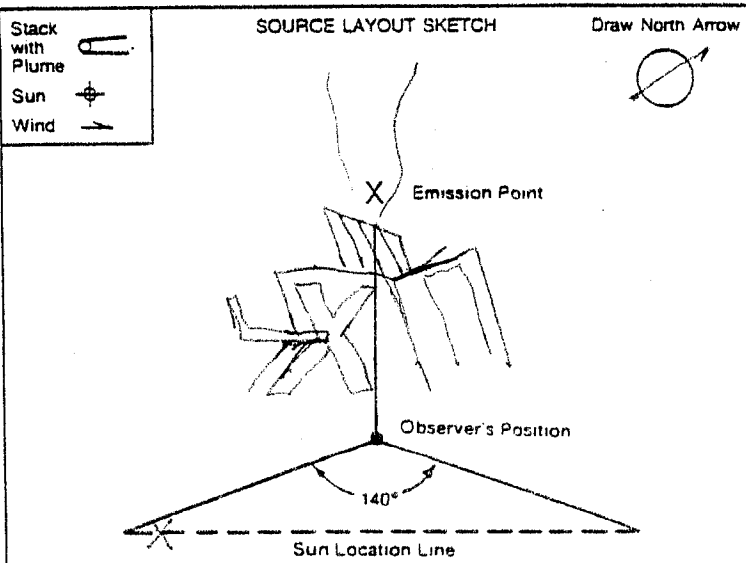
DESCRIBE PLUME BACKGROUND

Start *high thin clouds* End

BACKGROUND COLOR SKY CONDITIONS
Start *blueish white* End *blueish white* Start *high clouds* End

WIND SPEED WIND DIRECTION
Start *0-1* End *0-1* Start *S* End *S*

AMBIENT TEMP WET BULB TEMP RH, percent
Start *78* End *78*



ADDITIONAL INFORMATION

OBSERVATION DATE		START TIME		END TIME	COMMENTS
<i>21 Oct 01</i>		<i>1314</i>		<i>1324</i>	
SEC	0	15	30	45	
MIN					
1	<i>1</i>	<i>3/4</i>	<i>3/4</i>	<i>1 1/2</i>	
2	<i>3/4</i>	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	<i>full stop</i>
3	<i>1/2</i>	<i>3/4</i>	<i>1/2</i>	<i>1/2</i>	
4	<i>1/2</i>	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	
5	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	<i>1/2</i>	
6	<i>3/4</i>	<i>1/2</i>	<i>3/4</i>	<i>3/4</i>	
7	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
8	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
9	<i>3/4</i>	<i>3/4</i>	<i>1/2</i>	<i>3/4</i>	
10	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	<i>3/4</i>	
11					<i>reader departing</i>
12					<i>for airport</i>
13					
14					
15					
16	<i>1/4</i>				
17					
18					<i>began reading</i>
19					<i>while vessel was</i>
20					<i>still maneuvering</i>
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

OBSERVER'S NAME (PRINT)

OBSERVER'S SIGNATURE DATE

ORGANIZATION

CERTIFIED BY DATE

CONTINUED ON VEO FORM NUMBER

Attachment 16

**Table C16 of the Appendix 6 of
the Alaska Impacts Report**

Attachment 16 - Table C16
2001 Large Ships Combining Blackwater and Graywater and Immediately Treating and Discharging
The Impact of Cruise Ship Discharge on Alaskan Waters

Treatment Type	Sample Date	Waste Type	Fecal Coliform (MPN/100 ml)	TSS (mg/l)	Ammonia (mg/l)	pH	BOD (mg/l)	COD (mg/l)	Cl, Residual (mg/l)	Cl, Free (mg/l)	Conductivity (umhos/cm)
		MDL	2	0.1	0.016	0.1	1.0	3.7	0.1	0.1	1.0
Advanced	05/14/01	Black/Gray	2	0.7	1.180	3.96	63.2	99.7	0.05	0.05	16.1
Advanced	07/31/01	Black/Gray	1	0.7	0.732	7.40	0.5	1.7	0.05	0.05	61.9
Advanced	08/08/01	Black/Gray	1	0.7	0.616	7.10	2.2	1.7	0.05	0.05	36.2
Advanced	08/08/01	Black/Gray	1	0.7	0.954	7.00	5.4	10.4	0.10	0.05	69.3
Advanced	08/09/01	Black/Gray	1	0.7	0.463	6.80	3.4	1.7	0.05	0.05	45.8
Advanced	08/10/01	Black/Gray	1	0.7	0.541	7.20	0.5	1.7	0.05	0.05	46.1
Advanced	08/10/01	Black/Gray	1	0.7	0.485	7.00	10.8	23.2	0.05	0.05	65.0
Advanced	08/11/01	Black/Gray	1	0.7	0.267	7.40	2.1	1.7	0.05	0.05	85.0
Advanced	08/11/01	Black/Gray	1	0.7	0.171	7.30	0.5	12.6	0.05	0.05	86.8
Advanced	09/09/01	Black/Gray	1	0.7	0.454	7.05	0.5	14.7	0.05	0.05	13.2
Advanced	06/28/01	Black/Gray	1	0.7	0.640	7.20	not found	not found	not found	not found	not found
Advanced	08/01/01	Black/Gray	1	0.7	17.900	7.55	0.5	1.7	0.05	0.05	570.0
Macerator/Chlorinator	07/13/01	Black/Gray	60	189.0	0.340	7.00	134.0	1,100.0	5.00	1.40	40,400.0

Macerator/Chlorinator	07/13/01	Black/Gray	5	128.0	3.490	7.10	190.0	973.0	2.50	0.40	34,400.0
Macerator/Chlorinator	08/08/01	Black/Gray	Invalidated	326.0	11.200	not found	313.0	not found	0.05	0.05	not found
Macerator/Chlorinator	08/08/01	Black/Gray	Invalidated	173.0	16.700	7.20	180.0	1,100.0	0.05	0.05	28,500.0
Min			1	0.7	0.171	3.96	0.50	1.7	0.05	0.05	13.2
Median			1	0.7	0.628	7.10	3.44	11.5	0.05	0.05	67.2
Max			60	326.0	17.900	7.55	313.00	1,100.0	5.00	1.40	40,400.0
Geometric Mean			2	2.7	1.076	6.88	6.73	16.7	0.09	0.07	223.0

Attachment 17

Table II-6 of the Alaska Impacts Report

Attachment 17, Table II-6: 2001 Large Ship Summary Data
The Impact of Cruise Ship Discharge on Alaskan Waters

Type of Water	Samples	Sampled From Tank Type	Results as a geometric mean				
			Fecal Coliform (MPN/100 ml)	TSS mg/l	BOD	COD	Cl residual
	N						
Accommodation	15	DB	10,896	77	266	573	0.15
Accommodation	15	CT	2,189	67	282	527	0.49
Galley	10	DB	784,072	512	1,587	2,404	0.23
Galley	23	CT	Missing	349	728	1,414	0.34
Mixed Graywater	4	DB	649,994	114	259	367	0.05
Mixed Graywater	13	CT	38,933	108	246	474	0.11
Laundry	7	DB	651,460	66	230	634	0.12
Laundry	2	CT	30	22	86	571	0.32
Mixed BW&GW	16	MSD	2	2.7	6.73	16.7	0.07

2001 Graywater

- ▶ GW from accommodations stored in double bottom tanks had high fecal coliform geometric mean of 10,896 MPU/100ml but the TSS geometric mean complied with the 150 mg/L standard at 77. Accommodation graywater stored in collecting tanks fecal coliform geometric mean is 2,189 MPN/100ml and a TSS of 67 mg/L. The chlorine residual of the collecting tanks was 0.49 mg/L compared with 0.15 mg/L in double bottom tanks.
- ▶ GW Galley from double bottom tanks had the highest fecal coliform geometric mean of 784,072 MPN/100ml, the lowest pH of 4.8, a COD of 2404 mg/L and 1,587 mg/L of BOD. 2001 GW Galley from collecting tanks COD geometric mean was 1,414 mg/L and the total chlorine was 2 mg/L and a residual of 0.34 mg/L.
- ▶ GW laundry in double bottom tanks had a fecal coliform geometric mean of 651,460 MPN/100 ml and 66 mg/L of TSS.
- ▶ GW laundry in collecting tanks had only two samples but both samples had fecal coliform of 30 mg/L, low TSS of 22 mg/L, and low levels of chlorine of 0.32 mg/L.
- ▶ GW mixed from double bottom tanks fecal coliform geometric mean was 649,994 MPN/100 ml with a TSS of 113.5 mg/L. The graywater mixed from collecting tanks fecal coliform geometric mean and TSS was 38,933 MPN/100 ml and 108 mg/L

2001 Blackwater

- ▶ BW&GW mixed had low geometric mean for fecal coliform and TSS because most of the results were from advanced systems. Treated blackwater was not discharged in Alaska waters, except for advance treatment units and one ship that used a macerator chlorinating system. One ship that discharged their blackwater outside Alaska water sampled their blackwater voluntarily.

Attachment 18

Cruise Ship Emissions Summary

Attachment 18 - Cruise Ship Emissions Summary

	Total Distance (nm) ₁	Average Speed (knots) ₂	Total hrs. ₃	Average Power (kW) ₄	NOx Emissions		PM Emissions		HC Emissions	
					Emission Factor	Emissions (TPD) ₆	Emission Factor	Emissions (TPD) ₆	Emission Factor	Emissions (TPD) ₆
					(g/kW-hr) ₅	(TPD) ₆	(g/kW-hr) ₅	(TPD) ₆	(g/kW-hr) ₅	(TPD) ₆
Transiting	90930	17	5349	17,000	13	3.57	1.5	0.41	0.5	0.14
Maneuvering	N/A	N/A	1875	14,000	13	1.03	1.5	0.12	0.5	0.04
Hotelling	N/A	N/A	3750	7,000	13	1.03	1.5	0.12	0.5	0.04
						5.63		0.65		0.22

	Total Distance (nm) ₁	Average Speed (knots) ₂	Total hrs. ₃	Average Power (kW) ₄	SOx Emissions		CO Emissions		CO2 Emissions	
					Emission Factor	Emissions (TPD) ₆	Emission Factor	Emissions (TPD) ₆	Emission Factor	Emissions (TPD) ₆
					(g/kW-hr) ₅	(TPD) ₆	(g/kW-hr) ₅	(TPD) ₆	(g/kW-hr) ₅	(TPD) ₆
Transiting	90930	17	5349	17,000	12.6	3.46	1.6	0.44	660	181
Maneuvering	N/A	N/A	1875	14,000	12.6	1.00	1.6	0.13	660	52
Hotelling	N/A	N/A	3750	7,000	12.6	1.00	1.6	0.13	660	52
						5.45		0.69		286

Notes:

- 1 See spreadsheet "cruise ships.xls" and divide total miles by 1.1516 to convert to knots
- 2 Estimates based on personal communications with Wartsila (1/20/03 email) and Princess Cruises (8/26/02 telephone conversation).
- 3 For transiting, divide distance by speed.
For maneuvering, multiply 375 port calls by 5 hrs maneuvering (2.5 hrs in and 2.5 hrs. out) per "Marine Vessels Emissions Inventory and Control Strategies, Acurex Environmental, 12/12/96, p. 4-38.
For hotelling, multiply 375 port calls by 10 hrs per "Marine Vessels Emissions Inventory: 1996 Update," 9/23/99.
- 4 Transiting power based on estimated average 17 MW load (10 propulsion, 7 on-board power) per Wartsila 1/20/03.
Maneuvering power based on 14 MW load (7 propulsion, 7 on-board power) per Wartsila 1/20/03).
Hotelling power average of 7MW (per Wartsila 1/20/03).
- 5 Emission factors based on "Marine Exhaust Emissions Research Programme," Lloyd's Register, p. 17 and 32.
Sox emission factor based on 3% sulfur bunker fuel. NOx based on IMO std. for 500 rpm diesel engine.
- 6 Emissions based on hrs of operation x engine power x emission factor.