

ROYAL CARIBBEAN CRUISES LTD.

**ENVIRONMENTAL COMPLIANCE
AUDIT REPORT**

M/V LEGEND OF THE SEAS

Prepared for

**Royal Caribbean Cruises, Ltd.
Miami, Florida**

Prepared by

**Haley & Aldrich, Inc.
Brea, California**

**File No. 86168-412
May 2002**

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17 July 2002
File No. 86168-412

Captain William Wright
Senior Vice President
Safety & Environment
Royal Caribbean Cruises Ltd.
1050 Caribbean Way
Miami, FL 33132-2096

Subject: Legend of the Seas
Environmental Audit Report

Dear Captain Wright:

Enclosed please find three copies of the Environmental Audit Report for the Legend of the Seas.

If you have any questions regarding the report, please feel free to contact either of us.

Sincerely yours,
HALEY & ALDRICH, INC.

A handwritten signature in cursive script, appearing to read "Judit Kovacs".

Judit Kovacs, CIH, CPEA
Vice President
Project Manager

A handwritten signature in cursive script, appearing to read "Robert J. Kloepfer".

Robert J. Kloepfer, CPEA
Vice President
EH&S Management Consulting

cc: Jennifer Hernandez, Beveridge & Diamond (1 copy)
Karl Bourdeau, Beveridge & Diamond (1 copy)
Robert Ojala, ABS Consulting (1 copy)

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EXECUTIVE SUMMARY

At the request of Royal Caribbean Cruises, Ltd. (RCCL), Haley & Aldrich, Inc. completed an environmental compliance audit on the M/V Legend of the Seas (the Legend). The audit was completed pursuant to the plea agreement between RCCL and the United States District Courts for the District of Puerto Rico and the Southern District of Florida in June of 1998, and the Environmental Compliance Plan (ECP) for Royal Caribbean Cruises, Ltd. approved by the courts on 4 January 1999, and amended on 26 March 1999, 5 March 2000, and 31 October 2000. The on-board audit took place between 6 and 8 May 2002.

OVERVIEW OF FINDINGS

Overall, compliance with the ECP and applicable U.S. and Hawaii laws and regulations aboard the Legend was found to be outstanding. Officer and crew cooperation aboard the vessel during the conduct of on-board audit activities was uniformly outstanding. Auditors were provided access to all areas of the ship requested and interviews with all necessary individuals were arranged upon request.

All of the elements evaluated during the environmental compliance audit were found to be in conformance with the audit criteria.

REPORT ORGANIZATION

This report is divided into three sections. Section 1.0 serves as a general introductory section, including the objectives and criteria of the audit program and identification of the Haley & Aldrich audit team. Section 1.0 also includes other logistical information related to the audit, such as the dates of the on-board audit activities and the tasks undertaken to accomplish the stated objectives. Section 2.0 presents background information on the Legend, including the date the keel was laid, weight of the vessel, passenger capacity, a description of the environmental management organization, and a discussion of the waste stream handling practices of the vessel. Section 3.0 identifies non-conformances with audit criteria.

1.0 SCOPE OF WORK

1.1 Environmental Audit Objective

The objective of the Legend audit was to determine compliance with the approved ECP and related U.S. federal environmental laws and regulations. Specific audit criteria and methods that were employed by the auditors to evaluate the Legend are included in the Environmental Compliance Plan Audit Protocol for Royal Caribbean International, which is a part of Haley & Aldrich's audit Workplan.

The Legend was evaluated for compliance with the following audit criteria:

- | The RCCL ECP approved by the U.S. District Court for the Southern District of Florida; and
- | U.S. federal and port state (Hawaii) laws and regulations applicable to waste management practices aboard foreign vessels.

The period of review for the audit extended from the date of the last audit, 19 May 2001, to the dates on which this audit's activities were completed, 6-8 May 2002.

1.2 Audit Logistics

The environmental compliance audit of the Legend was conducted beginning on Monday, 6 May 2002 and concluding on Wednesday, 8 May 2002, for a total of three days on-board. The Haley & Aldrich audit team consisted of three members. Mr. Joseph Cotier, CPEA, Senior Engineer, served as the Audit Team Leader. Mr. Robert Kloepfer, CPEA, Senior Vice President, participated as an Audit Team member. Mr. Robert Ojala, Marine Surveyor, of ABS Consulting, participated as an Audit Team Member and performed audit activities related to mechanical aspects of shipboard pollution control systems.

The ship's itinerary during the audit included ports in Honolulu, Hawaii; Lahaina, Hawaii; Nawiliwili, Hawaii; Kona, Hawaii; Hilo, Hawaii; and Vancouver, British Columbia, Canada. The audit team boarded in Honolulu on Monday, 6 May 2002 and disembarked on Thursday, 9 May 2002 in Nawiliwili.

1.3 Audit Methodology

On 6 May 2002, the audit was initiated with an Opening Conference, attended by the Legend's senior officers and Royal Caribbean International Management personnel, to discuss the scope of work and the plan for accomplishing necessary tasks while on-board. A comprehensive inspection tour of the ship was subsequently completed. Following the inspection, the Haley & Aldrich auditors began a review of pertinent

environmental records and logs, conducted interviews with ship’s officers and crew, and performed “spot-checks” of areas and activities to verify audit conclusions. Document review was limited to the period from the last audit up until the date of this audit. Upon completion of the initial inspection tour, ABS Consulting conducted a marine engineering inspection of the ship’s oily bilge water separator systems, marine sanitation devices, and piping arrangements associated with the bilge, gray water/ miscellaneous wastewater, and black water systems. On the final day of the audit, the audit team conducted a Closing Conference, including a discussion of the audit findings with the Legend’s senior officers and Royal Caribbean International Management personnel.

1.4 Audit Criteria Reviewed

The audit criteria reviewed included elements of the ECP pertinent to Royal Caribbean International vessels and applicable federal and Hawaii laws and regulatory requirements relevant to the ship’s circumstances during the audit.

Audit Topic	ECP/Regulatory Section
Environmental Management Systems	Environmental Compliance Plan (ECP)
Waste Management Procedures	ECP Appendix II Waste Management Plan ECP Appendix III Inspections, Assessments, and Internal Environmental Meetings/Reports
Water Discharges	Clean Water Act and MARPOL Annex I and V, implemented at 33 CFR Parts 151, 153, 159 and 40 CFR § 140.3 and .4 (marine sanitation devices), and 40 CFR Part 110. CERCLA, 40 CFR § 302.4. Hawaii Administrative Code, Title 11 (HAC 11): HAC 11-54-06 (Uses And Specific Criteria Applicable To Marine Waters); HAC 11-55-04 (Application For NPDES Permit, Notice Of Intent, Or Conditional "No Exposure" Exclusion)

Audit Topic	ECP/Regulatory Section
Wastes Incinerated On-board or Off-Loaded Ashore	<p>MARPOL Annex I and V, implemented at 33 CFR Part 151. Resource Conservation and Recovery Act (RCRA), Subtitle C; 40 CFR Parts 261, 262, 268 and 279 (used oil).</p> <p>Hawaii Administrative Code, Title 11 (HAC 11): HAC 11-104 (Infectious Waste); HAC 11-260, -261, -262, -265, -268 (Hazardous Waste); HAC 11-266 (Specific wastes) HAC 11-273 (Universal Waste); HAC 11-279 (Used Oil); HAC 11-261-8 (PCB Management).</p>

Note: Ship’s navigation charts (both paper and electronic) covering itineraries from May 2001 to December 2001 (and earlier) had been transferred to the GTS Brilliance of the Seas and were not available for use when plotting selected points to confirm various discharges outside of twelve (12) nautical miles. Through review of Bridge and other log books, it was determined that the Legend was outside of U.S. waters for this period of time (May to December 2001). Plotting of 39 positions covering January to May 2002 was completed with all plotted positions confirmed to be outside 12 nautical miles of land at Sea Condition.

1.5 Audit Report Limitations

This report provides an opinion of compliance with regulatory and other audit criteria and is not intended to render any opinion relative to existing vessel conditions, except as outlined in the described scope of work.

In the conduct of this audit, Haley & Aldrich has attempted to independently evaluate information obtained within the limits of the established scope of work as described in our Workplan. As with any evaluation of this type, there is a certain degree of dependence upon oral or written information provided by vessel or other Company representatives which is not always readily verifiable through visual inspection or review of collaborating documentation. Haley & Aldrich is not responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed by Company or vessel representatives at the time this audit was performed.

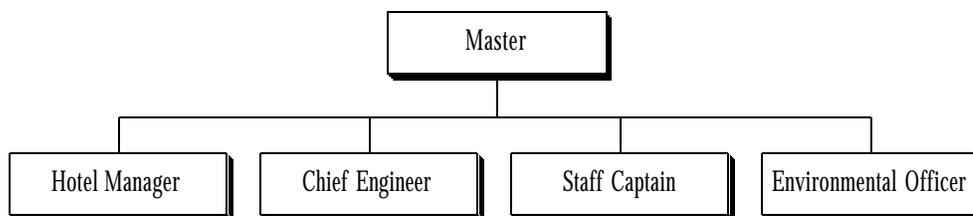
2.0 VESSEL BACKGROUND

2.1 Vessel Environmental Management Organization

The Master of the Legend reports to the Royal Caribbean International Senior Vice President for Marine Operations. The primary officer responsible for environmental compliance aboard the Legend is the Environmental Officer (EO). The Environmental Officer reports directly to the Master.

Figure ES-1, presents an overview of the organization in place to address environmental program issues aboard the Legend.

**Figure ES-1
LEGEND
ENVIRONMENTAL MANAGEMENT
ORGANIZATION**



2.2 Description of The Legend

The Legend is an all welded steel, passenger cruise vessel of modern streamlined design, having 12 decks above the main deck level. The Port of Registry is Nassau, Bahamas. The ship was built by Chantiers de L'Atlantique in St.Nazaire, France; her keel was laid on 15 December 1993 and she was delivered in April of 1995. The ship reportedly carries 2,074 passengers and 740 crew. The Legend's registered gross tonnage is 69,130; it has an overall length of 264.26 m, breadth of 32.00 m., and a design draft of 7.55 m. The ship's propulsion system consists of twin screws, diesel electric with propellers driven by two (2) large electric motors, with five (5) diesel engine driven generators. The vessel has bow & stern thrusters.

2.3 Waste Management Practices

The following is a description of the waste management practices aboard the Legend with regard to each waste stream identified in the Royal Caribbean International Waste Management Plan.

Gray Water/Miscellaneous Wastewaters

The gray water piping system onboard this vessel leads to five gray water collecting tanks plus two galley tanks (one collecting tank and one larger holding tank No. 9) and two laundry tanks. Two large gray water holding tanks and the No. 3 ballast tank are used for overflow when necessary and rinsed before returning to ballast service. Each of the gray water collecting tanks can be pumped overboard when outside of 12 nautical miles (nm) of the shoreline. These tanks are reportedly not required to be deballasted while in port.

The gray water and black water piping systems were generally examined for possible interconnections and, because of the vacuum characteristic of the black water collection system, it is virtually impossible to interconnect the system to the gray water piping without losing vacuum on the black water system. The gray water and black water from the ship's hospital are both collected in the black water system with vacuum maintained in this area by use of check valves between the two piping systems.

Observations during the audit, interviews and logbook entries since 19 May 2001, confirmed that gray water/miscellaneous wastewater was discharged only outside 12 nm of land at Sea Condition, outside U.S. waters.

Black Water

Both Marine Sanitation Devices use "JETS" vacuum pumps (three per collecting tank) which discharge the untreated black water into four collecting tanks, then discharge into the two "K.G. Hamann" treatment systems. The treated black water is discharged directly overboard when the vessel is beyond 12 nm of land. This vessel does not currently use gray water or ballast tanks to store treated black water.

The Marine Sanitation Devices are of a dilution and treatment design and the effluent is treated with liquid chlorine prior to discharge overboard. Hamann Press filter units have been installed to filter the debris from untreated black water that enters the two Hamann Treatment Systems. All debris collected by the press filters is reportedly incinerated.

The Marine Sanitation devices and related maintenance records were examined, and all were found in compliance with the Manufacturer's recommendations and the vessel owner's maintenance schedule.

Observations during the audit, interviews and logbook entries since 19 May 2001, confirmed that black water was discharged only outside 12 nm of land at Sea Condition, outside U.S. waters.

Bilge Water

The oily bilge pumps discharge into the bilge water holding tank (the system has a two-stage settling tank installed) before entering the oily water separator to remove heavy oil concentrations. A newly installed Marinfloc Type SDWU05 Sludge Dewatering Unit was in operation to additionally separate water from the sludge tank, before the water treated by two Marinfloc oily water separators. These separators are each provided with a 15 ppm oily bilge water discharge monitor/alarm (calibrated to 5 ppm), through which the oily water separators discharge into clean bilge water holding tanks. A third 15 ppm meter, also calibrated to 5 ppm oil, is installed in the overboard discharge line from these clean bilge water holding tanks with an automatic 3-way valve which stops discharge if the monitor reaches 5 ppm of oil or greater.

The piping system for suction and discharge of bilge water, as well as the pollution prevention equipment associated with bilge water treatment and discharge, were visually examined and found to be in compliance with U.S. laws and regulations implementing MARPOL (hereinafter, "MARPOL"). Based on a review of the Oil Record Book, all discharges of clean separated bilge water and the operation of the oily bilge water separators were found to be logged as required.

Based on observations during the audit, interviews and Oil Record Book entries since 19 May 2001, treated bilge water was discharged only outside 12 nm of land at Sea Condition, outside U.S. waters.

Oily Sludge

Separated bilge oil is discharged from the oily water separators to a dedicated sludge oil tank listed in paragraph three of the attachment to the IOPP Certificate. Oily sludge is approved for disposal at a shore facility or for burning in the vessel's incinerator or auxiliary boiler, per the IOPP certificate Supplement, Form-A. Based on interviews and Oil Record Book entries since 19 May 2001, oily sludge has been landed to shoreside facilities.

Solid Waste

The following is a description of the Legend's solid waste management practices for each waste stream identified on the vessel. Haley & Aldrich auditors based this information on observations of the waste handling practices, document and record reviews, and interviews with the Environmental Officer.

Waste Stream	Ship's Waste Management Practices
<ul style="list-style-type: none"> ▪ Aerosol Cans, including carbon filters from the puncturing device 	<p>Aerosol cans are depressurized at Sea Condition. The empty cans are landed for disposal as non-hazardous waste.</p> <p>Liquids drained from the aerosol cans during the depressurization process are captured in a drum and are landed for disposal as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Batteries – lead acid 	<p>Expired lead-acid batteries are collected in a container on-board and landed as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Batteries – Lithium or mercury 	<p>Expired lithium or mercury batteries are collected in a container on-board and landed as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Batteries – nickel cadmium, alkaline, carbon-zinc and other “Universal Waste” batteries 	<p>Expired batteries are collected in a container on-board and landed as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Biomedical wastes 	<p>Biomedical waste is bagged in red bags labeled as “Bio-Hazard”, collected within the hospital and incinerated. “Sharps” containers from the hospital and those collected from cabins, are landed for disposal as biomedical waste.</p>
<ul style="list-style-type: none"> ▪ Butane lighters 	<p>Butane lighters are collected on-board and are landed as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Cidex Medical disinfectant 	<p>Cidex solution is not used aboard the ship.</p>
<ul style="list-style-type: none"> ▪ Cleaning solutions (acids) 	<p>Cleaning solutions are landed for disposal as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Collected residuals from tank cleaning 	<p>No residuals from tank cleaning had been landed during the period of review.</p>
<ul style="list-style-type: none"> ▪ Cooking oil 	<p>Cooking oil is collected in designated portable containers and landed as non-hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Expired chemical products (i.e., expired shelf-life) and discarded chemical products 	<p>Expired products are landed for disposal as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Expired pharmaceuticals 	<p>Expired pharmaceuticals are incinerated on-board.</p>
<ul style="list-style-type: none"> ▪ Food waste 	<p>Food wastes are processed through the pulpers and discharged to sea at Sea Condition. Large food items that cannot be pulped are reduced in size and manually placed in the incinerator.</p>
<ul style="list-style-type: none"> ▪ Glass 	<p>Glass is crushed and landed for recycling.</p>
<ul style="list-style-type: none"> ▪ Incinerator ash 	<p>Incinerator ash is collected on-board and landed for disposal as non-hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Dry cleaning wastes 	<p>Dry cleaning wastes are collected on-board and landed for disposal as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ PCB-containing light ballasts 	<p>No PCB-containing light ballast waste stream was observed aboard the ship during the period of review.</p>
<ul style="list-style-type: none"> ▪ Medical facility X-ray silver-bearing waste 	<p>X-ray silver-bearing waste is collected on-board and landed for disposal as hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Oil Filters 	<p>Oil filters are drained, collected on-board, and landed as non-hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Oily rags 	<p>Oily rags are collected on-board and incinerated, or landed as non-hazardous waste.</p>
<ul style="list-style-type: none"> ▪ Packing Materials (dunnage) 	<p>Packing materials are incinerated on-board.</p>

Waste Stream	Ship's Waste Management Practices
▪ Paint rags/debris	Paint rags and debris are collected on-board and incinerated, or landed as hazardous waste.
▪ Paper, cardboard, trash	Paper and cardboard wastes and trash are collected on-board and incinerated.
▪ Photo shop paper filters	Paper (foam) filters from the photo shop processing equipment are collected and landed as hazardous waste.
▪ Photo shop silver recovery cartridges	Photo shop silver recovery cartridges are landed for recycling.
▪ Photo shop wastewaters	Photo shop wastewaters are collected and landed for disposal as hazardous waste.
▪ Plastics	Light plastics such as plastic bags are incinerated on-board; empty hard plastic containers are landed for disposal as non-hazardous waste.
▪ Potable water filter cartridges	Potable water filter cartridges are landed as non-hazardous waste.
▪ Print shop waste, rags, and debris	Print shop waste rags and debris are collected on-board and incinerated.
▪ Printer cartridges	Spent printer cartridges are landed for recycling.
▪ Recyclable cans/metals	Aluminum and tin cans are crushed on-board and landed for recycling.
▪ Sand from sandblast units	Sand from the sandblast unit had not been landed during the period of review.
▪ Sand (spent filtration media) from freshwater treatment system, pools, jacuzzis	Pool filtration sand is landed as non-hazardous waste.
▪ Smoke detectors	No smoke detectors had been landed during the audit period. The type of detectors used aboard the ship do not contain radioactive elements.
▪ Spent and expired flares and signaling devices	No expired flares and signaling devices had been landed during the period of review.
▪ Spent Marinfloc filtration media	Spent Marinfloc filtration media is landed for disposal as hazardous waste.
▪ Sterno cans with fluid	Sterno cans are not used.
▪ Used Paints and Thinners	Paints and thinners are landed for disposal as hazardous waste. Empty (dry) paint and thinner containers are landed as non-hazardous waste.

2.4 Additional Waste Streams Identified During The Audit

The following additional waste were identified during the audit:

- Computer video monitors/equipment – landed for disposal as hazardous waste.

3.0 AUDIT FINDINGS

All of the elements evaluated during the environmental compliance audit were found to be in conformance with the audit criteria.