

ROYAL CARIBBEAN CRUISES LTD.

**ENVIRONMENTAL COMPLIANCE
AUDIT REPORT**

M/V SPLENDOUR OF THE SEAS

Prepared for

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

Prepared by

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

**File No. 86168-414
June 2002**

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29 July 2002
File No. 86168-414

Captain William Wright
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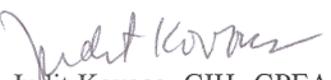
Subject: Splendour of the Seas
Environmental Audit Report

Dear Captain Wright:

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

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

Sincerely yours,
HALEY & ALDRICH, INC.


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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 Splendour of the Seas (the Splendour). 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 27 to 30 June 2002.

OVERVIEW OF FINDINGS

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

The Splendour 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 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, 15 May 2001, to the dates on which this audit's activities were completed (27 to 30 June 2002). The Splendour did not sail in U.S. waters during the entire period of audit review.

1.2 Audit Logistics

The environmental compliance audit of the Splendour was conducted beginning on Thursday, 27 June 2002, and concluding on Sunday, 30 June 2002, for a total of three days on board. The Haley & Aldrich audit team consisted of three members. Ms. Judit Kovacs, CIH, CPEA, Project Manager for the RCCL audit project, served as the Audit Team Leader. Mr. Russell Boesch, CHMM, CPEA 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 Naples, Italy; Valletta, Malta; Barcelona, Spain. The audit team boarded in Naples on Thursday, 27 June 2002 and disembarked on Sunday, 30 June 2002 in Barcelona.

1.3 Audit Methodology

On 27 June 2002, the audit was initiated with an Opening Conference, attended by the Splendour'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 Splendour’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 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.
Wastes Incinerated On-board or Off-Loaded Ashore	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).

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 that 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.

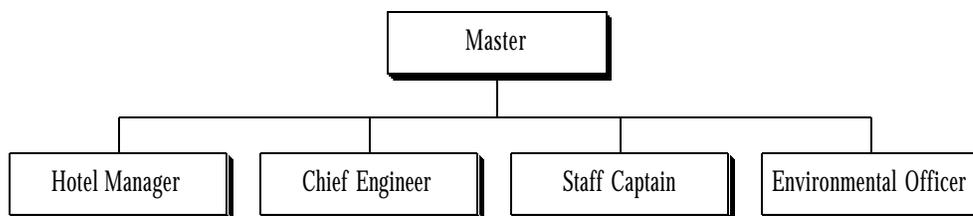
2.0 Vessel Background

2.1 Vessel Environmental Management Organization

The Master of the Splendour reports to the Royal Caribbean International Senior Vice President for Marine Operations. The primary officer responsible for environmental compliance aboard the Splendour 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 Splendour.

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



2.2 Description of the Splendour

The Splendour 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 Oslo, Norway.

The ship was built by Chantiers de L' Atlantique, in St. Nazaire, France; and she was delivered in March 1996. The ship reportedly carries 2074 passengers and 740 crew. The Splendour's registered gross tonnage is 69,130; it has an overall length of 867 ft., a breadth of 105 ft. The ship's propulsion system consists of a twin screw diesel electric with propellers driven by two large electric motors, with five diesel engine driven generators.

2.3 Waste Management Practices

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

Gray Water/Miscellaneous Wastewaters

The gray water/miscellaneous wastewater piping system on board this vessel leads to five (5) gray water collection tanks, two galley tanks (one collecting tank and one larger holding tank; No. 9), and two dedicated laundry water tanks located in the machinery and tank spaces. Ballast (No. 2) tanks are used for overflow when necessary and rinsed three times outside of 12 nautical miles (nm) of land before returning to ballast service.

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 gray water piping without losing vacuum on the black water system.

Based on observations during the audit, interviews and logbook entries since 15 May 2001, gray water/miscellaneous wastewater was discharged only outside 12 nm of land at Sea Condition, outside U.S. waters.

Black Water

Two Marine Sanitation Devices (MSDs) are on board for sewage treatment. The MSDs use "JETS" vacuum pumps (three per collecting tank) which discharge the sewage into four collection tanks, which then discharge into the two "K.G. Hamann" treatment systems. The Marine Sanitation Devices are of a dilution and treatment design with the effluent treated with liquid chlorine prior to discharge into the gray water tanks or overboard. Hamann press filter units are installed to filter debris from the untreated black water that enters the two Hamann treatment systems. All debris collected by the press filter units is incinerated. The treated black water is discharged directly overboard when the vessel is beyond 12 nm of land or into the gray water holding tank. No untreated black water is discharged to sea.

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

Based on observations during the audit, interviews and logbook entries since 15 May 2001, treated black water was discharged only outside 12 nm of land at Sea Condition, outside U.S. waters.

Bilge Water

The oily bilge water pumps discharge into a dirty bilge water holding tank and a separator unit used as a "pre-filter" unit to remove the heavier oil fraction, after which the oily water passes through a two-stage settling tank. The vessel has two "Marinfloc" oily bilge water separating systems, each provided with a 15 ppm oily bilge water discharge monitor/alarm (calibrated to 5 ppm). Each oily water separator discharges into the clean bilge water holding tank. A third 15 ppm meter, also calibrated to 5 ppm oil, is

installed in the overboard discharge line from this clean bilge water holding tank 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 bilges, as well as the pollution prevention equipment associated with bilge water treatment and discharge, were visually examined and found to be in compliance with United States 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 logbook entries since 15 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 dedicated sludge tanks listed in paragraph three of the attachment to the IOPP Certificate. Oily bilge sludge is approved for discharge shore facilities or burning in the auxiliary boiler or incinerator, per the IOPP certificate attachment, Form-A. Based on interviews and Oil Record Book entries since 15 May 2001, oily sludge has only been landed to shoreside facilities.

Solid Waste

The following is a description of the Splendour'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 nonhazardous waste.</p> <p>Liquids drained from the aerosol cans during the depressurization process are captured in a drum, but had not been landed during the audit review period.</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 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.</p> <p>"Sharps" containers from the hospital and those collected from cabins are landed for disposal as biomedical waste.</p>

Waste Stream	Ship's Waste Management Practices
▪ Butane lighters	Butane lighters had not been landed during the audit review period.
▪ Cidex Medical disinfectant	Cidex solution is not used aboard the ship.
▪ Cleaning solutions (acids)	Cleaning solutions are landed for disposal as hazardous waste.
▪ Collected residuals from tank cleaning	Residuals from tank cleaning are disposed of as hazardous waste.
▪ Cooking oil	Cooking oil is collected in designated portable containers and landed for recycling.
▪ Expired chemical products (i.e., expired shelf-life) and discarded chemical products	Expired products are landed for disposal as hazardous waste.
▪ Expired pharmaceuticals	Expired pharmaceuticals are incinerated on-board.
▪ Food waste	Food wastes are normally processed through the pulpers, dewatered, and discharged to sea in Sea Condition. Large food items that cannot be pulped are reduced in size and manually placed in the incinerator.
▪ Glass	Glass is crushed and landed for recycling.
▪ Incinerator ash	Incinerator ash is collected on-board and landed for disposal as nonhazardous waste.
▪ Dry cleaning wastes	Dry cleaning wastes are collected on-board and landed for disposal as hazardous waste.
▪ PCB-containing light ballasts	No PCB-containing light ballast waste stream was observed aboard the ship during the audit.
▪ Medical facility X-ray silver-bearing waste	X-ray silver-bearing waste is collected on-board and processed in the photo shop silver recovery unit to below 5 mg/l of silver. The treated effluent is deposited into the dirty oil tank.
▪ Oil Filters	Oil filters are landed for disposal as nonhazardous waste.
▪ Oily rags	Oily rags are collected on-board and incinerated or landed as nonhazardous waste.
▪ Packing Materials (dunnage)	Packing materials are incinerated on-board or landed as nonhazardous waste.
▪ Paint rags/debris	Paint rags/debris are collected on-board and incinerated.
▪ Paper, cardboard, trash	Paper, cardboard, and trash wastes are collected on-board and incinerated, or landed as dry garbage.
▪ Photo shop paper filters	Paper filters from the photo shop processing equipment are collected and incinerated.
▪ Photo shop silver recovery cartridges	Photo shop silver recovery cartridges are landed for recycling.

Waste Stream	Ship's Waste Management Practices
<ul style="list-style-type: none"> ▪ Photo shop wastewaters 	Photo shop wastewaters are collected on-board and processed in the photo shop silver recovery unit to below 5 mg/l of silver. The treated effluent is deposited into the dirty oil tank.
<ul style="list-style-type: none"> ▪ Plastics 	Light plastics such as plastic bags are incinerated on-board; empty hard plastic containers are landed for disposal as nonhazardous waste.
<ul style="list-style-type: none"> ▪ Potable water filter cartridges 	Potable water filter cartridges are incinerated on-board.
<ul style="list-style-type: none"> ▪ Print shop waste, rags, and debris 	Print shop waste rags and debris are collected on-board and incinerated.
<ul style="list-style-type: none"> ▪ Printer cartridges 	Spent printer cartridges are landed for recycling.
<ul style="list-style-type: none"> ▪ Recyclable cans/metals 	Aluminum and tin cans are crushed on-board and landed for recycling.
<ul style="list-style-type: none"> ▪ Sand from sandblast units 	Sand from sandblast units is landed for disposal as hazardous waste.
<ul style="list-style-type: none"> ▪ Sand (spent filtration media) from freshwater treatment system, pools, jacuzzis 	Pool/Jacuzzi filtration sand is landed as nonhazardous waste.
<ul style="list-style-type: none"> ▪ Smoke detectors 	Smoke detectors containing radioactive elements are landed for return to the vendor.
<ul style="list-style-type: none"> ▪ Spent and expired flares and signaling devices 	No expired flares and signaling devices have been disposed of during the period of review.
<ul style="list-style-type: none"> ▪ Spent fluorescent lamps and bulbs 	Fluorescent lamps and bulbs are collected on-board and landed for recycling.
<ul style="list-style-type: none"> ▪ Spent Marinfloc filtration media 	Spent Marinfloc filtration media is landed for disposal as hazardous waste.
<ul style="list-style-type: none"> ▪ Sterno cans with fluid 	Sterno cans are not used aboard the ship.
<ul style="list-style-type: none"> ▪ Used Paints and Thinners 	Paints and thinners are landed for disposal as hazardous waste. Empty (dry) paint and thinner containers are landed as nonhazardous waste.

2.4 Additional Waste Streams Identified During The Audit

No additional waste streams were identified during the audit.

3.0 AUDIT FINDINGS

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