

# Marine Department Environmental Report 2004

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## ***Director's Message***

The Marine Department is responsible for maritime and navigational safety matters within the waters of Hong Kong. The Department pledges its full support of marine pollution prevention as marine environmental protection is important not only in its own right but also in enhancing Hong Kong's role as one of the major ports in the world.

Being an Associate Member of the International Maritime Organization, Hong Kong is obliged to ensure that all ships within Hong Kong waters comply with international standards with regard to marine pollution prevention.

In 2004, the Department made continuous efforts to promote an environmentally responsible management and contribute to a greener environment by pursuing environmentally friendly operations. Through improving the workplace infrastructure, we were able to reduce pollutants emitted from our workshops and cut down energy consumption. We also set up a Green Housekeeping Working Group (GHWG) to oversee implementation of green housekeeping initiatives in the Department. New measures in energy saving, water conservation, indoor air quality improvement, waste reduction, paper saving, noise nuisance prevention and green procurement of office products were put in place to promote a greener working environment.

In compiling this report, I am pleased to see many of our green initiatives have achieved good results. I take this opportunity to thank my staff members for their efforts in 2004 and am confident that the Marine Department will continue to work towards a better environment in the years to come.

(Tsui Shung-yiu, JP)  
Director of Marine

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### ***Responsibilities and Organizational Structure***

In this report, we will focus on the key areas we have worked in 2004 to help improve the environment and the direct environmental impact of our day-to-day departmental activities.

This report is primarily intended for Hong Kong citizens, our various business partners, other government departments, our own staff and other local and international maritime organizations.

## Overview of the Department

The Marine Department, headed by the Director of Marine, is responsible for all navigational matters in Hong Kong and the safety standards of all classes and types of vessels. Our new mission is "We are one in promoting excellence in marine services".

Staffed by well-qualified and experienced professional and technical officers, we provide a wide spectrum of services which can be broadly classified into five areas, each of which is headed by an Assistant Director:

- Government Fleet
- Multi-lateral Policy
- Planning and Services
- Port Control
- Shipping

The Administration Branch in the departmental headquarters provides administrative support services, human resource management, and finance and accounting support to the operational divisions.

Our headquarters are located at Harbour Building, 38 Pier Road, Central. Other major venues include the Government Dockyard at Stonecutters Island, the Macau Ferry Terminal at Sheung Wan, the China Ferry Terminal at Tsimshatsui and eight Public Cargo Working Areas in different locations.

## Green Management Structure

To promote an environmentally responsible management and enhance green management practice in Marine Department, the Departmental Secretary and the Assistant Department Secretary/Committee and General have been appointed as the Green Manager and the Green Executive respectively.

For all environmental protection matters on a divisional level, the respective Assistant Directors formulate their own green objectives, targets and measures based on the nature of their business. Divisional Environmental Protection Representatives (DEPR) of senior professional level have been appointed to take up the role of coordinator in related matters. For example, the DEPRs will co-ordinate and prepare divisional inputs for compiling the annual departmental Environmental Report.

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### ***Environmental Goal***

In our mission to promote excellence in marine services, we are committed to ensuring that our services and operations are conducted in an environmentally friendly and responsible manner conducive to a cleaner Port of Hong Kong.

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### ***Work Focuses***

Our environmental work focuses on the following areas:

- (a) tightening the management and control of the movement of dangerous goods in Hong Kong waters;
- (b) improving our refuse collection and scavenging services;
- (c) maintaining a world class maritime oil pollution contingency planning arrangement to combat oil spills;
- (d) stepping up prosecutions against offences of marine littering and pollution;
- (e) recommending environmentally friendly seawall designs with wave-absorbing capability in relevant development projects;
- (f) implementing international conventions on marine pollution prevention and enforcing relevant environmental legislation on vessels;
- (g) employing effective management systems to achieve energy savings for operations at Marine Department's ferry terminals, public cargo working areas and Government Dockyard;

- (h) adopting environmentally friendly and efficient designs for facilities and work processes in the Government Dockyard;
- (i) observing the Government's Green Management Policy in our own workplaces to ensure efficient use of natural resources and energy; and
- (j) recommending a proper Marine Traffic Impact Assessment be conducted for every major development project to adequately address all potential marine impacts at each stage of the project implementation. This will not only ensure marine traffic safety in Hong Kong waters but also bring long-term benefit to the environment.

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### ***Environmental Performance in 2004***

The measures and performance relevant to environmental protection in 2004 are as follows :

#### **(a) Proactive Port Control**

##### Vessel Traffic Services

One of the objectives of the Hong Kong Traffic Vessel Services is to protect the fragile marine environment from oil or chemicals caused by marine accidents. The services are provided by our Vessel Traffic Centre (VTC), which monitors all vessels' movements within Hong Kong waters round the clock through a series of radar system. It provides traffic information and warning to navigators so that they can take early actions to avoid collision or running aground.



The Vessel Traffic Centre located inside the Macau Ferry Terminal

In busy waterways, such as Ma Wan Channel and Kwai Chung Container Terminal Basin, vessel traffic is closely monitored by a marine traffic control station. An advance vessel traffic monitoring system is put into operation, which further enhances efficiency of marine traffic management.

### Harbour Patrol

As the enforcement arm of the Marine Department, the Harbour Patrol Section (HPS) operates a fleet of patrol vessels to ensure compliance with marine regulations by ships in Hong Kong waters. For marine pollution prevention, patrol officers regularly bring prosecutions against offenders found littering Hong Kong waters. In 2004, we issued a total of 123 Fixed Penalty Notices to persons who committed the offence of marine littering. In addition two notices of intended prosecution were issued against marine littering in December 2004.

HPS officers visit and examine tankers and local oil barges to ensure that they are anchored in designated anchorages and no illegal transfer or discharge of oil is allowed to take place. Under the Shipping and Port Control Ordinance (Cap. 313), the owner and master of the vessel or any person who discharges oil from a vessel commits an offence.

HPS officers are required to look for any dilapidated vessels or wrecks during their normal patrol. The dilapidated vessels or wrecks may decompose and release harmful substances, which would damage the environment, and leakage of lubrication/fuel oil could cause pollution. In 2004, 94 dilapidated vessels were removed for proper disposal.

In recent years, there has been a number of cases of containers falling overboard from River Trade Cargo Vessels (RTCV). One of the root causes was due to overloading of vessels, thus affecting their stability, and causing containerized cargo to slip off from the RTCV. These fallen containers might be stowed with marine pollutants that would affect the marine environment in the vicinity. To address this issue, HPS launched a number of special operations in 2004 and

prosecuted a total of 133 overloaded vessels. They were required to rectify the unsafe condition forthwith before they were allowed to continue their voyage within the waters of Hong Kong.

### Smoke Emission Control

In 2004, a special survey was carried out in which smoke emission from 447 vessels was observed. Three ferries were found emitting black smoke at shade 3 or above of the Ringlemann Chart, and were immediately referred to our Local Vessels Safety Section for inspection and examination. The owners of these three ferries were required to rectify the situation accordingly.

### Dangerous Goods Control

The carriage of dangerous goods at sea is governed by the Dangerous Goods (Shipping) Regulations (Cap. 295) and the Merchant Shipping (Safety) (Dangerous Goods and Marine Pollutants) Regulation (Cap. 413). The Dangerous Goods and Project Section has continued to carry out random checks on vessels for conveying dangerous goods in the Hong Kong waters. In 2004, a total of 315 vessels were inspected by the Inspection Team of the Section.

## **(b) Efficient Marine Refuse Cleansing Services**

Floating refuse, being the most visible evidence of pollution in the harbour, is difficult to clear because it drifts with current and wind. The Marine Department is determined to keep the harbour clean by engaging effective and efficient marine refuse cleansing services and setting up a special taskforce to clear coastal refuse.

As a result of our continued efforts, refuse totalling 13,874 tonnes, an amount similar to last year's, was scavenged and collected in 2004.





### Joint Special Clean-up Exercise

#### Contracting out Marine Refuse Cleansing Services

The Marine Department has introduced objective-based contracts for floating refuse scavenging and boat refuse collection services. Since 1 July 2002, objective-based contracts have been adopted for services in four typhoon shelters (Cheung Chau, Causeway Bay, Shaueiwan and Tuen Mun). The Department plans to extend objective-based contracts to all marine refuse cleansing services currently manned by our staff in 2005.

Also we have drawn up clear cleanliness evaluation criteria and involved participation of other government departments to evaluate cleanliness of the marine environment and contractors' performance.

During 2004, we strengthened the marine refuse cleansing contractor's fleet to 75 vessels. Together with the seven purpose-built Government scavenging vessels and a contractor for transport of refuse to landfill by trucks, the cleanliness of Hong Kong waters was maintained.

In addition to routine cleansing activities, we contributed our efforts to Team Clean in the following areas:

- ✧ stepping up prosecutions;
- ✧ strengthening public education;
- ✧ enhancing publicity programme, and
- ✧ conducting intensive cleansing programme for identified areas.



Also in collaboration with private sector organizations, promotional activities were carried out with a view to improving cleanliness of Hong Kong waters. These included beach cleanups and trial use of modified cleanup vessels for sea surface cleansing in conjunction with contractor.

We also helped other departments to clean beaches and coastlines by participating in joint operations.

### **(c) Preparedness in Dealing with Oil Spills**

#### Maritime Oil Spill Response Plan



Annual Anti-Oil Pollution Exercise 2004



Hong Kong waters cover a relatively small area with congested waterways. Oil spills can be exceptionally damaging. Any oil spills from ships can be easily washed ashore causing irreparable environmental damage. In this regard, we have developed an effective Maritime Oil Spill Response Plan to co-ordinate departmental actions to tackle oil pollution incidents in Hong Kong waters. The Pollution Control Unit of the Department is on 24-hour standby and its target is to respond on site within two hours of reported oil spillage inside harbour limits. This pledge was 100% achieved in 2004.



MD 58 attending Oil Pollution  
Threat

### Regional Maritime Oil Spill Response Plan

A Regional Maritime Oil Spill Response Plan for the Pearl River Estuary has been developed and jointly employed by the port officials of Guangdong, Guangzhou, Zhuhai, Shenzhen, Macau and Hong Kong. It is intended for combating major oil spills in the Zhujiang Kou (Pearl River Delta) areas and Mirs Bay. It would also enhance regional co-operation in handling oil spill incidents among the neighbouring ports.

We have established an effective communication channel with the neighbouring port administrations to exchange views and experience in dealing with oil spill incidents.

### **(d) International Conventions and Local Legislation**

As an Associate Member of the International Maritime Organisation, the HKSAR is committed to implementing relevant international conventions on marine pollution prevention through the enactment and enforcement of local legislation.

In order to have a cleaner harbour and to improve the sea water quality in the HKSAR, new local legislation will soon be in place to implement Annex IV <sup>Note1</sup> of MARPOL 73/78 <sup>Note2</sup> for the prevention of marine pollution by sewage from ships. The new regulations will

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Note1 Annex IV : Prevention of Pollution by Sewage from Ships (entry into force internationally on 27 September 2003)

Note2 MARPOL 73/78 : International Convention for the Prevention of Marine Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (entry into force internationally on 2 October 1983)

prohibit sea-going ships from discharging untreated sewage in HKSAR waters. Furthermore, another new local legislation is being prepared by the Government to implement Annex VI <sup>Note 3</sup> of MARPOL 73/78 in the HKSAR to prevent ships from polluting the air quality. Actions are being taken to implement Annex I <sup>Note 4</sup> of MARPOL 73/78 to accelerate the phasing out of single hull tankers.

### Port State Control

The Port State Control (PSC) Section carried out inspections on about 15% of foreign ocean going ships entering the Hong Kong waters each year under our commitment with the Toyko Memorandum of Understanding.

PSC inspection helps avoid a sub-standard ship from proceeding to sea by securing her compliance with the relevant convention provisions in safeguarding the safety of crew, passengers and ships, and prevention of pollution.

In 2004, 744 foreign ships entering Hong Kong waters were inspected, out of which 260 deficiencies related to pollution prevention were found and 13 ships were detained due to serious contraventions with MARPOL requirements.

## **(e) Green Initiatives at Terminals and Public Cargo Working Areas**

### Terminals

Energy saving is the focus of the environmental initiatives being pursued at the China Ferry Terminal and the Macau Ferry Terminal. A structured energy saving plan has been introduced and effectively cut down energy consumption in the two terminals by means of reducing unnecessary lighting and installing economical air conditioning systems. Green measures taken in 2004 included replacement of air handling units of the air conditioning system in the China Ferry Terminal; and replacement of energy saving type

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Note 3 Annex VI : Prevention of Air Pollution from Ships (entry into force internationally on 19 May 2005)

Note 4 Amendments to Annex I: Prevention of Pollution by Oil (entry into force internationally on 5 April 2005)

fluorescent tube fittings and installation of photo cell lighting controller in the Macau Ferry Terminal. In compliance with a service-wide green initiative of the Government, the indoor temperature of both terminals has been set to 25.5°C.

### Public Cargo Working Areas (PCWAs)

All cargo operators and staff in PCWAs were reminded to take adequate precautionary measures to eliminate mosquito breeding, particularly when the territory was under the threat of Dengue fever. Patrol to clean up potential mosquito breeding grounds was also stepped up within PCWAs.

## **(f) Going Green at the Government Dockyard**

Going green is the long-term commitment of the Government Dockyard (GD). Over the past years, many initiatives have germinated at all fronts in the operation of the shipyard. They appear in the yard, in the office, to its people, on new ships and in maintenance operations.

### Green Shipyard

With a view to protecting the environment of the shipyard and preserving the ecological environment in the basin, the Government Dockyard reviews its facilities and upgrades them with environmentally friendly products every year. The following works were completed last year for the purpose of environmental protection and workplace improvement:

- (i) an odour treatment and air disinfection system was installed in the Fire Extinguisher Workshop to treat odorous gases emitted from chemicals while handling maintenance work of fire extinguishers. The system could isolate and remove odorous gases and smells effectively, so as to provide safer and healthier



Odour Treatment and Air Disinfection System fitted in the Fire Extinguisher Workshop

working environment to GD staff;

(ii) an exhaust gas extraction system was erected in the Engines Testing Yard to remove exhaust gases emitted during engines testing operation and to provide a cleaner environment to GD staff and workers of contractor; and

(iii) most of the timber fenders alongside the seawall within the Government Dockyard were replaced with plastic fenders in 2004. The new plastic fenders are more durable and shock absorbent, more resistant to corrossions and less susceptible to wear and tear during berthing operations, thus attaining much longer life spans with less maintenance attention than the conventional timber fenders.



Exhaust Gas Extraction System in the Engine Testing Yard



Plastic Fenders erected alongside the Seawall of GD

With a view to achieving the energy saving targets and lowering power consumption, several energy saving measures had been implemented to cut down energy consumption in GD. The electricity consumption in 2004 was successfully reduced by more than 9% with the implementation of the following initiatives:

(i) replacing the lighting systems with energy saving panels in all GD buildings;



- (ii) replacing the old air conditioning plants of the GD canteen and the computer server room;
- (iii) major overhaul of the central air conditioning plant of the GD Administration Building to improve its efficiency, and strengthening it with an adiabatic cooling system to enhance its thermal efficiency;
- (iv) adjusting the thermostat controls of all central air conditioning systems in GD to set the indoor room temperature at not lower than 25.5° C in the summer months;
- (v) adjusting timer devices to shorten the operating hours of all central air conditioning systems in GD;
- (vi) adjusting timer devices to shut down all flood lights inside covered sheds during lunch break and after normal working hours except where overtime work was required; and
- (vii) installing timer devices to automatically shut down all public lightings of GD buildings after office hours.

Floodlights at Roof of  
Covered Shed



### Green Education

Video tapes were played regularly in the public TV system to promote the awareness of staff members and contractors' workers in environmental protection.

### Green New Vessels

When preparing the specification for new building vessel, we ensured that all applicable regulations relating to environmental protection and oil pollution were complied with.



When evaluating tender submissions, a marking scheme was used to check how best the submitted proposals complied with the requirements. Higher points were given to proposals that used environmentally friendly products.

### Green Operation

Each Government vessel was provided with a chart showing her fuel consumption and speed relationships. The most economical speed shown on the chart was recommended to the users. Using this speed, the vessel's fuel consumption and exhaust gas discharged to the atmosphere could be minimized.

### **(g) E-Communication with Customers**

To cope with the fast growing e-commerce environment in the 21st century, Phase 1 of the Marine Department's Electronic Business System (MD eBS) was launched in December 2003 to provide an electronic submission channel for the handling of port formalities documents required by the department. The MD eBS will not only save the shipping community's resources and operating costs involved in preparing paper application and submitting port formalities in person for acquiring the department's service, but also contribute to paper saving as well as a greener environment. A Business Process Re-engineering study for Phase 2 of MD eBS was completed in 2004 recommending a total e-business solution for port formalities documents and public services. The provision of e-permit and e-payment would further reduce the use of papers in our work processes.

In 2004, in a bid to further reduce paper consumption, the Marine Department ceased the production of printed copies of the Department's Handbook and Performance Pledge. Instead, latest information on the Department and our performance pledge was uploaded onto the Department's website.

## **(h) In-house Green Programmes**

We are committed to the Government's Green Management Policy in our daily operations at the offices to ensure efficient use of natural resources and energy. We follow and advocate the principle of "Reduce, Reuse and Recycle" in the consumption of materials.

### Green Housekeeping

A Green Housekeeping Working Group was set up in May 2004. It holds meetings at six-month intervals to oversee and enhance green housekeeping matters in the Department, such as paper and energy saving, water conservation, indoor air quality improvement and green procurement of office products.

### E-Notices and Circulars

We set up a Wide Area Network in 2004 to enable wider use of electronic means of communication. All departmental notices, circulars and circular memoranda were uploaded onto our intranet. Staff are used to reading the e-version or the circulated copy of these notices/circulars and do not keep a personal copy in paper form.

### E-Leave System

MD launched the e-Leave System in August 2004 to process, calculate and record all leave related matters electronically. With this new system, we have moved a major step forward towards a paperless working environment.

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## ***Environmental Targets for 2005***

To make our service and workplace environmentally friendly and responsible as well as to protect the natural resources of the world, we WILL:

- strive our best to prevent and fight against all forms of marine pollution, such as marine refuse, oil spill, smoke emission etc.;
- continue to review the designs and materials used for the existing facilities, e.g. seawall designs, paint/fuel for vessels, or electrical machines etc., so that more new environmentally friendly technologies, designs and products will be adopted for delivering our services;
- continue to encourage our staff and appeal for their greater support for adopting more green measures and participating more in green activities initiated by the department or the community;
- continue to explore new means and pay particular attention to a wider use of electronic measures to minimize the usage of paper and energy;
- set up a Green Bulletin Board in the intranet to provide all staff members with a platform to know more about the department's green issues and to share green information as well as to enhance staff's interests and participation in achieving a greener working environment;
- launch the Energy Warden Scheme to step up efforts in reducing energy consumption by appointing energy wardens to ensure strict implementation of energy saving measures;
- ensure that the indoor room temperature of all the premises of the Department is set at 25.5°C in summer months to reduce energy consumption;
- review the need for production of printed copies of our departmental newsletter, i.e. Hong Kong Maritime News and Scuttle Butt with a view to keeping the number of printed publications and the usage of paper to the absolute minimum; and
- develop an e-booking system for the departmental conference rooms so that use of the booking register in paper mode can be stopped.

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## ***Information and Suggestions***

If you have any enquiries or suggestions, please write to our Green Manager (Departmental Secretary) at Marine Department, 22/F, Harbour Building, 38 Pier Road, Hong Kong. You may also get in touch with us by e-mail at [mdenquiry@mardep.gov.hk](mailto:mdenquiry@mardep.gov.hk) or by fax on [2541 7194](tel:25417194).

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