



BLUE WATERS

Newsletter

On Marine Environment Protection

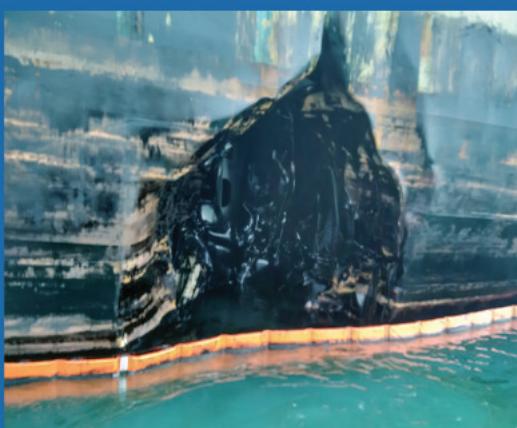
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From the Director General's Desk



From time immemorial, oceans around the world have been a source of livelihood and development for mankind. Therefore, while harnessing this nature's gift, it is important that equilibrium is maintained between what we extract and what can be replenished by nature. Sustainable development is a challenging task for the world community, particularly for developing countries.

Balancing development based on maritime trade and commerce with preservation and protection of the marine environment and prevention and control of marine pollution is within the preview of mankind and several initiatives are at hand, world over, to ensure that all forms of marine pollution are curbed.

The International Maritime Organisation, a specialised agency of the United Nations, is entrusted with the responsibility for the safety and security of shipping and prevention of marine pollution by ships. A number of instruments have been brought into force by the IMO that facilitate preservation and protection of marine environment and prevention and control of marine pollution. The Indian Coast Guard and Director General Shipping are the principal arms of the Government of India for formulating and enforcing laws and regulations in the maritime zones of India, including those related to marine pollution. Our national oil spill disaster contingency plan has stood the test of time, and incidents, and we continue to enhance our preparedness by way of training and exercises involving all stakeholders.

The Government of India's clean India campaign, which is being run as 'Swachh Bharat Abhiyan' is a positive step towards a clean environment. Alongside the port, shipping and oil agencies, the Indian Coast Guard is also making its own unique contribution to the campaign by extending it to the maritime and coastal domain through the 'Swachh Sagar Abhiyan'. The numerous ongoing initiatives of the Coast Guard include nationwide coastal cleanup campaigns, community awareness drives, tree plantation programmes, etc. It is rightly envisaged, this goal can only be achieved by adopting the norm of 'Swachhata Hi Seva' through collective responsibility. I would, therefore, appeal to all the readers to contribute their best in the cleanliness drive, so that we can leave a legacy of Clean India for our future generations.

I wish all the readers and stakeholders a 'Happy Reading'

Vayam Rakshamah. Jai Hind.

A handwritten signature in red ink, appearing to read "Rajendra Singh".

(Rajendra Singh)
Director General
Indian Coast Guard

Editorial

Marine environment has been most neglected, primarily as it is away from limelight of media and attracts attention only during a major incident at sea. However, with growing awareness and concern towards preservation of environment and climate change, a considerable focus has also been given to the marine environment. International Maritime Organization has been making all-out efforts for improving the marine environment, bringing in new instruments and amending provisions to strengthen regulations.

Implementation of legal provision in the vast ocean is also a difficult task as maintaining surveillance needs substantial amount of burden on the national exchequer. Therefore, the maritime community has to come together, as they are morally responsible to the maritime domain that they operate in, for preservation and protection of the marine environment, and prevention and control of pollution. Thus every mariner needs to ensure apprising the law enforcement agencies, on sighting of any incident at sea.

This edition highlights ballast water implications in Indian waters and Plastic pollution in marine environment. Other articles emphasize on the cleaner coast through 'Swachh Sagar Abhiyan'. Collision between MT Dawn Kanchipuram with MT BW Maple off Ennore leading to launch of Pollution Response operation has been considered for India Watch.

A warm thanks to all contributors to this edition of "Blue Waters" and valuable contributions in future, from stakeholders towards this newsletter to marine environment protection are solicited.

(Bhim Singh Kothari)
Commandant
Director (FE)

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ARTICLES

BALLAST WATER IMPLICATIONS IN INDIAN WATERS

By Comdt Sunny Deo, Indian Coast Guard Ship Sagar

Introduction

Water has been conventionally used as ballast to stabilise ships at sea. The ballast literally means any material used to balance an object to maintain its buoyancy. A ship needs ballast for stability and maneuverability, when she is empty or is partially loaded. Earlier, most of the ships were wooden and sailed on dry ballast. With the introduction of steel hulled vessels and water as the most economic form of ballast is widely used. The ballast will have to be discharged subsequently when the ship is "Loaded or in Cargo". The water quality and biological content of ballast water may vary depending upon the ship's navigational route, whether it is in river or sea.

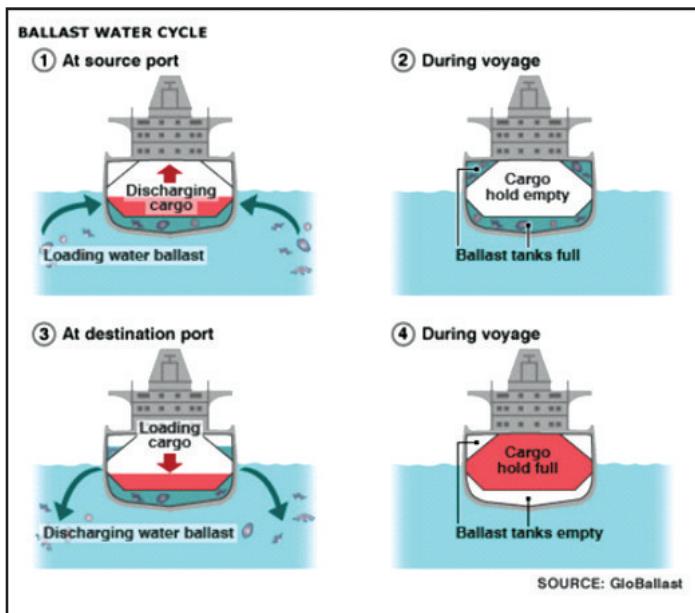


Fig 1. Ballast Water Cycle

Ballast water is pumped to maintain safe and efficient operating conditions of ship throughout a

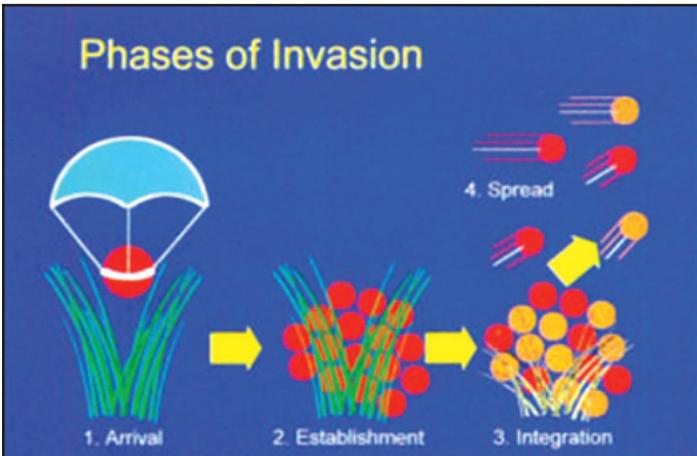


Fig 2. Phases of invasion

voyage, but it also poses a serious ecological, economic and health threat through the transfer of Invasive Aquatic Species (IAS) inadvertently carried in it. Ballast water may contain a variety of organisms including bacteria, viruses, the adult and larval stages of the many marine, coastal plants and animals. While the vast majority of such organisms do not survive to the point when the ballast is discharged, some may survive and thrive in their new environment. These 'non-native species, if they become established, can have a serious ecological, economic and public health impact on the receiving environment.

The ability of planktons, microbes and pathogens pumped into ship's ballast system to survive relatively long voyages, drifting in the ballast water till the end of the voyage was identified as early as 1897. Some scholars have described a ship's ballast tank as 'floating aquariums'. It is said that there can be up to 10,000 different species getting a free ride in ballast tanks of ships in global transport. Mostly, the dark and toxic conditions inside the tank do not support photosynthesis and majority of these organisms end up their life inside the tank itself. Yet, some organisms

like the holoplankton, meroplankton or tycho plankton, Chinese Mitten Crabs, European Green Crabs, Mussels, Whelks, American Jack Knife Clam, Comb Jelly fish and Vibrio Cholerae have been reported to have survived in ballast water and multiplied at an alarming rate causing considerable disruption to the port environment if the aquatic conditions are hospitable. These organisms may disrupt the physical condition of water in ports, affect fisheries and causes serious health and sanitation issues.



Fig 3. Ballast Water - Worst Invaders

Therefore, pollution of port environment by the introduction of harmful aquatic organisms, and pathogens through ship's ballast water as a vector has been identified as one of the greatest threats to the world's oceans. Also, the introduction of 'Non-Native Species' into a foreign ecosystem is considered as a major threat for biodiversity. The ballast water discharge is required to be controlled in ports because of three major reasons. First, it may cause port pollution, second, it may disrupt biodiversity and third, it may have negative impacts on human health.

International Concern

The inadvertent transfer of harmful aquatic organisms and pathogens in the ballast water of ships has been determined to have caused a significant adverse impact to many of the world's coastal regions. In 1988, Canada and Australia first reported on invasive marine species in ballast waters. In response, in 1993, IMO adopted Resolution A. 774(18) 'Guidelines for preventing the introduction of unwanted aquatic organism and pathogens from

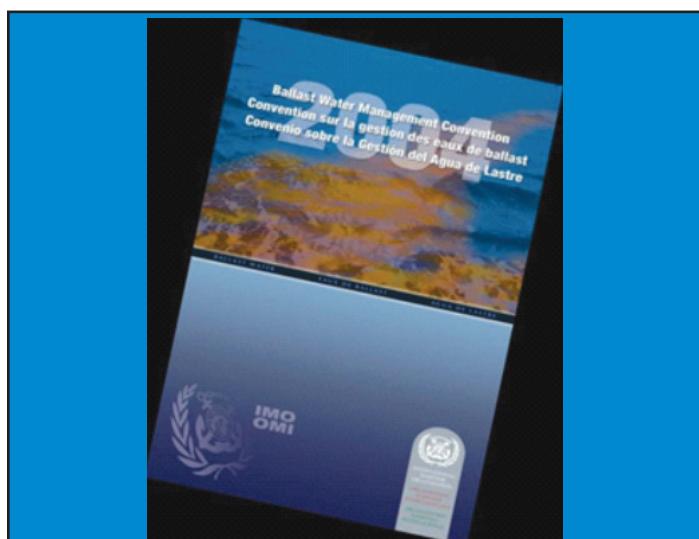


Fig 4. Ballast Water Management Convention 2004

ship's ballast water and sediments discharges'. Later, the international maritime community, under the guidance of IMO developed 'International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004', (Ballast Water Management Convention), which was adopted at the diplomatic conference held at IMO Headquarters in London on 13 Feb 2004. This convention is aimed at preventing the introduction of unwanted aquatic organisms and pathogens through the discharge of ballast water and sediments. India is signatory of the convention and the convention will enter into force on 08 Sep 2017.

India

India is endowed with a coastline of 7516 km which includes 12 major ports and more than 203 non major ports along the coastline and sea-islands. The ports are under rapid expansion with increased volume of trade especially, the oil imports. This may possibly introduce many more invasive species capable of polluting the port waters. Several ecologically important habitats surrounding the Indian coastline which include coral reefs, mangroves, nesting grounds of turtles and horseshoe crabs and spawning and breeding grounds of other commercially important fish and shellfish. The major coral formations are around the Lakshadweep, Andaman and Nicobar Islands, Gulf of Kutch and Gulf of Mannar.

The IMO had conducted a pilot study in India through GLOBALLAST programme based on trading patterns in Mumbai and Jawaharlal Nehru Ports on the risk assessment of biological invasions through the ship's ballast. India's tropical or subtropical climate and its estuarine and lagoon ports favour the spread of water-borne pathogens from ship's ballast water. Therefore, urgent attention is required to control the ballast water pollution in ports. Also, if secondary invasions spread to highly sensitive coral reefs of Andaman and Nicobar and Lakshadweep islands, the environmental threats may be beyond human predictions.

The Indian Ocean is one of the busiest regions with a large shipping traffic. It has major oil tanker routes through which about 1000 million tonnes of crude are transported annually from the Arabian Gulf. This accounts for over 40% of the global oil flow. Over the last decade the growth of the Indian economy has taken a spurt in shipping activity and

development, and this trend is expected to continue over the next few decades.



Fig 5. Discharging of Ballast water in harbour

Faster ships and consequent reduction in travel time between ports increase the likelihood of introduction and survivability of potentially damaging non indigenous Harmful Aquatic Organism and Parasites (HAOP). The toxic effects of the harmful algae can lead to fatality in human beings through Paralytic Shellfish Poisoning (PSP) and cause health concerns through Diarrheatic Shellfish Poisoning (DSP). Human death due to PSP has been recorded in India. India being one of the major maritime countries is susceptible for bio-invasion from the rest of the world oceans and hence warrants a close watch.

Unlike oil spills and other marine pollution caused by shipping, the exotic organisms and marine species once introduced cannot be cleaned up or absorbed in to the oceans. Once introduced, they can be virtually impossible to eliminate and in the meantime may cause havoc. A number of cases of Paralytic Shellfish Poisoning (PSP) have been reported from 1981 along the south-west coast of India; as such a case was massive fish and bivalve mortality in Trivandrum and Kollam (Southern Kerala) in September 2004.

Ballast Water Management Convention and India

India has introduced Merchant Shipping (Amendment) Bill, 2015 on 29 Apr 2015 and approved accession to the International Convention for the Control and Management of Ship's Ballast Water and Sediments, 2004 (Ballast Water Management Convention) of International Maritime Organization (IMO).

The Convention requires all new ships to implement an approved Ballast Water and Sediments Management Plan. All new ships will also have to carry a Ballast Water Record Book and follow ballast water management procedures to a given standard. Existing ships will be required to do the same but after a phase-in period. Ships are required to be surveyed and certified and may also be inspected by Port State Control officers who can verify that the ship has a valid certificate. They can also inspect the Ballast Water Record Book and in some situations, sample the ballast water.



Fig 7. Water sediment sample analysis

and above on international voyages are required to possess an International Ballast Water Management Certificate. Indian ships below 400 GT plying within the territorial waters of India shall be issued an Indian Ballast Water Management Certificate. Ships which are not designed/constructed to carry ballast water, warships, naval auxiliary or other government-owned non-commercial ships are exempted.

Port authorities will be statutorily obliged to provide ballast water sediment reception facilities. Indian and foreign Ships of 400 GT and above are required to carry onboard a Ballast Water Management Plan. Ships of 400 GT above shall also be subject to survey and inspection. During inspection sample of ballast water can be analyzed (but this

D-2 Regulation - Ballast Water Performance Standard		
The implementation deadline for BWMS, according to IMO Resolution A.1088(28) and MEPC 69		
Keel laid	Ballast water capacity	Implementation deadline for BWMS
Before 8 September 2017	All vessels (*)	By the first renewal survey associated with the IOPP Certificate after 8 September 2017
On or after 8 September 2017		By the completion date of the construction

(*) : Surveys and certifications are required only for vessels of 400GT or more, excluding Floating platforms, FSU and FPSO.

Fig 6. Ballast Water Performance Standard

The Merchant Shipping Amendment Bill, 2015 incorporates into the Merchant Shipping Act, 1958 the enabling provisions required for implementing the Convention. Indian ships of 400 Gross Tonnage (GT)

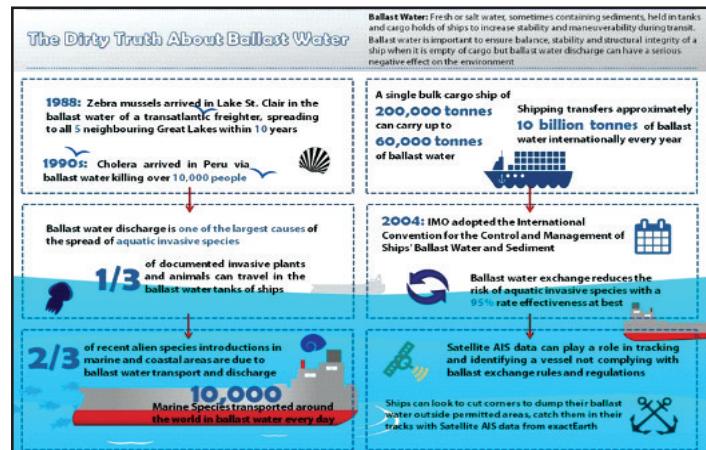


Fig 8. Dirty truth about ballast water

sample analyzing process should not cause undue delay in the operation/departure of the ship). If a ship complies with the convention but is still detained/delayed for inspection without any reasonable cause, it will be eligible for compensation/ damages.

PLASTIC POLLUTION IN MARINE ENVIRONMENT

Indian Coast Guard Ship Sarang Team

Introduction.

The word **plastic** is derived from word *plastos* meaning a material which is “capable of being shaped or molded”. In earlier times, goods were packed in wooden crates and other materials. However, on discovery of plastics which is light and can be shaped into convenient models, usage of plastic became handy for various manufacturing industry to stock/store materials in the form of containers of small quantity of oils, paints and lubricants and various other goods/materials. Further, after its usage, it was realized that the usage of plastic container onboard occupy a large amount of space, hence it became a necessity to discard them. The best possible way of discarding was throwing it overboard. However, these plastics being non – perishable in nature pose severe problems to marine fauna.

Increase in micro-plastics in the marine food chain along with many highly toxic chemical pollutants that accumulate in plastics poses serious environmental threats. They also accumulate in larger fragmented pieces of plastic called nurdles. In 1960s, the litters were observed in the guts of seabirds, and since then have been found in increasing concentration. In 2009, it was estimated that 10% of modern land waste was plastics; meanwhile, 50-80% of debris in marine areas are plastic.



Fig 9. Marine animals affected by plastic waste

Plastic Pollution.

Plastics are categorized into micro, meso, macro debris based on size. Plastic pollution can unfavorably affect lands, waterways and oceans. Living organisms, particularly marine animals, can also be affected through entanglement, direct ingestion of plastic waste, or through exposure to chemicals within plastics that cause interruptions in biological functions. Humans are also affected by plastic pollution, such as through the disruption of the thyroid hormone levels. Plastic reduction efforts have occurred in some areas in attempts to reduce plastic consumption and pollution and promote plastic recycling.

Ocean based sources of plastic pollution.

Almost 90% of plastic debris that pollutes oceanic waters comes from ocean-based sources. Merchant ships expel cargo, sewage, used medical kits, plastics bottles, carry bags and other types of waste that contain plastic into the ocean. Naval and research vessels also eject waste and military equipment that are deemed unnecessary. Pleasure crafts also release fishing gear and other types of waste. These different ships do not have enough storage space to keep these pollutants on the ship,

and thus they are discarded. These plastic items can also accidentally end up in the water through negligent handling. The largest ocean-based source of plastic pollution is discarded fishing gear, responsible for up to 90% of plastic debris in some areas. This equipment includes a variety of traps and nets.



Fig 10. Plastic debris polluting ocean water

Land-based sources of ocean plastic pollution.

A little over 10% of plastic debris in ocean water comes from land-based sources, responsible for 0.8 million tons every year. A source that has caused concern is landfills. Most waste in the form of plastic in landfills are single-use items such as packaging. Discarding plastics this way leads to accumulation. Although disposing of plastic waste in landfills has less of a gas emission risk than disposal through incineration. Another concern is that the liners acting as protective layers between the landfill and environment can break, thus leaking toxins and contaminating the nearby soil and water. Landfills located near oceans often contribute to ocean debris because content is easily swept up and transported to the sea by wind or small waterways like rivers and streams. Marine debris can also result from sewage water that



Fig 11. Disposing of Plastic waste in landfills

has not been efficiently treated, which is eventually transported to the ocean through rivers. Plastic items that have been improperly discarded can also be carried to oceans through storm waters.

Effects on Animals.

Plastic pollution has the potential to poison animals, which can then adversely affect human food supplies. Plastic pollution has been described as being highly detrimental to large marine mammals, and posed as “single greatest threat” to them. Some marine species, such as sea turtles, have been found to contain large proportions of plastics in their stomach. When this occurs, the animal typically starves, because the plastic blocks the animal’s



Fig 12. Effect of Marine Pollution on marine mammals

digestive tract. Marine mammals sometimes become entangled in plastic products such as nets, which can harm or kill them.

Marine animals.

Sea turtles are affected by plastic pollution. Some species are consumers of jelly fish, but often mistake plastic bags for their natural prey. This plastic debris can kill the sea turtle by obstructing the oesophagus. In case of whales also, large amounts of plastics have been found in the stomachs of beached whales. Some of the tiniest bits of plastic are being consumed by small fish, in a part of the pelagic zone in the ocean called the mesopelagic zone, which is 200 to 1000 metres below the ocean surface, and completely dark. Not much is known about these fish, other than that there are many of them. They hide in the darkness of the ocean, avoiding predators and then swimming to the ocean's surface at night to feed. Plastics found in the stomachs of these fish were collected during Malaspina's circumnavigation, a research project that studies the impact of global change on the oceans. The most popular mesopelagic fish is the lantern fish. It resides in the central ocean gyres, a large system of rotating ocean currents. Since lantern fish serve as a primary food source for the fish that

consumers purchase, including tuna and swordfish, the plastics they ingest become part of the food chain. The lantern fish is one of the main bait fish in the ocean, and it eats large amounts of plastic fragments, which in turn will not make them nutritious enough for other fish to consume.

Image depicting Growth of Plastic in near future Pollution Reduction Efforts.

As per IMO, Garbage from ships can be as deadly to marine life as oil or chemicals. The greatest danger comes from plastic, which can float for years. Fish and marine mammals can in some cases mistake plastics for food and they gets trapped in plastic ropes, nets, bags and other items. It is clear that large amount of garbage washed up on beaches comes from people on shore - holiday makers, fishermen who throw unwanted refuse over the side or from towns and cities that dump waste into rivers or the sea. However, most of the garbage (including plastics) comes from passing ships which find it convenient to throw garbage overboard rather than dispose of it in ports. Persuading people not to use the oceans as a dumping yard is a matter of education. The old idea that the sea can cope with anything still prevails to some extent but it also involves much more vigorous enforcement of regulations for prevention of pollution by ships is given in Annex V of MARPOL 73/78.

Regulation 3 of Annex V, MARPOL 73/78 enforces regulation on how plastics in the form of garbage can be disposed into the sea. Plastics includes and are not limited to synthetic ropes, synthetic fishing nets, plastic garbage bags and residual of incinerated plastic waste which may contain toxic or heavy metal residues is also prohibited by this regulation. The garbage should be disposed into sea as far as



Fig 13. Sea turtles affected by plastic pollution

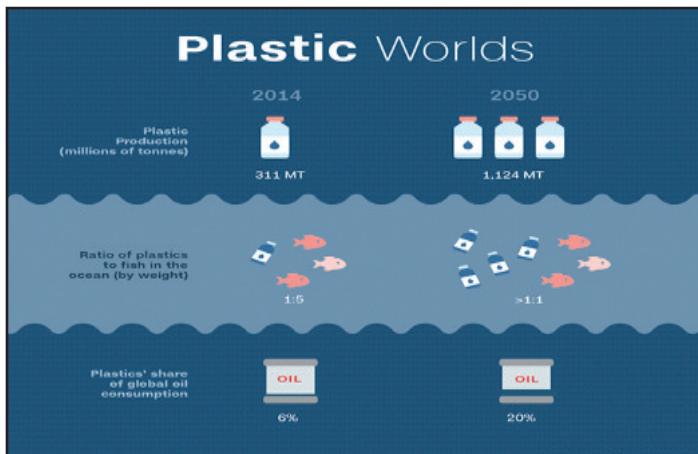


Fig 14. Increasing usage of Plastic products

practicable only in case where distance from nearest land is less than:-

- 25 nm for drainage, lining and packing material which floats.
- 12 nm for food wastes and all other garbage including paper products, glass, metals, bottles, crockery and similar refuse. It may only be permitted when the garbage has passed through incinerator or grinder. But, it should be prohibited if distance is less than 3nm from nearest land.
- When garbage is mixed with other discharges which are having different disposal or discharge regulations, more stringent regulation shall apply as mentioned in Regulation 4 of MARPOL 73/78 Annex V.

Few exceptions in disposal of garbage are acceptable:-

- Disposal of garbage which is necessary for the purpose of securing the safety of a ship and for those who are onboard or for safety of life at sea.
- Escape of garbage resulting from damage to a ship provided all reasonable precautions have been taken for prevention.

- The accidental loss of synthetic fishing nets, provided precautions have been taken to prevent such loss.
- Various provisions of facilities for reception of Garbage at ports and terminals have been taken by Government without causing delay to the ships and as per their requirement and needs. According to Regulation 9 of MARPOL 73/78 Annex V, a ship has to take certain measures for garbage disposal base on its characteristics by means of Placards, Garbage Management Plans and Garbage Record Keeping as follows:-

Ship's Characteristics	Measures to be taken to prevent Marine Pollution
$\geq 12\text{m}$	Display Placards notifying disposal requirements in working language.
Gross Tonnage ≥ 400 Tons Authorized to Carry > 15 Persons	Garbage Management Plans for collecting, storing, processing and disposal of garbage.

For keeping a record of Garbage, a garbage record book should be kept onboard ship which contains ship details including IMO number, tonnage, date and time of discharge, position of ship, category of garbage, estimated amount of discharge, signature of responsible officer, time when garbage was incinerated, circumstance of disposal, escape or loss and general remarks.

Apart from ships, efforts to reduce usage of plastics and promoting plastic recycling are also

important in various other places. Some supermarkets charge their customers for plastic bags, and in some places more efficient reusable or biodegradable materials are being used in place of plastics. Some communities and businesses have put a ban on some commonly used plastic items, such as bottled water and plastic bags.

Biodegradable and degradable plastics.

Use of biodegradable plastics has many advantages and disadvantages. Biodegradables are biopolymers that degrade in industrial composters. Biodegradables do not degrade as efficiently in domestic composters, and during this slower process, methane gas may be emitted. There are also other types of degradable materials that are not considered to be biopolymers, because they are oil-based, similar to other conventional plastics. These plastics are made to be more degradable through the use of different additives, which help them degrade when exposed to UV rays or other physical stressors. Although biodegradable and degradable plastics have helped reduce plastic pollution, there are some drawbacks. One issue concerning both types of plastics is that they do not break down very efficiently in natural environments. There, degradable plastics that are oil-based may break down into smaller fractions, at which point they do not degrade further.

Conclusion.

Use of Plastic on maritime ecology has a drastic effect. Around 80 percent of marine litter actually originates on land - either swept in from the coastline or carried to rivers from the streets during heavy rain via storm drains and sewer overflows and hence it should be controlled at the preliminary stages of disposal. In few countries landfill tax creates an

incentive to choose to recycle plastics rather than contain them in landfills, by making the latter more expensive. Although, the DG shipping, the primary maritime administrator in India, is responsible through its offices for enforcing the Merchant Shipping (Prevention and Pollution Garbage) Rules 2010, there are hardly any suitable efforts to educate and enforce the Rules to prevent Plastics Pollution at Sea. The sight of plastics filled sea throwing up plastics ashore during monsoon months clearly indicates the amount of plastics entering the sea and it does not augur well for the marine environment protection efforts. It is time that suitable stringent methods are undertaken both by the land based Pollution Control Boards and the DG Shipping to prevent the menace and control, the ever increasing inputs of plastics into the sea.

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MARPOL 73/78 Annex V.
<http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Pages/Default.aspx>

EVENT

SPECIAL
COASTAL CLEANUP DRIVE

Indian Coast Guard (ICG) is celebrating its 40th raising day in 2017. As part of its awareness programme towards Marine Environment, ICG undertook a special Coastal Cleanup Programme across all nine Coastal States and four Union Territories on 04 Feb 17.



Fig 15. Panorama of Coastal Cleanup Programme across India

Coast Guard being the Central Coordinating Authority for marine pollution control undertakes such drives to generate awareness amongst the masses. ICG has been regularly conducting coastal cleanup from time to time since its inception. The State Administration, college/ school children and various volunteer organizations have been supporting Indian Coast Guard in this noble drive over the years.

Further, ICG has been appealing from time to time, to all the stakeholders of marine environment



Fig 16. Panorama of Coastal Cleanup Programme across India

especially ports and oil handling/ exploration agencies to also undertake cleanup in their area of operations so as to preserve the marine environment.

During the special drive on 04 Feb 17, an overwhelming support was provided to the Indian Coast Guard by the State Administration, Ports, Oil Handling Agencies, College/ School children in all the Coastal States and Union Territories.

Further, Indian Coast Guard has also been coordinating International Coastal Cleanup day in India, which is conducted in various parts of the world in Sep every year under the aegis of United Nations Environment Programme (UNEP)

and South Asian Cooperative Environment Programme (SACEP) in South Asian Region. Indian Coast Guard launched '**Swachh Sagar Abhiyan**' taking the Government of India drive of '**Swachh Bharat Abhiyan**' to Maritime Zone of India.

22nd National Oil Spill Disaster Contingency Plan and Preparedness Meeting

22nd National Oil Spill Disaster Contingency Plan (NOS-DCP) and preparedness meeting was held at India International Centre, New Delhi on 10 Aug 17. The meeting was chaired by the Director General Indian Coast Guard, Director General Rajendra Singh, PTM, TM and was attended by 102 representatives from various Ministries, Central Govt. Organisations, Coastal States & Union Territories, Major & non Major Ports, Oil Handling Agencies and Oil Installations onshore.



Fig 17. DGICG, Chairman NOS-DCP addressing Stake holders during 22nd NOS-DCP meeting

During the inaugural address, Chairman NOS-DCP expressed his concern over the pollution existing in the marine areas and emphasized the need to protect and preserve marine environment



Fig 18. DGICG, Chairman NOS-DCP Interaction with stakeholders

and prevent and control marine pollution. He appreciated efforts of all the agencies in combating oil spill off Kamarajar Port, Ennore in Jan 17. He highlighted that timely submission of claims by concerned parties facilitated recovery of expenses for cleanup from the polluter to the tune of about Nine Crore rupees. However, expressing his concerns on limited usage of safety gear by personnel engaged in the shoreline cleanup operations, he emphasised that appropriate action needs to be ensured in future.

Chairman requested for introspection by concerned agencies for the incident of *MV Qing* grounded in Mormugao port on 29 June 2016, with approximately 350 tons of bunker fuel which continues to pose an imminent threat of oil spill and damage to the marine environment, as the fuel is yet to be removed from the wreck despite a delay of more than one year since her grounding.

Need for early preparation of Contingency plan by coastal states, major ports, non-major ports, oil handling agencies and oil installations onshore and provisioning of pollution response equipment as per National Disaster Contingency Plan (NOS-DCP)

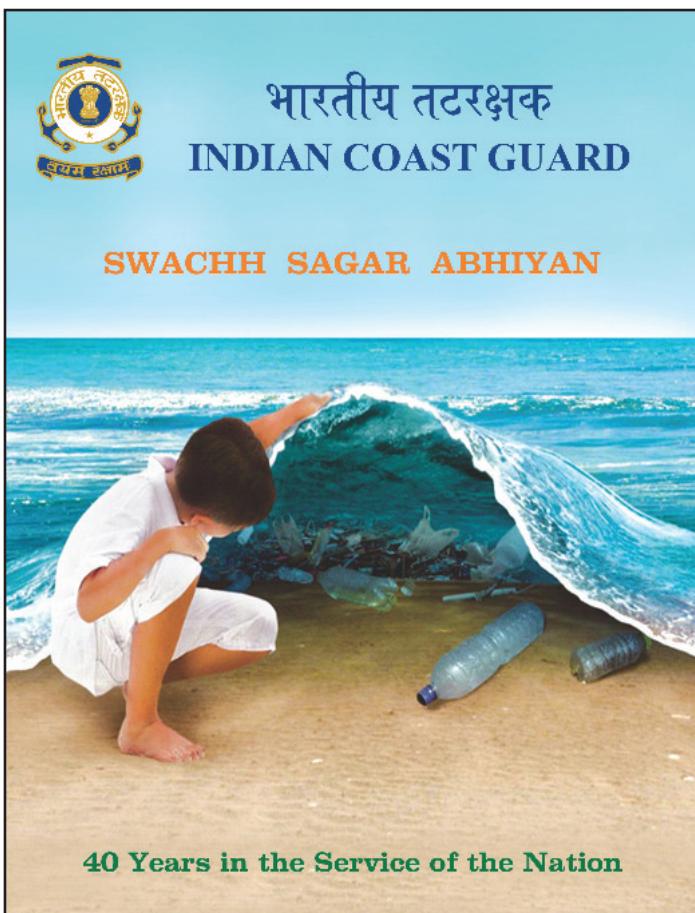


Photo Source : <https://blacksunmatrix.wordpress.com/2013/07/22/a-clean-ocean/comment-page-1/#comment-122>

*Fig 19. Swachh Sagar Abhiyan
an ICG initiative*

were also highlighted. Lastly, he expressed his gratitude for the support for 'Swachh Sagar Abhiyan' launched by ICG in Apr 2016 with an objective to extend Govt. of India initiative of 'Swachh Bharat Abhiyan' to maritime zones of India. The goal of 'Swachh Bharat Abhiyan' is to be achieved by 2nd Oct 2019 as set by Govt. of India. All stakeholders seconded the goal of 'Swachh Sagar Abhiyan' as 15 Aug 2022, the day when the country will be celebrating 75th year of Independence.

The inaugural address was followed by an overview of NOS-DCP activities since the last meeting held in Aug 2016 by Commandant Bhim Singh Kothari, Director (Environment). The presentation highlighted the need for early



Fig 20. Overview of NOS-DCP activities by Director (Fisheries & Environment)

submission of Contingency Plans and provisioning of Pollution Response equipment at each facility to meet the obligation of NOS-DCP. Activation of online submission for Annual returns, reports on Joint Inspections and uploading of facility contingency plans with stakeholder's login through ICG Webpage, training and cleanup operation undertaken were also highlighted in the presentation.

A Presentation on 'Combating Oil Spill in Port Limits' was delivered by Capt. AK Gupta, General Manager (MS), Kamarajar Port Ltd, Chennai.



*Fig 21. Presentation by Capt AK Gupta,
GM(MS), Kamarajar Port, Chennai.*



*Fig 22. Presentation by Thiru R Kannan
Joint Chief Environmental Engineer, TNPCB, Chennai.*

A Presentation on 'Shoreline Cleanup – Way forward' was also delivered by Mr Thiru R. Kannan, Joint Chief Environmental Engineer, Tamil Nadu Pollution Control Board, Chennai.



Fig 23. Release of "National Contact Directory for Marine Oil Spill Response" by DGICG, Chairman NOS-DCP

The Chairman released the "National Contact Directory for Marine Oil Spill Response" and highlighted the salient features of the directory.



Fig 24. Interactive session

In the concluding remarks, the Chairman appreciated active participation by sharing of professional knowledge from all stakeholders during the proceedings. He also emphasised on lessons learnt and recommendations made by the presenters, which need to be incorporated for future operations. He emphasised that cohesiveness amongst stakeholders, frequent interaction and exercises at various levels for sharing of professional knowledge will enhance the robustness of the national system, for meeting the future challenges of pollution response.



Fig 25. Interactive session



Fig 26. Closing address by DGICG, Chairman NOS-DCP

Lastly, the Chairman called upon all stakeholders for pledging to work together to make our marine environment pollution free by the 75th anniversary of our independence on 15th August 2022.

IMO NEWS

New Global Project to address Bioinvasions via Ships' hulls

A new global project to help protect marine ecosystems from the negative effects of invasive aquatic species has been given the go-ahead for preparation.



Source: www.imo.org

Fig 27. Protection from invasive aquatic species

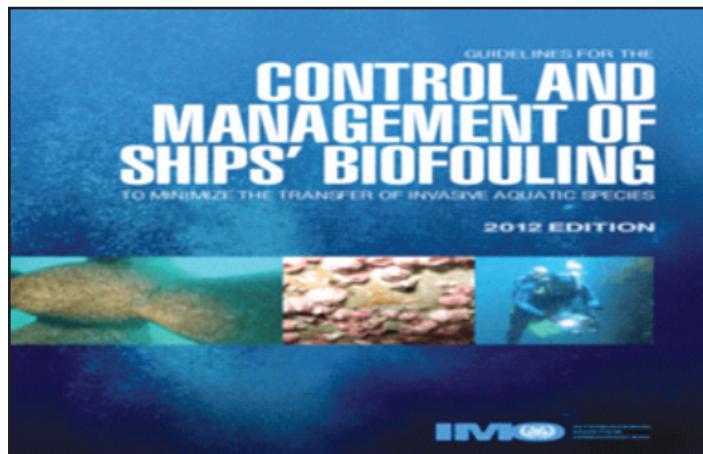


Fig 28. IMO Guidelines on Biofouling

The Glo-Fouling Partnerships project is a collaboration between the Global Environment Facility (GEF), the United Nations Development Programme (UNDP) and the International Maritime Organization (IMO). The project will focus on the implementation of the IMO Guidelines for the control and management of ships' biofouling, which provide guidance on how biofouling should be controlled and managed to reduce the transfer of invasive aquatic species.

International Maritime Prize for 2016 goes to Koji Sekimizu, Former IMO Secretary-General

The prestigious International Maritime Prize for 2016 is to be awarded to former Secretary General



Source: www.imo.org

Fig 29. Mr Koji Sekimizu, IMO Secretary-General Emeritus



Source: www.imo.org

Fig 30. IMO International Maritime Prize

of the International Maritime Organization (IMO), Mr. Koji Sekimizu, for his contribution to the work of IMO over many years.

The Council unanimously decided to award the Prize to Mr. Sekimizu, IMO Secretary-General Emeritus, in recognition of his invaluable contribution to the work and objectives of the Organization and the international maritime community as a whole.

Sekimizu held a long and distinguished career with the Organization, culminating in his four-year stewardship as Secretary-General from 2012 to 2016.

50 years working together against Oil Pollution from Ships

The International Maritime Organization (IMO), the International Tanker Owners Pollution Federation Ltd (ITOPF) and the International Oil Pollution Compensation Funds (IOPC Funds) have launched an exhibition to mark 50 years of successful cooperation between government and industry to achieve a dramatic and sustained reduction in major oil spills from ships; to establish effective systems

for preparedness and response if there is an incident and to create a comprehensive mechanism for providing compensation to those affected.

*Fig 31. Exhibition to reduce major oil spill from ships launched by ITOPF AND IOPC Fund*

International Maritime Organisation Forthcoming Meetings

Date	Meeting Title
11 Sep 17	Sub-committee on carriage of cargoes and containers (4 th session)
25 Sep 17	Sub-committee on implementation of IMO Instruments (III) – 4 th session
17 Oct 17	40 th session of the IMSO advisory committee
9 Oct 17	39 th consultative meeting of contracting parties (London Convention 1972) 12 th meeting of contracting parties (London Protocol 1996)
30 Oct 17	IOPC Funds
23 Nov 17	Council – 29 th Extraordinary session
27 Nov 17	Assembly – 30 th session
07 Dec 17	Council – 119 th session

REPORTS

INDIA WATCH

Pollution Response Operation off Chennai

Incident

On 28 Jan 17 at about 0345 hrs, inbound vessel MT Dawn Kanchipuram collided with outbound vessel MT BW Maple near fairway buoy off Kamarajar Port Limited (KPL). MT Dawn Kanchipuram sustained damage and spilled Heavy Fuel Oil (HFO). There was no loss of life in the incident.



Fig 32. MT Dawn Kanchipuram off Kamarajar Port

Initial Report

At 0515 h on 28 Jan 17, Chief Officer of MV Dawn Kanchipuram intimated telephonically to Maritime Rescue Coordination Centre, Chennai {MRCC (CHN)} regarding the incident. Operation Centre, Coast Guard Regional Headquarters(East) {CGRHQ(East)} established communication with Kamarajar Port Control and was informed that 03 tugs ex Kamarajar Port Limited (KPL), Ennore are kept standby for assisting the damaged vessel and will be laying 500 mtrs boom. Only oil sheen was observed around the vessel and no leakage of

oil observed from the vessel. Ingress of water @ 10 tons/ hour approx was observed in the engine room of MT Dawn Kanchipuram, which was being pumped out continuously.

Pollution Response Operation

Since the incident had occurred within port limits, the port authorities were required to take appropriate actions as per National Oil Spill Disaster Contingency Plan (NOS-DCP). Notwithstanding, ICG initiated action in accordance with NOS-DCP and launched Coast Guard helo at 0730 hrs on 28 Jan 17 for initial aerial assessment.

M/s Darya Ship Management Pvt Ltd on 28 Jan 17, intimated through email that less than 02 MT oil had spilled due to collision as per initial assessment. Spill Notification Pro forma K1 of the National Oil Spill Disaster Contingency Plan (NOS-DCP) submitted by MT Dawn Kanchipuram Company M/s Darya Ship Management Pvt Ltd also intimated maximum oil released was less than 2 MT.

Coast Guard Ship Abheek was sailed from Chennai harbour in Pollution Response (PR) configuration, for further assessment of situation and rendering necessary PR assistance. ICG issued notice under section 356(J) of part XIA of Indian Merchant Shipping Act 1958, to the Owner/Master of MT Dawn Kanchipuram for undertaking cleanup operation and immediately initiate following actions:-

- Containment and recovery of spilled oil.
- Maintain sanctity of the environment as hitherto.

- Prevent further spillage of oil into the sea including removal of oil from the damaged tanks by transfer.



Fig 33. Coast Guard Pollution Response Operations

Despite prompt and coordinated response initiated by the Coast Guard, State Administration and Ennore Port, it was not long before the oil reached the shores as the spill had occurred less than 3 ½ kilometers from the port. 37 kilometers of Tamilnadu coastline was impacted by the spill, with Ramakrishna Nagar Kuppam area suffering the most damages. 37 agencies worked shoulder to shoulder for 14 days during the intense shoreline cleanup, to remove oil, and oily debris.

about 196.4 metric tonnes of bunkers were spilled during the incident. Compensation claims have been filed by the authorities for undertaking oil spill response operation and also by the effected party from the spill. An amount of US\$ 13, 80,864.00 (Thirteen Lakh, Eighty Thousand, Eight Hundred and Sixty Four US Dollars) has been settled so far.



Fig 35. Containment of Oil Spill

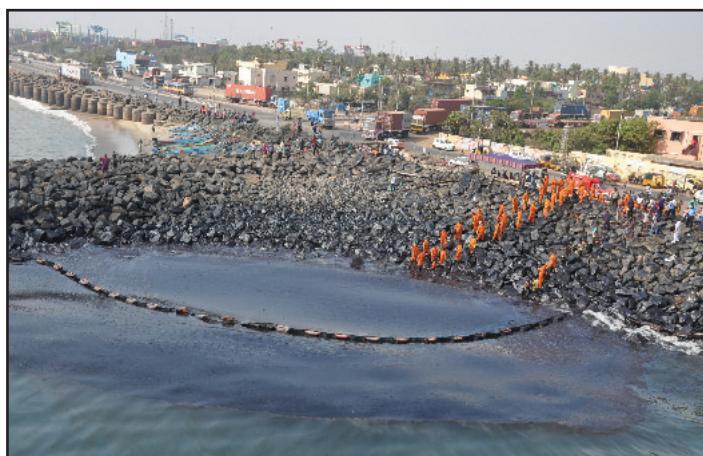


Fig 34. Shoreline Cleanup

Casualty investigation was carried out by Directorate General of Shipping, which revealed

Grounding of MV Jindal Meenakshi off Port Blair

At about 1730 hrs on 19 Apr 17, ICGS C-428 during patrol received information from port control regarding grounding of 'MV Jindal Meenakshi' off Port Blair. On investigation of the vessel, it was ascertained that vessel was aground in position 09 cable South of Ross Island. The vessel had anchored outside Port Blair port limits on 16 Apr 17 for machinery repairs and was waiting for its berthing by Port Management Board (PMB), Port Blair. At 1115 hrs on 19 Apr 17, while weighing anchor to move to the allocated berth, the vessel discovered that she has run aground. The minimum depth in area was 3.5 mtrs and bottom rocky. Forward portside portion of vessel touched the bottom

and there was no damage/flooding observed, all 20 crew onboard were safe. The vessel had informed PMB about the grounding. 14 MT Diesel and 60 MT heavy oil was onboard at the time of grounding.



Fig 36. MV Jindal Meenakshi aground off Port Blair

ICGS Rajveer was sailed from Port Blair in Pollution Response configuration for combating oil spill, if any. The area was monitored by CG helo which reported small streak of blackish oil observed near vessel, estimated quantity of spilt oil about 40-50 ltrs.

The vessel refloated at 0720 hrs on 20 Apr 17, using own power and moved to safe depth. Master of the vessel confirmed minor damage to ballast tanks DB—3 & 5 and also confirms tanks are isolated and no de-flooding assistance required. ICGS Rajveer escorted the vessel till harbour which was safely berthed at Chatham East Berth, Port Blair.

WORLD WATCH

Fire erupts onboard Maersk Box

A fire broke out onboard the Dutch flagged containership Maersk Pembroke on August 22 while underway some 125 nautical miles South West of Ireland.



Fig 37. Illustration; Image Courtesy: Maersk Line

The fire originated from an auxiliary engine and is reported under control. UK Coast Guard has been contacted, a company statement said.

All 22 crew members onboard are safe and accounted for. No effect on the environment has been reported.

Tanker catches fire in Kiel Canal

A fire broke out onboard product / chemical tanker Oraness while it was transiting the Kiel Canal in the evening hours of 16 May 17. The 79-meter-long vessel, was on ballast at the time of the incident, was en route to Brunsbüttel from Aarhus.

The fire occurred in the engine room while the 2,600 dwt ship was passing the Levensau High Bridge.

The crew raised the alarm and the pilot immediately stopped the ship, mooring on the north side of the canal near Schwartenbek. Following the incident, the vessel traffic in the canal was halted.

The crew managed to bring the fire under control with powder extinguishers. Firefighters that arrived at the scene with rafts joined the crew in extinguishing the fire. The blaze was extinguished at 0100 hrs on 17 May 17.



Fig 38. Fire onboard Chemical Tanker Oraness near Schwartenbek

The 1985-built Oraness, owned by Danish shipping company Simonsen MH, was towed to the Nordhafen where the investigation into the incident was launched.

Fire erupts onboard MSC Daniela off Colombo

A fire broke out onboard a containership owned by Swiss Mediterranean Shipping Company (MSC) some 120 nautical miles off Colombo harbour, Sri Lanka, on 04 April 17.



Fig 39. Fire onboard Containership Deniola off Colombo harbour

Sri Lankan navy deployed two fast attack craft (FAC) to fight the fire onboard the 13,798 TEU MSC Daniela, assisting Sri Lankan Port Authority's tugs. The two tugs were engaged in dousing the flames while the two FAC directed for immediate evacuation of the ship's crew in the eventuality of spread of fire.

Sri Lankan authorities requested India for firefighting assistance, Coast Guard Ship Shoor that was on goodwill visit to Sri Lanka and berthed at Colombo port was sailed with dispatch for fighting the fire in coordination with other units in that area. Fire was extinguished and there was neither loss of life nor any damage to marine environment.



Fig 40. Indian Coast Guard Ship Shoor engaged in fire fighting ops

Indian Coast Guard
Annual Calendar of Pollution Response Training and Exercise: 2017

Date	Venue	Event	Coordinator
17 Jan	Ratnagiri	Mock Drill	Coast Guard Station Ratnagiri
17 Jan	Kavaratti	Mock Drill	Coast Guard Dist. Headquarters-12, Kavaratti
07 Feb	Paradip	Mock Drill	Coast Guard Dist. Headquarters- 07, Paradip
07-08 Feb	Vizag	PR Seminar/ Mock Drill	Coast Guard Dist. Headquarters 06, Vizag
08 Feb	Kochi	Area level Exercise	Coast Guard Dist. Headquarters- 04, Kochi
13 Feb	GoK Area	Area Level Exercise	Coast Guard Station Vadinar
13 -17 Feb	AMET University, Chennai	Level – 2 Course	Pollution Response Team (East), Chennai
06-10 Mar	Vadinar	Level – 1 Course & Mock Drill	Coast Guard Station Vadinar
20-24 Mar	Chennai	Level – 1 Course & Mock Drill	Pollution Response Team (East), Chennai
20- 24 Mar	Mumbai	Level – 1 Course & Mock Drill	Pollution Response Team (West), Mumbai
06 Apr	Goa	Area Level Exercise	Coast Guard Dist. Headquarters- 11, Goa
19-20 Apr	Tuticorin	PR Seminar/ Mock Drill	Coast Guard Station Tuticorin
24- 28 Apr	Port Blair	Level – 1 Course & Mock Drill	Pollution Response Team (A&N), Port Blair
02-03 May	Haldia/ Kolkata	Area Level Exercise	Coast Guard Dist. Headquarters- 08, Haldia
12 May	Karaikal	Mock Drill	Coast Guard Station Karaikal
15 May	GoK Area	Area Level Exercise	Coast Guard Station Vadinar
17 May	Kavaratti	Mock Drill	Coast Guard Dist. Headquarters– 12, Kavaratti
07 Jun	Karwar	Mock Drill	Coast Guard Station Karwar
13 Jul	Kakinada	Mock Drill	Coast Guard Station Kakinada
09 Aug	Murud Janjira	Mock Drill	Coast Guard Station Murud Janjira
22 Aug	GoK Area	Area Level Exercise	Coast Guard Station Vadinar
28 Aug-01 Sep	AMET University, Chennai	Level – 2 Course	Pollution Response Team (East), Chennai
07 Sep	Haldia	Mock Drill	Coast Guard Dist. Headquarters- 08, Haldia
11-15 Sep	Mumbai	Level – 1 Course & Mock Drill	Pollution Response Team (West), Mumbai
12 Sep	Krishnapatnam	Mock Drill	Coast Guard Station Krishnapatnam
18-22 Sep	Chennai	Level – 1 Course & Mock Drill	Pollution Response Team (East), Chennai
18-22 Sep	Port Blair	Level – 1 Course & Mock Drill	Pollution Response Team (A&N), Port Blair
25 Sep	Vizhinjam	Mock Drill	Coast Guard Station Vizhinjam
09-13 Oct	Vadinar	Level – 1 Course & Mock Drill	Coast Guard Station Vadinar
10 Oct	Beypore	Mock Drill	Coast Guard Station Beypore
09 Nov	Mumbai	Regional Level Exercise	Pollution Response Team (West), Mumbai
13 Nov	GoK Area	Area Level Exercise	Coast Guard Station Vadinar
22-23 Nov	New Mangalore	Area Level Exercise	Coast Guard Dist. Headquarters- 3, New Mngrl
27 Nov	Port Blair	Regional Level Exercise	Pollution Response Team (A&N), Port Blair
28-29 Nov	Paradip	Mock Drill	Coast Guard Dist. Headquarters– 07, Paradip



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