# Model Garbage Management Plan

## Ship name [IMO number]

Contents

[1. Ship particulars 1](#_Toc507598765)

[2. Introduction 2](#_Toc507598766)

[3. Record of crew familiarisation 3](#_Toc507598767)

[4. Record of amendments 4](#_Toc507598768)

[5. Regulatory requirements 5](#_Toc507598769)

[5.1 Garbage Management Plan 5](#_Toc507598770)

[5.2 Placards 5](#_Toc507598771)

[5.3 Garbage Record Book 5](#_Toc507598772)

[6. Prevention of pollution from garbage 7](#_Toc507598773)

[6.1 General/waste minimisation 7](#_Toc507598774)

[6.2 Shipboard garbage handling 7](#_Toc507598775)

[6.3 Special exceptions for the discharge of garbage 9](#_Toc507598776)

[7. Matters to be addressed in the Garbage Management Plan 11](#_Toc507598777)

[7.1 Designated person in charge of carrying out the plan 11](#_Toc507598778)

[7.2 Procedures for collecting garbage 11](#_Toc507598779)

[7.2.1 Plastics and plastics mixed with non-plastic garbage 12](#_Toc507598780)

[7.2.2 Food wastes 12](#_Toc507598781)

[7.2.3 Synthetic fishing net and line scraps 12](#_Toc507598782)

[7.2.4 Other garbage 13](#_Toc507598783)

[7.2.5 Recovery of garbage at sea 13](#_Toc507598784)

[7.3 Procedures for processing garbage 14](#_Toc507598785)

[7.3.1 Grinders or comminuters 14](#_Toc507598786)

[7.3.2 Compactors 15](#_Toc507598787)

[7.3.3 Incinerators 17](#_Toc507598788)

[7.3.4 Treatment of animals (for cattle carriers) 19](#_Toc507598789)

[7.3.5 Management of cargo residues of solid bulk cargoes/wash water 20](#_Toc507598790)

[7.4 Procedures for storing garbage or reusable or recyclable material 21](#_Toc507598791)

[7.5 Procedures for discharging of garbage 21](#_Toc507598792)

[7.5.1 Discharge of animal and fish carcasses 22](#_Toc507598793)

[7.5.2 Discharge of cargo residues of solid bulk cargoes/wash water 22](#_Toc507598794)

[7.6 Training 23](#_Toc507598795)

[Appendix 1 Form of Garbage Record Book 24](#_Toc507598796)

[Appendix 2A Record of garbage discharges 26](#_Toc507598797)

[Appendix 2B Record of garbage discharges 28](#_Toc507598798)

[Appendix 3 Training record 29](#_Toc507598799)

[Appendix 4 Definitions 30](#_Toc507598800)

[Appendix 5 Inadequacy of port reception facilities 32](#_Toc507598801)

[Appendix 6 Sample placards 33](#_Toc507598802)

[Appendix 7 Criteria for the classification of solid bulk cargoes as harmful to the marine environment 34](#_Toc507598803)

1. Ship particulars

|  |  |
| --- | --- |
| Ship’s name |  |
| Ship type |  |
| Flag |  |
| Port of registry |  |
| Gross tonnage |  |
| IMO number |  |
| International call sign |  |
| Number of people the ship is certified to carry |  |
| Identification (rank) of Garbage Management Officer |  |

This Plan has been developed in accordance with the Revised MARPOL Annex V as amended, IMO Resolutions MEPC. 295(71) – 2017 Guidelines for the implementation of MARPOL Annex V and MEPC.220 (63) – 2012 Guidelines for the development of Garbage Management Plans

1. Introduction

This Plan is written in accordance with the requirements of Regulation 10 of the revised MARPOL Annex V (IMO Resolution MEPC.201(62) Corr.1) with an entry into force date of 1 January, 2013.

The guidelines contained in IMO Resolution MEPC.220(63) provide direction on complying with mandatory requirements for the development of a ship’s Garbage Management Plan, and are intended to assist the ship owner/operator in implementing regulation 10.2 of the revised MARPOL Annex V.

Ship owners and operators should also consult other available technical guidance on shipboard garbage handling, including ISO 21070 – Standard for the Management and handling of shipboard garbage. This outlines best management practices for shipboard garbage management and, to the extent that it is consistent with the revised MARPOL Annex V, should be incorporated into any Garbage Management Plan.

The purpose of this Plan is to provide guidance to the Master and crew on board the ship on the procedures for collecting, storing, processing and disposing of garbage, including the use of the equipment on board. It should detail the specific ship’s equipment and arrangements, and the location of equipment operating manuals.

Routine drills conducted on board will ensure that the ship’s staff is familiar with these procedures and with the use of the equipment on board.

This Plan is written in the working language of the crew.

Personnel must familiarise themselves with the Plan and its contents on joining the vessel.

For any Garbage Management Plan to be effective it has to be:

* realistic, practical, and easy to understand and use
* familiar to those with key functions on board the ship
* evaluated, reviewed and updated regularly; and
* tested regularly for viability.

The Garbage Management Plan must be agreed by the ship owner/ operator. The ship owner/operator is also responsible for the timely correction of the Plan.

1. Record of crew familiarisation

This document is to be circulated to the ship’s staff responsible for shipboard handling and discharge of garbage. After reading, the Garbage Management Plan is to be signed.

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Rank | Date joined | Signature and date |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

1. Record of amendments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Change number | Revision details/description | Revised part | Title / name | Date |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. Regulatory requirements
   1. Garbage Management Plan

According to Regulation 10.2 of MARPOL Annex V:

“Every ship of 100 gross tonnage and above, and every ship which is certified to carry 15 or more persons, and fixed or floating platforms shall carry a garbage management plan which the crew shall follow. This plan shall provide written procedures for minimizing, collecting, storing, processing and disposing of garbage, including the use of the equipment on board. It shall also designate the person or persons in charge of carrying out the plan. Such a plan shall be based on the guidelines developed by the Organization and written in the working language of the crew.”

It is a mandatory requirement to have a Garbage Management Plan on board. However, this Plan does not need to be approved by the administration.

* 1. Placards

There are mandatory requirements for the provision of placards.

Every ship of 12 metres or more in overall length and fixed or floating platforms shall display placards which notify the crew and passengers of the discharge requirements of regulations 3, 4, 5 and 6 of Annex V, and section 5.2 of part II-A of the Polar Code, as applicable.

The placards shall be written in the working language of the ship’s crew and, for ships engaged in voyages to ports or offshore terminals under the jurisdiction of other parties to the Convention, shall also be in English, French or Spanish.

It is recommended that all ships permanently post a summary declaration stating the prohibition and restrictions for discharging garbage from ships under MARPOL Annex V and the possible penalties for failure to comply. This declaration should be placed on placards which are at least 12.5 cm by 20 cm, made of durable material and fixed in conspicuous and prominent places on board the ship. Placards should be replaced when damage or wear compromises the readability of the declaration. The placards should be placed in prominent places where crew will be working and living, and in areas where bins are placed for collection of garbage. These places include galley spaces, mess room(s), wardroom, bridge, main deck and other areas of the ship, as appropriate. Placards should be displayed at eye line height and be printed in the working language of the crew. Ships which operate internationally will also have placards printed in English, French or Spanish, in accordance with regulation 10.1.2 of MARPOL Annex V. Sample placards are also included in this document’s Appendix 6.

If the ship carries passengers, placards should also be placed in prominent places where passengers are accommodated and congregate. These include cabins and all deck areas open to passengers for recreational purposes.

* 1. Garbage Record Book

Every ship of 400 gt and above and every ship which is certified to carry 15 persons or more engaged in voyages to ports or offshore terminals under the jurisdiction of another party to the Convention and every fixed or floating platform (fixed or floating structures located at sea which are engaged in exploration, exploitation or associated offshore processing of sea-bed mineral resources) shall be provided with a Garbage Record Book. The Garbage Record Book, whether as a part of the ship’s official log-book or otherwise, shall be in the form specified in the Appendix II Form of Garbage Record Book to MARPOL Annex V Record of Garbage Discharges.

a. Each discharge into the sea or to a reception facility, or a completed incineration, shall be promptly recorded in the Garbage Record Book and signed for on the date of the discharge or incineration by the officer in charge. Each completed page of the Garbage Record Book shall be signed by the master of the ship. The entries in the Garbage Record Book shall be at least in English, French or Spanish. If the entries are also made in an official language of the state whose flag the ship is entitled to fly, these entries in that language shall prevail in case of a dispute or discrepancy.

b. The entry for each discharge into the sea under regulations 4, 5, 6 or section 5.2 of chapter 5 of part II-A of the Polar Code shall include date and time, position of the ship (latitude and longitude), category of the garbage and the estimated amount (in cubic metres) discharged. For discharge of cargo residues the discharge start and stop positions shall be recorded in addition to the foregoing

c. The entry for each completed incineration shall include date and time and position of the ship (latitude and longitude) at the start and stop of incineration, categories of garbage incinerated and the estimated amount incinerated for each category in cubic metres.

d. The entry for each discharge to a port reception facility or another ship shall include date and time of discharge, port or facility or name of ship, categories of garbage discharged, and the estimated amount discharged for each category in cubic metres.

e. The Garbage Record Book along with receipts obtained from reception facilities shall be kept on board the ship or the fixed or floating platform, and in a place where it is readily available for inspection at all reasonable times. This document shall be preserved onboard for a period of at least two years from the date of the last entry made in it.

f. In the event of any discharge or accidental loss referred to in regulation 7 of this Annex an entry shall be made in the Garbage Record Book, or in the case of any ship of less than 400 gross tonnage, an entry shall be made in the ship's official log-book of the date and time of occurrence, port or position of the ship at time of occurrence (latitude, longitude and water depth if known), the reason for the discharge or loss, details of the items discharged or lost, categories of garbage discharged or lost, estimated amount for each category in cubic metres, reasonable precautions taken to prevent or minimize such discharge or accidental loss and general remarks.

The administration may waive the requirements for Garbage Record Books for:

a. any ship engaged on voyages of one (1) hour or less in duration which is certified to carry 15 persons or more; or

b. fixed or floating platforms.

The competent authority of the Government of a Party to the Convention may inspect the Garbage Record Books or ship's official log–book on board any ship to which this regulation applies while the ship is in its ports or offshore terminals and may make a copy of any entry in those books, and may require the master of the ship to certify that the copy is a true copy of such an entry. Any copy so made, which has been certified by the master of the ship as a true copy of an entry in the ship's Garbage Record Book or ship's official log-book, shall be admissible in any judicial proceedings as evidence of the facts stated in the entry. The inspection of a Garbage Record Book or ship's official log-book and the taking of a certified copy by the competent authority under this paragraph shall be performed as expeditiously as possible without causing the ship to be unduly delayed.

Note: please refer to Appendix 1 of this Plan for the Form of Garbage Record Book.

1. Prevention of pollution from garbage
   1. General/waste minimisation

To achieve cost-effective and environmentally sound results, many garbage management planners use a combination of complementary techniques to manage garbage, such as:

a. reduction at source

b. reuse or recycling

c. onboard processing (treatment)

d. discharge into the sea in those limited situations where it is permitted; and

e. discharge to a port reception facility.

When requisitioning stores and provisions, shipping companies should encourage their suppliers to remove or reduce all packaging, at an early stage, to limit the generation of garbage on board their ships.

When garbage is generated on board a ship, procedures should be defined to enable the crew to sort the material that can be reused on board the ship or recycled at an appropriate port reception facility.

Ship’s garbage is made up of distinct components, some of which are regulated in MARPOL Annex V, while others may be regulated locally, nationally or regionally. Each component of the garbage should be evaluated separately to determine the best management practice for that type of garbage.

Garbage does not include those substances which are defined or listed in other Annexes to the MARPOL Convention.

In accordance with regulations 4.3 and 6.4 of MARPOL Annex V; when garbage is mixed with or contaminated by other substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply.

* 1. Shipboard garbage handling

(collection, processing, storage and discharge)

Regulation 3 of MARPOL Annex V provides that the discharge of all garbage into the sea is prohibited, with limited exceptions, as summarised in Table 1. Under certain conditions, discharge into the sea of food wastes; animal carcasses; cleaning agents and additives contained in hold washwater, deck and external surface washwater; and cargo residues which are not considered to be harmful to the marine environment is permitted.

|  |  |  |  |
| --- | --- | --- | --- |
| Garbage type¹ | All ships except platforms4 | | Offshore platforms located more than 12 nm from nearest land and ships when alongside or within 500 metres of such platforms4  Regulation 5 |
| Outside special areas and Arctic waters Regulation 4  (Distances are from the nearest land) | Within special areas and Arctic waters Regulation 6  (Distances are from nearest land, nearest ice-shelf or nearest fast ice) |
| Food waste comminuted or ground2 | ≥3 nm, en route and as far as practicable³ | ≥12 nm, en route and as far as practicable³ | Discharge permitted |
| Food waste not comminuted or ground | ≥12 nm, en route and as far as practicable | Discharge prohibited | Discharge prohibited |
| Cargo residues5,6 not contained in wash water | ≥ 12 nm, en route and as far as practicable | Discharge prohibited | Discharge prohibited |
| Cargo residues5,6 contained in wash water | ≥ 12 nm, en route and as far as practicable | ≥ 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code) | Discharge prohibited |
| Cleaning agents and additives6 contained in cargo hold wash water | Discharge permitted | ≥ 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code) | Discharge prohibited |
| Cleaning agents and additives6 in deck and external surfaces wash water | Discharge permitted | Discharge permitted | Discharge permitted |
| Animal Carcasses (should be split or otherwise treated to ensure the carcasses will sink immediately) | Must be en route and as far from the nearest land as possible. Should be >100 nm and maximum water depth | Discharge prohibited | Discharge prohibited |
| All other garbage including plastics, synthetic ropes, fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing materials, paper, rags, glass, metal, bottles, crockery and similar refuse | Discharge prohibited | Discharge prohibited | Discharge prohibited |

Table 1: Summary of restrictions on discharge of garbage into the sea under Regulations 4, 5, 6 and 14 of MARPOL Annex V and chapter 5 of part II-A of the Polar Code

(Note: Table 1 is intended as a summary reference. The provisions in MARPOL Annex V and the Polar Code, not table 1, prevail.)

Table notes

1. When garbage is mixed with or contaminated by other harmful substances prohibited from discharge or having different discharge requirements, the more stringent requirements shall apply.

2. Comminuted or ground food wastes must be able to pass through a screen with mesh no larger than 25 mm.

3. The discharge of introduced avian products in the Antarctic area is not permitted unless incinerated, autoclaved or otherwise treated to be made sterile. In polar waters, discharge shall be made as far as practicable from areas of ice concentration exceeding 1/10; in any case food wastes shall not be discharged onto the ice

4. Offshore platforms located 12 nautical miles (nm) from the nearest land and associated ships include all fixed or floating platforms engaged in exploration or exploitation or associated processing of seabed mineral resources, and all ships alongside or within 500 metres of such platforms.

5. Cargo residues mean only those cargo residues that cannot be recovered using commonly available methods for unloading.

6. These substances must not be harmful to the marine environment.

When mixed with other discharges having different discharge requirements the more stringent requirements shall apply.

|  |  |  |  |
| --- | --- | --- | --- |
| Annex V: Garbage | | | |
| Special areas | Adopted | Date of entry into force | In effect from |
| Mediterranean Sea | 2 Nov 1973 | 31 Dec 1988 | 1 May 2009 |
| Baltic Sea | 2 Nov 1973 | 31 Dec 1988 | 1 Oct 1989 |
| Black Sea | 2 Nov 1973 | 31 Dec 1988 | \* |
| Red Sea | 2 Nov 1973 | 31 Dec 1988 | \* |
| “Gulf” Sea | 2 Nov 1973 | 31 Dec 1988 | 1 Aug 2008 |
| North Sea | 17 Oct 1989 | 18 Feb 1991 | 18 Feb 1991 |
| Antarctic area (south of latitude 60 degrees south) | 16 Nov 1990 | 17 Mar 1992 | 17 Mar 1992 |
| Wider Caribbean region including the Gulf of Mexico and the Caribbean Sea | 4 July 1991 | 4 Apr 1993 | 1 May 2011 |

Table 2: Adoption, entry into force and effective dates of Special Areas

* 1. Special exceptions for the discharge of garbage

Regulation 3, 4, 5 and 6 of MARPOL Annex V and section 5.2 of chapter 5 of part II-A of the Polar Code shall not apply to:

a. the discharge of garbage from a ship necessary for the purpose of securing the safety of a ship and those on board or saving life at sea; or

b. the accidental loss of garbage resulting from damage to a ship or its equipment provided all reasonable precautions have been taken before and after the occurrence of the damage, for the purpose of preventing or minimising the escape; or

c. the accidental loss of fishing gear from a ship provided that all reasonable precautions have been taken to prevent such loss; or

d. the discharge of fishing gear from a ship for the protection of the marine environment or for the safety of that ship or its crew.

Exception to en route requirements

The en route requirements of regulations 4 and 6 of MARPOL Annex V and chapter 5 of part II-A of the Polar Code shall not apply to the discharge of food wastes where it is clear the retention on board of these food wastes presents an imminent health risk to the people on board.

1. Matters to be addressed in the Garbage Management Plan
   1. Designated person in charge of carrying out the plan

In accordance with Regulation 10.2 of MARPOL Annex V, the Garbage Management Plan shall designate a person to be responsible for implementing the procedures it contains. Such a decision is determined by the company depending on ship type and trade; normally a senior deck or engineer officer would be appropriate.

The designated person should be assisted by departmental staff to ensure that the collection, separation and processing of garbage is efficient in all areas of the ship, and that the procedures in the Plan are followed.

* 1. Procedures for collecting garbage

Procedures for collecting garbage in this plan should;

* identify suitable receptacles for collection and separation. Receptacles for each category should be clearly marked and distinguished by colour, size, graphics, shape or location.
* Note: Separation of garbage for the purposes of these guidelines is considered part of the collection process. Separation may take place at the source or at a separate designated station.
* identify locations of receptacles and collection and separation stations
* describe the process of how garbage is transported from the source of generation to the collection and separation stations
* describe how garbage will be handled between primary collection and separation stations and other handling methods relating to:

1. the needs of reception facilities, taking into account possible local recycling arrangements

2. onboard processing and potential reuse of garbage aboard ship

3. storage, and

4. discharge into the sea in those limited situations where it is permitted.

* describe the training or education programmes to facilitate collection of garbage and sorting of reusable or recyclable material.

Procedures for collecting garbage generated on board ship should be based on consideration of what is permitted and what is not permitted to be discharged into the sea while en route, and whether a particular garbage type can be discharged to port facilities for recycling or reuse.

To reduce or avoid the need for sorting after collection, and to facilitate recycling, it is recommended that distinctively marked garbage receptacles be provided on board the ship to receive different categories of garbage as it is generated. Receptacles on board can be drums, metal bins, cans, container bags, or wheelie bins. Any receptacles on deck areas, poop decks, or areas exposed to the weather should be secured on the ship and have lids that are tight and securely fixed. All garbage receptacles should be secured to prevent loss, spillage, or loss of any garbage that is deposited in the receptacles. Receptacles should be clearly marked and distinguishable by graphic, shape, size, or location. Receptacles should be placed in appropriate spaces throughout the ship (e.g. the engine-room, mess deck, wardroom, galley, and other living or working spaces) and all crew members and passengers should be advised of what garbage should and should not be placed in them.

The recommended garbage types that should be separated are:

1. non-recyclable plastics and plastics mixed with non-plastic garbage

2. food wastes (which includes materials contaminated by such wastes)

3. rags

4. recyclable material:

* cooking oil
* glass
* aluminium cans
* paper, cardboard, corrugated board
* wood
* metal and
* plastics (including styrofoam or other similar plastic material); and

5. E-waste generated on board (e.g. electronic cards, gadgets, instruments, equipment, computers, printer cartridges, etc.); and

6. garbage that might present a hazard to the ship or the crew (e.g., oily rags, light bulbs, acids, chemicals, batteries).

Crew responsibilities should be assigned for collecting or emptying these receptacles and taking the garbage to the appropriate processing or storage location. Use of such a system will facilitate subsequent shipboard processing and minimise the amount of garbage which must be stored on board ship for return to port.

* + 1. Plastics and plastics mixed with non-plastic garbage

Plastics are used for a variety of marine purposes including packaging (vapour-proof barriers, bottles, containers, liners, bags, cargo wrapping material, foam cushioning material, etc.); ship construction (fibreglass and laminated structures, siding, piping, insulation, flooring, carpets, fabrics, paints and finishes, adhesives, electrical and electronic components, etc.); disposable eating utensils (styrofoam plates, bowls, food containers, cups, etc.); bags; sheeting; floats; fishing nets; fishing lines; strapping bands; wire rope with synthetic fibre sheaths; combination wire rope; rope; line; sails; and many other manufactured plastic items.

Regulation 3.2 of MARPOL Annex V prohibits the discharge of all plastics into the sea. Plastic garbage must be retained on board ship for discharge at port reception facilities unless reduced to ash by incineration. When plastic is mixed with other garbage the mixture must be treated as if it were all plastic.

* + 1. Food wastes

Some Governments have regulations for controlling human, plant, and animal diseases that may be carried by foreign food wastes and materials that have been associated with them (e.g., food packaging and disposable eating utensils). These regulations may require incinerating, sterilising, double bagging or other special treatment to destroy possible pest and disease organisms. This type of garbage should be kept separate from other garbage and preferably retained for discharge at port reception facilities in accordance with the laws of the receiving country. Governments are reminded of their obligation to ensure the provision of adequate reception facilities. Precautions should be taken to ensure that plastics contaminated by food wastes (e.g., plastic food wrappers) are not discharged into the sea with other food wastes.

* + 1. Synthetic fishing net and line scraps

As regulation 3.2 of MARPOL Annex V prohibits discharge into the sea of synthetic fishing nets and line scraps generated by the repair or operation of fishing gears, these items should be collected in a manner that avoids their loss overboard. Such material may be incinerated, compacted, or stored along with other plastics or it may be preferable to keep it separate from other types of garbage if it has a strong odour or is present in great volume. Unless such garbage is appropriately incinerated, the atmospheric incineration products could be toxic. Onboard incineration should follow regulation 16 of MARPOL Annex VI.

* + 1. Other garbage

Garbage in this category includes paper products, rags, glass, metal, bottles, crockery, dunnage, lining and packing materials. Vessels may find it desirable to separate dunnage, lining and packing material which will float since this material is subject to a different discharge limit than other garbage in this category (see Table 1). Such garbage should be kept separate from other garbage and preferably retained for discharge in port.

Separate cans or bags could be provided for receiving and storing glass, metal, plastics, paper or other items which can be recycled. To encourage crew members to deposit such items in the receptacles provided, proceeds generated from their return might be added to a ship’s recreational fund.

Procedures for handling ship-generated garbage are divided into four phases: collection, processing, storage and discharge. Figure 1 presents a general plan for handling and storing ship-generated garbage.

* + 1. Recovery of garbage at sea

Seafarers are encouraged to recover persistent garbage from the sea during routine operations as opportunities arise and prudent practice permits, and to retain the material for discharge to port reception facilities.



Figure 1: Options for shipboard handling and discharge of garbage

* 1. Procedures for processing garbage

Procedures for processing garbage in this plan should;

1. identify the personnel responsible for operating the processing equipment
2. identify available processing devices and their capacities
3. identify the location of processing devices and processing stations
4. identify the categories of garbage that are to be processed by each of the available processing devices
5. describe how material that can be reused or recycled is to be handled between primary processing stations and the storage or transfer stations
6. describe processing procedures used for:
   1. the needs of reception facilities, taking into account available recycling arrangements
   2. storage; and
   3. discharge into the sea in those limited situations where it is permitted.
7. describe the training or education programmes to facilitate the processing of garbage and reuse or recycling of material
8. identify standard operating procedures for the operation and maintenance of the equipment used to manage garbage. This may be done by reference to documents available on board.

Depending on factors such as ship type, area of operation and number of crew or passengers, ships may be equipped with incinerators, compactors, comminuters or other devices for shipboard garbage processing. Appropriate members of the crew should be trained and assigned responsibility for operating this equipment on a schedule commensurate with ship needs. In selecting appropriate processing procedures, the following should be considered.

Use of compactors, incinerators, comminuters, and other such devices has a number of advantages, such as reducing shipboard space requirements for storing garbage and making it easier to discharge garbage at port reception facilities.

Special rules on incineration under domestic law may apply in some ports and may exist in some special areas. Incineration of hazardous materials (e.g., scraped paint, impregnated wood) and certain types of plastics (e.g., PVC-based plastics or other plastics containing hazardous chemicals) calls for special precaution due to the potential environmental and health effects from combustion of by-products (see also section 7.3.3.)

Ships operating primarily in special areas, Arctic waters or within 3 nautical miles (nm) of the nearest land, ice-shelf or fast ice are greatly restricted in what they can discharge. These ships should choose between storage of either compacted or uncompacted material for discharging at port reception facilities or incineration with retention of ash and clinkers. The type of ship and the expected volume and type of garbage generated will determine the suitability of compaction, incineration, or storage options.

* + 1. Grinders or comminuters

The discharge of comminuted food wastes may be permitted under regulations 4.1.1 and 6.1.1 of MARPOL Annex V or paragraph 5.2.1 of part II-A of the Polar Code while the ship is en route. Such comminuted or ground food wastes must be capable of passing through a screen with openings no greater than 25 mm.

A wide variety of food waste grinders is available on the market and most modern ships' galleys have the equipment needed to produce a slurry of food particles and water that washes easily through the required 25 mm screen. Output ranges from 10 to 250 litres per minute. The discharge from shipboard comminuters should be directed into an appropriately constructed holding tank when the ship is operating within an area where discharge is prohibited.

Although larger food scraps may be discharged beyond 12 nautical miles, it is recommended that comminuters be used even outside this limit because they hasten assimilation into the marine environment. Because food wastes comminuted with plastics cannot be discharged at sea, all plastic materials must be removed before food wastes are ground up.

Size reduction of certain other garbage items can be achieved by shredding or crushing and machines for carrying out this process are available for use on board ships.

It is recommended that garbage is not discharged into a ship’s sewage treatment system unless it is approved for treating such garbage. Furthermore, garbage should not be stored in bottoms or tanks containing oily wastes. Such actions can result in faulty operation of sewage treatment or oily-water separator equipment and can cause sanitary problems for crew members and passengers.

It is recommended that the discharge from shipboard comminuters be directed into a holding tank when the vessel is operating within an area where discharge is prohibited.

Outside special areas and Arctic waters, ships operating primarily beyond 3 nm from the nearest land are encouraged to install and use comminuters to grind food wastes to a particle size capable of passing through a screen with openings no larger than 25 mm. Regulation 4 of MARPOL Annex V requires comminuting or grinding food wastes if the food wastes are to be discharged between three and 12 nm from the nearest land. Although unprocessed food wastes may be discharged beyond 12 nm, it is recommended that comminuters be used as they hasten assimilation into the marine environment. Because food wastes comminuted with plastics cannot be discharged into the sea, all plastic materials need to be removed before food wastes are placed into a comminuter or grinder.

When operating inside a special area or Arctic waters, regulation 6 of MARPOL Annex V and chapter 5 of part II-A of the Polar Code require all food wastes to be comminuted or ground before discharge into the sea. All discharges are to be made as far as practicable and not less than 12 nm from the nearest land, ice-shelf or fast ice. Food wastes shall not be discharged onto the ice.

* + 1. Compactors

Compactors make garbage easier to store, to transfer to port reception facilities, and to dispose of at sea when discharge limitations permit. In the latter case, compacted garbage may also aid in sinking, which would reduce aesthetic impacts in coastal waters and along beaches, and perhaps reduce the likelihood of marine life ingesting or otherwise interacting with discharged materials.

A compactor should be installed in a compartment with adequate room for operating and maintaining the unit and for storing the trash to be processed. The compartment should be located adjacent to the areas of food processing and commissary store-rooms. If not already required by regulations it is recommended that the space have freshwater wash down service, coamings, deck drains, adequate ventilation and hand or automatic fixed fire-fighting equipment. Table 3 shows the compliance options for different garbage types.

Most garbage can be compacted to some degree: the exceptions include unground plastics, fibre and paper board, bulky cargo containers and thick metal items. Pressurized containers should not be compacted or shredded without the use of specialized equipment designed for this purpose because they present an explosion hazard in standard compactors.

Compaction reduces the volume of garbage. In most cases the output from a compactor is a block of material which facilitates the shipboard storage of garbage and the discharge of the material in a port facility. Note that the output from a compactor might be subject to quarantine, sanitary or health requirements or other requirements from the port reception facilities and advice from local authorities should be sought on any standards or requirements which are additional to those set by the IMO.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Examples of garbage | Special handling by ship’s personnel before compaction | Compaction characteristics | | | Onboard storage space |
| Rate of alteration | Retainment of compacted form | Density of compacted form |
| Metal, food and beverage  containers, glass, small  wood pieces | None | Very rapid | Almost 100% | High | Minimum |
| Comminuted plastics, fibre and paper board | Minor – reduce material to size for feed, minimal  manual labour | Rapid | Approximately 80% | Medium | Minimum |
| Small metal drums,  uncomminuted cargo packing, large pieces of  wood | Moderate – longer  manual labour time  required to size material  for feed | Slow | Approximately 50% | Relatively low | Moderate |
| Uncomminuted  plastics | Major – very long manual  labour time to size  material for feed; usually  impractical | Very slow | Less than 10% | Very low | Maximum |
| Bulky metal cargo containers,  thick metal  items | Impractical for shipboard  compaction; not feasible | Not applicable | Not applicable | Not applicable | Maximum |

Table 3: compaction options for various types of garbage

Compactors have options including sanitizing, deodorizing, adjustable compaction ratios, bagging in plastic or paper, boxing in cardboard (with or without plastic or wax paper lining) and baling. Compacted materials should be stored appropriately. While metal and plastic bales can get wet, paper and cardboard bales should be kept dry.

If grinding machines are used before compaction, the compaction ratio can be increased and the storage space decreased. Careful investigation of the appropriate compaction machine should be undertaken, based on the type and volume of material that will be compacted, as not all compactors require grinding. Compaction is just one step in the solid waste management scheme and the shipowner/operator should ensure all phases of garbage management are described in their Garbage Management Plan. Proper care should be taken when handling and storing binder wrap to prevent it from accidentally entering the marine environment.

A compactor should be installed in a compartment with adequate room for operating and maintaining the unit and for storing the garbage to be processed. The compartment should be located adjacent to the areas of food processing and commissary store-rooms. If not already required by regulation, it is recommended that the space should have freshwater wash down service, coamings, deck drains, adequate ventilation and hand or automatic fixed fire-fighting equipment.

* + 1. Incinerators

Ash and clinkers from shipboard incinerators should be considered as operational waste and therefore as garbage that is not eligible for discharge into the sea.

Incineration conducted in a shipboard incinerator can significantly reduce the need to store garbage on board the ship. Shipboard incinerators should be designed, constructed, operated and maintained in accordance with the 2014 Standard specification for shipboard Incinerators (Resolution MEPC.244 (66), as amended. MARPOL Annex VI requires shipboard incinerators installed after 1 January 2000 to be type approved and meeting specific air pollution criteria. Incinerators should only be used to incinerate materials that are specified by the incinerator manufacturer.

In general, shipboard incineration should not be undertaken when the ship is in port or at an offshore terminal. Some ports may have domestic laws that specify additional air emission restrictions, particularly those near high population areas. The use of a shipboard incinerator may require permission from the port authority concerned.

Table 4 presents options for the incineration of garbage, and includes considerations for special handling by ship’s personnel, combustibility, reduction in volume, residual materials, exhaust, and onboard storage space. Most garbage is amenable to incineration with the exception of metal and glass.

Each operator of the onboard garbage incinerator should be trained and familiar in the use of the equipment and the types of garbage that can be destroyed in the incinerator.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Examples of garbage | Special handling by ship’s personnel before incineration | Incineration characteristics | | | | Onboard storage space |
| Combustibility | Reduction of volume | Residual | Exhaust |
| Paper packing food and beverage container | Minor - easy to feed into hopper | High | Over 95% | Powder ash | Possibly smoky and  not hazardous | Minimum |
| Fibre and paper board | Minor - reduce material to size for feed; minimum manual labour | High | Over 95% | Powder ash | Possibly smoky and  not hazardous | Minimum |
| Plastic packaging, food and beverage  containers, etc. | Minor - easy to feed into hopper | High | Over 95% | Powder ash | Possibly smoky and not hazardous based on incinerator design | Minimum |
| Plastic sheeting, netting, rope and  bulk material | Moderate - manual labour time to size reduction | High | Over 95% | Powder ash | Possibly smoky and not hazardous based on incinerator design | Minimum |
| Rubber hoses and bulk pieces | Major - manual labour time to size reduction | High | Over 95% | Powder ash | Possibly smoky and not hazardous based on incinerator design | Minimum |
| Metal food and beverage containers,  etc. | Minor - easy to feed into hopper | Low | Less than 10% | Slag | Possibly smoky and  not hazardous | Moderate |
| Metal cargo, bulky containers, thick  metal items | Major - manual labour time to size reduction (not easily incinerated) | Very Low | Less than 5% | Large metal  fragments  and slag | Possibly smoky and  not hazardous | Maximum |
| Glass food and beverage containers,  etc. | Minor - easy to feed into hopper | Low | Less than 10% | Slag | Possibly smoky and  not hazardous | Moderate |
| Wood, cargo containers and large  wood scrapes | Moderate - manual labour time for size reduction | High | Over 95% | Powder ash | Possibly smoky and  not hazardous | Minimum |

\* Check local rules for possible reductions.

Table 4: Incineration options for shipboard-generated garbage

Some of the disadvantages of incinerators may include the possible hazardous nature of the ash or vapour, dirty operation, and excessive labour required for charging, stoking and ash removal. Some incinerators may not be able to meet air pollution regulations imposed in some ports and harbours or by flag and coastal states when such matters are subject to their jurisdiction. Some of these disadvantages can be remedied by automatic equipment for charging and stoking, though the additional equipment to perform automatic functions will require more installation space.

The incineration of garbage that contains a large amount of plastic involves very specific incinerator settings such as higher oxygen injection and higher temperatures (850 to 1,200°C). If these special conditions are not met, depending on the type of plastic and conditions of combustion, some toxic gases can be generated in the exhaust stream, including vaporized hydrochloric (HCl) and hydrocyanic (HCN) acids. These and other intermediary products of combustion of waste containing plastics are toxic to humans and marine life.

Onboard incineration of garbage may reduce the volume of garbage subject to quarantine requirements in some countries. However, incinerator ash may still be subject to local quarantine, sanitary or health requirements. Advice should be sought from local authorities regarding requirements additionally to MARPOL. For example, higher temperatures and more complete combustion may be required to effectively destroy organisms that present a risk.

* + 1. Treatment of animals (for cattle carriers)

Only fit and healthy animals should be presented for loading as cargo and should be managed in accordance with international standards for the transport of animals at sea: the World Organisation for Animal Health (OIE) formulated "Guidelines for the Transport of Animals by Sea" as part of the Terrestrial Animal Health Code (2010). The master of the ship is expected to have responsibility for shipboard livestock operational issues, animal health and welfare, and conditions for the control and reporting of animal mortality on board.

Ships carrying live animal cargo consignments are expected to have animals dying during a voyage. The mortality numbers are generally low and are operational issues to be controlled as part of cargo management practice. These mortalities are considered to be generated during the normal operation of the ship and liable to be discharged continually or periodically and therefore subject to MARPOL Annex V regulations.

As part of normal livestock ship management procedures, regular inspections (day and night) are recommended to ensure the health and welfare of the animals. It is recommended that these inspections include daily shipboard recording of the number of animals that have died or been euthanized.

When mortalities occur on board, the carcasses should be removed from the pen areas and assessed for appropriate disposal. The options for appropriate discharge of carcasses under MARPOL Annex V will typically be discharge into the sea or discharge to a reception facility. If the ship has an appropriate storage area on board, limited quantities of treated carcasses may be stored for short periods for subsequent discharge into the sea or to reception facilities. Any storage on board should take into account occupational health and safety requirements.

Animal carcasses should be split or otherwise treated before their discharge into the sea. Procedures for the treatment of carcasses should take into account the health and safety of the crew and other livestock cargo. Treatment should facilitate the sinking or dispersal of the carcass when it is discharged into the sea.

Treatment of a carcass involves:

* manually slitting or cutting the carcass to the extent that the thoracic and abdominal cavities are opened; or
* passing the carcass through equipment such as a comminuter, grinder, hogger, or mincer.

For each animal carcass incinerated, discharged into the sea or discharged to a reception facility, an entry shall be made in the Garbage Record Book. The entry should include the date and time, the position of the ship, the animal species (e.g., sheep, cattle, goats), the category "HG" and the number of carcasses discharged. If the discharge is to a reception facility, the receipt obtained from the facility should be attached to the Garbage Record Book.

On completion of a voyage, the master of the ship is encouraged to provide a copy of the pages of the Garbage Record Book that contain the entries for the discharges of animal carcasses into the sea to the flag state and the state from whose port the voyage originated, along with any other information requested.

Mortalities in excess of those generated during the normal operation of a ship

Carcasses of animals resulting from mortalities in excess of those generated during the normal operation of a ship are not "garbage" under MARPOL Annex V and are not covered under these Guidelines. To assist in managing these situations, masters should contact the flag state of the ship and, if appropriate, port and/or coastal state(s) to seek guidance on the appropriate legal regimes and requirements, as well as consult relevant IMO guidelines and circulars. In particular, masters should refer to the Revised Guidance on the management of spoilt cargoes (MEPC.1/Circ 809), developed by a Joint London Convention-and Protocol/MEPC Correspondence Group.

"Mortalities in excess of those generated during the normal operation of a ship" refers to animal mortalities in excess of those described in the second paragraph of this section. While this could be a number of animals dying at the same time or within a short period of time, the number of mortalities that exceed those generated during the normal operation of a ship will depend upon the animal species and the total number and/or species carried in the consignment.

Circumstances that may result in mortalities that exceed those generated during the normal operation of the ship include:

* malfunctioning of ventilation or watering systems
* weather events such as heat waves or storm systems
* infectious disease outbreaks; and
* refusal of cargo offloading by authorities at destination, leading to the need to euthanize some or all of the live animal cargo.

The guidance provided above and the Revised Guidance on the management of spoilt cargoes are not substitutes for any stricter requirements imposed on a ship by a port state, a flag state or the exporting country for the management of livestock cargoes.

* + 1. Management of cargo residues of solid bulk cargoes/wash water

Cargo residues are considered harmful to the marine environment and subject to regulations 4.1.3 and 6.1.2.1 of MARPOL Annex V if they are residues of solid bulk cargoes (other than grain) which are classified according to the criteria set out in appendix I of MARPOL Annex V. (Appendix 7 of this GMP Template)

Solid bulk cargoes as defined in regulation VI/1-1.2 of the International Convention for the Safety of Life at Sea (SOLAS) 1974, as amended, other than grain shall be classified in accordance with appendix I of MARPOL Annex V and declared by the shipper as to whether or not they are harmful to the marine environment (HME). For ships engaged on International voyages, such a declaration should be included in the information required in section 4.2.3 of the IMSBC Code. For ships not engaged on International voyages, other means of declaration may be used, as determined by the Administration.

Ports, terminals and ship operators should consider cargo loading, unloading and onboard handling practices in order to minimize production of cargo residues. Cargo residues are created through inefficiencies in loading, unloading, on board handling. Options should be considered to decrease the amount of such garbage.

When the master, based on the information received from the relevant port authorities, determines that there are no adequate reception facilities at either the port of departure or the port of destination in the case where both ports are situated within the same special area or Arctic waters, the condition under regulation 6.1.2.5 of MARPOL Annex V or paragraph 5.2.1.5 of part II-A of the Polar Code should be considered satisfied.

* 1. Procedures for storing garbage or reusable or recyclable material

Garbage collected .from living and working areas throughout the ship should be delivered to designated processing or storage locations. Garbage that must be returned to port for discharge may require long-term storage depending on the length of the voyage or arrangements for off-loading (e.g., transferring garbage to an offshore vessel for subsequent transfer ashore). Garbage which may be discarded overboard may require short-term or no storage. In all cases, garbage should be stored in a manner which avoids health and safety hazards. If the ship has an appropriate storage area on board, limited quantities of treated carcasses may be stored for short periods for subsequent discharge into the sea or to reception facilities. Any storage on board should take into account occupational health and safety requirements.

Procedures for storing garbage in this Plan should:

1. Identify the location, the intended use, and the capacities of available storage stations for each category of garbage or reusable or recyclable material. Sufficient storage space and equipment (e.g. cans, drums, bags or other containers) should be provided. Where space is limited, vessel operators are encouraged to install compactors or incinerators. To the extent possible, all processed and unprocessed garbage which must be stored for any length of time should be in tight, securely covered containers.
2. Describe the conditions under which the garbage will be stored (for example, “food – frozen”; “cans – compacted and stacked”; “paper – compacted and should remain dry”). The ship should use separate cans, drums, boxes, bags or other containers for short-term (disposable garbage) and trip-long (non-disposable garbage) storage. Food wastes and associated garbage which are returned to port and which may carry diseases or pests should be stored in tightly covered containers and be kept separate from garbage which does not contain such food wastes. Both types of garbage should be stored in separate clearly marked containers to avoid incorrect discharge and treatment on land. Disinfection and both preventative and remedial pest control methods should be applied regularly in garbage storage areas.
3. Describe how garbage, including reusable and recyclable material, is to be handled between storage stations and discharge with regard to:
4. discharge to reception facilities, taking into account available recycling arrangements, and
5. discharge into the sea in those limited situations where it is allowed.
6. Describe the training or education programmes to facilitate the storage of garbage and options for reusing and recycling components of the waste stream.
   1. Procedures for discharging of garbage

Although discharge is possible under Annex V, discharge of garbage to port reception facilities should be given first priority. Discharge of ship-generated garbage must be done in a manner consistent with the regulations summarized in Table 1.

When discharging of garbage, the following points should be considered:

1. Garbage including plastics, synthetic ropes , fishing gear, plastic garbage bags, incinerator ashes, clinkers, cooking oil, floating dunnage, lining and packing, materials, paper, rags, glass, metal, bottles, crockery and similar refuse under MARPOL Annex V are not permitted to be discharged over board. These wastes must be delivered to the nearest port reception facilities.
2. Cleaning agents and additives in deck and external surfaces wash water which are not harmful to the marine environment can be discharged at sea.
3. Maintenance/operational wastes are generated more or less steadily during the course of routine ship operations. In some cases, maintenance wastes may be contaminated with substances, such as oil or toxic chemicals, controlled under other annexes or other pollution control laws. In such cases, the more stringent discharge requirements take precedence.
4. To ensure timely transfer of large quantities of ship-generated garbage to port reception facilities, it is essential for ships or their agents to make arrangements for garbage reception well in advance. At the same time, discharge needs should be identified in order to make arrangements for garbage requiring special handling or other necessary arrangements. Special discharge needs might include off-loading food wastes and associated garbage which may carry certain disease or pest organisms.

The Garbage Management Plan should describe the procedures to ensure and demonstrate compliance with the requirements of the revised MARPOL Annex V for the discharge of garbage.

* + 1. Discharge of animal and fish carcasses

Further to Section 7.3.4

Regulation 4.1.4 of MARPOL Annex V permits the discharge into the sea of animal carcasses generated during the normal operation of a ship, but only if the ship is en route, outside a special area and Arctic waters, as far as possible from the nearest land and taking into account the guidelines developed by the Organization.

However, it is recommended that the discharge into the sea should take place more than 100 nm from the nearest land and in the maximum water depth possible. When a ship is on a voyage that is not often more than 100 nm from the nearest land, the retention of carcasses on board during conditions of high temperatures and high humidity may constitute a threat to human health and safety or to the remaining live animals. In these circumstances it may not be possible to discharge animal carcasses in accordance with these Guidelines. In such circumstances where the master of the ship determines that such health and safety threats exist, it is recommended the discharge into the sea should take place more than 12 nm from the nearest land. Where the discharge of animal carcasses at sea occurs under these circumstances, the entry in the Garbage Record Book giving the position of the ship should also include a remark about these circumstances.

Fish, including shellfish, carried on board as cargo that have died or been euthanized on board during the voyage are considered to be animal carcasses and should, to the extent practicable, be treated in the same manner as for discharge of animal carcasses. Governments may want to consider additional actions to reduce the risk of spreading parasitic or pathogenic organisms.

* + 1. Discharge of cargo residues of solid bulk cargoes/wash water

Further to Section 7.3.5.

Cargo residues may be discharged in accordance with regulations 4.1.3 and 6.1.2 and paragraph 5.2.1.5 of part II-A of the Polar Code.

However, cargo material contained in the cargo hold bilge water should not be treated as cargo residues if the cargo material is not harmful to the marine environment and the bilge water is discharged from a loaded hold through the ship's fixed piping bilge drainage system.

Cargo residues that are harmful to the marine environment may require special handling not normally provided by reception facilities. Ports and terminals receiving such cargoes should have adequate reception facilities for all relevant residues, including when contained in wash water.

When the "port of departure" and the "next port of destination" is the same, to discharge cargo hold wash water the ship must be en route and the discharge must take place not less than 12 nm from the nearest land.

* 1. Training

Ship operators should establish detailed training programmes for personnel operating and maintaining ships’ garbage reception or processing equipment. It is suggested that programmes include instruction on what constitutes garbage and the relevant regulations governing garbage handling and disposal. Training programmes should be reviewed annually and updated when required.

The designated person should provide training to all crew involved in operating garbage processing equipment and collecting, separating and disposing of garbage as part of their operational responsibilities. This should be carried out periodically depending on the ship’s SMS system.

Training may include visual material such as videos, photographs, poster demonstrations and exercises.

Appendix 1 Form of Garbage Record Book

Name of ship

Distinctive number or letters

IMO No.

Period From To

1. Introduction

In accordance with Regulation 10 of Annex V of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL) a record is to be kept of each discharge operation or completed incineration. This includes discharges into the sea, to reception facilities, or to other ships, as well as the accidental loss of garbage.

2. Garbage and garbage management

Garbage means all kinds of food wastes, domestic wastes and operational wastes, all plastics, cargo residues, incinerator ashes, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other Annexes to the present Convention. Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities which involve the transport of fish including shellfish for placement in the aquaculture facility and the transport of harvested fish including shellfish from such facilities to shore for processing.

The Guidelines for the Implementation of Annex V of MARPOL should also be referred to for relevant information.

3. Description of the garbage

Garbage is to be grouped into categories for the purposes of recording in parts I and II of the Garbage Record Book (or ship's official log-book) as follows:

**Part I**

A. Plastics

B. Food wastes

C. Domestic wastes (e.g., paper products, rags, glass, metal, bottles, crockery, etc.)

D. Cooking oil

E. Incinerator Ashes

F. Operational wastes

G. Animal Carcasses

H. Fishing gear

I. E-waste

**Part II**

J. Cargo residues (non-HME)

K. Cargo residues (HME)

4. Entries in the Garbage Record Book

4.1 Entries in the Garbage Record Book shall be made on each of the following occasions:

4.1.1 When garbage is discharged to a reception facility ashore or to other ships:

1. Date and time of discharge
2. Port or facility, or name of ship
3. Categories of garbage discharged
4. Estimated amount discharged for each category in cubic metres
5. Signature of officer in charge of the operation.

4.1.2 When garbage is incinerated:

1. Date and time of start and stop of incineration
2. Position of the ship (latitude and longitude) at the start and stop of incineration
3. Categories of garbage incinerated
4. Estimated amount incinerated in cubic metres
5. Signature of the officer in charge of the operation.

4.1.3 When garbage is discharged into the sea in accordance with regulations 4, 5 or 6 of MARPOL Annex V and chapter 5 of part II-A of the Polar Code:

1. Date and time of discharge
2. Position of the ship (latitude and longitude). Note: for cargo residue discharges, include discharge start and stop positions.
3. Category of garbage discharged
4. Estimated amount discharged for each category in cubic metres
5. Signature of the officer in charge of the operation.

4.1.4 Accidental or other exceptional discharges or loss of garbage into the sea, including in accordance with regulation 7 of Annex V of MARPOL:

1. Date and time of occurrence
2. Port or position of the ship at time of occurrence (latitude, longitude and water depth if known)
3. Categories of garbage discharged or lost
4. Estimated amount for each category in cubic metres
5. The reason for the discharge or loss and general remarks.

4.2 Amount of garbage

The amount of garbage on-board should be estimated in cubic metres, if possible separately by category. The Garbage Record Book contains many references to estimated amount of garbage. It is recognised that the accuracy of estimating amounts of garbage is left to interpretation. Volume estimates will differ before and after processing. Some processing procedures may not allow for a usable estimate of volume, e.g. the continuous processing of food waste. Such factors should be taken into consideration when making and interpreting entries made in a record.

Appendix 2A Record of garbage discharges

**PART I**

**For all garbage other than cargo residues as defined in regulation 1.2 (Definitions)**

**(All ships)**

|  |  |  |
| --- | --- | --- |
| Ship’s Name | Distinctive number or letters | IMO No. |

Garbage categories

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| A - Plastics | B - Food wastes | C - Domestic wastes | D - Cooking oil | |
| E - Incinerator Ashes | F - Operational wastes | G - Animal Carcasses | H - Fishing gear | I - E-waste |

Discharges under MARPOL Annex V regulations 4 (Discharge of garbage outside special areas), 5 (Special requirements for discharge of garbage from fixed or floating platforms) or 6 (Discharge of garbage within special areas) or chapter 5 of part II-A of the Polar Code

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Date / Time | Position  of the Ship(Lat/Long) or port if discharged ashore or name of ship if discharged to another ship | Categ-ory | Estimated  Amount  Discharged | | Estimated Amount Incinerated (m3) | Remarks: (e.g. start/stop time and position of inciner-ation : general remarks | Certification/Signature |
|  |  |  | Into sea (m3) | To reception facilities or to another ship(m3) |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**Exceptional discharge or loss of garbage under regulation 7 (Exceptions)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date / Time | Position  of the Ship(Lat/Long and Water Depth if known) | Category | Estimated Amount lost or Discharged (m3) | | Remarks on the reason for the discharge or loss and general remarks (e.g. reasonable precautions taken to prevent or minimize such discharge or accidental loss and general remarks) | Certification/Signature |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Master’s Signature: Date:

Appendix 2B Record of garbage discharges

**PART II**

**For all cargo residues as defined in regulation 1.2 (Definitions)**

**(All ships)**

|  |  |  |
| --- | --- | --- |
| Ship’s Name | Distinctive number or letters | IMO No. |

Garbage categories

|  |  |
| --- | --- |
| J. - Cargo residues (non-HME) | K. - Cargo residues (HME) |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date / Time | Position  of the Ship(Lat/Long) or port if discharged ashore | Category | Estimated Amount  Discharged | | Start and Stop positions of the ship for discharges into the sea | Certification/Signature |
|  |  |  | Into sea (m3) | To reception facilities or to another ship(m3) |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Master’s Signature: Date:

Appendix 3 Training record

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date | Training | Ship’s Position | Participants | Signatures |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Appendix 4 Definitions

When developing a Garbage Management Plan, you will need to know the following definitions:

1. Animal carcasses means the bodies of any animals that are carried on board as cargo and that die or are euthanized during the voyage.

2. Cargo residues means the remnants of any cargo which are not covered by other Annexes to the present Convention and which remain on the deck or in holds following loading or unloading, including loading and unloading excess or spillage, whether in wet or dry condition or entrained in wash water but does not include cargo dust remaining on the deck after sweeping or dust on the external surfaces of the ship.

3. Cooking oil means any type of edible oil or animal fat used or intended to be used for the preparation or cooking of food, but does not include the food itself that is prepared using these oils.

4. Domestic wastes means all types of wastes not covered by other Annexes that are generated in the accommodation spaces on board the ship. Domestic wastes do not include grey water.

5. En route means that the ship is underway at sea on a course or courses, including deviation from the shortest direct route, which as far as practicable for navigational purposes, will cause any discharge to be spread over as great an area of the sea as is reasonable and practicable.

6. Fishing gear means any physical device or part thereof or combination of items that may be placed on or in the water or on the sea-bed with the intended purpose of capturing, or controlling for subsequent capture or harvesting, marine or fresh water organisms.

7. Fixed or floating platforms means fixed or floating structures located at sea which are engaged in the exploration, exploitation or associated offshore processing of sea-bed mineral resources.

8. Food wastes means any spoiled or unspoiled food substances and includes fruits, vegetables, dairy products, poultry, meat products and food scraps generated aboard ship.

9. Garbage means all kinds of food wastes, domestic wastes and operational wastes, all plastics, cargo residues, incinerator ashes, cooking oil, fishing gear, and animal carcasses generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other Annexes to the present Convention. Garbage does not include fresh fish and parts thereof generated as a result of fishing activities undertaken during the voyage, or as a result of aquaculture activities which involve the transport of fish including shellfish for placement in the aquaculture facility and the transport of harvested fish including shellfish from such facilities to shore for processing.

10. Incinerator ashes means ash and clinkers resulting from shipboard incinerators used for the incineration of garbage.

11. Nearest land. The term "from the nearest land" means from the baseline from which the territorial sea of the territory in question is established in accordance with international law, except that, for the purposes of the present Annex, ''from the nearest land'' off the north-eastern coast of Australia shall mean from a line drawn from a point on the coast of Australia in:

latitude 11°00΄ S, longitude 142°08΄ E

to a point in latitude 10°35΄ S, longitude 141°55΄ E,

thence to a point latitude 10°00΄ S, longitude 142°00΄ E,

thence to a point latitude 09°10΄ S, longitude 143°52΄ E,

thence to a point latitude 09°00΄ S, longitude 144°30΄ E,

thence to a point latitude 10°41΄ S, longitude 145°00΄ E,

thence to a point latitude 13°00΄ S, longitude 145°00΄ E,

thence to a point latitude 15°00΄ S, longitude 146°00΄ E,

thence to a point latitude 17°30΄ S, longitude 147°00΄ E,

thence to a point latitude 21°00΄ S, longitude 152°55΄ E,

thence to a point latitude 24°30΄ S, longitude 154°00΄ E,

thence to a point on the coast of Australia in

latitude 24°42΄ S, longitude 153°15΄ E.

12. Operational wastes means all solid wastes (including slurries) not covered by other Annexes that are collected on board during normal maintenance or operations of a ship, or used for cargo stowage and handling. Operational wastes also include cleaning agents and additives contained in cargo hold and external wash water.

Operational wastes does not include grey water, bilge water, or other similar discharges essential to the operation of a ship, taking into account the guidelines developed by the Organization.

13. Plastic means a solid material which contains as an essential ingredient one or more high molecular mass polymers and which is formed (shaped) during either manufacture of the polymer or the fabrication into a finished product by heat and/or pressure. Plastics have material properties ranging from hard and brittle to soft and elastic. For the purposes of this annex, "all plastics" means all garbage that consists of or includes plastic in any form, including synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products.

14. Special area means a sea area where for recognised technical reasons in relation to its oceanographic and ecological condition and to the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by garbage is required.

15. **Dishwater**means the residue from the manual or automatic washing of dishes and cooking utensils which have been pre-cleaned to the extent that any food particles adhering to them would not normally interfere with the operation of automatic dishwashers.

16. **E-waste** means electrical and electronic equipment used for the normal operation of the ship or in accommodation spaces, including all components, subassemblies and consumables, which are part of the equipment at the time of discarding, with the presence of material potentially hazardous to human health and/or the environment.

17. **Grey Water** means drainage from dishwater, shower, laundry, bath and washbasin drains. It does not include drainage from toilets, urinals, hospitals and animal spaces, as defined in regulation 1.3 of MARPOL Annex IV (sewage) and drainage from cargo spaces. Grey water is not considered garbage in the context of MARPOL Annex V.

18. **Recycling** means the activity of segregating and recovering components and materials for reprocessing.

19. **Reuse** means the activity of recovering components and materials for further use without reprocessing.

Appendix 5 Inadequacy of port reception facilities

Please Refer to MEPC.1/Circ.834 as updated

Appendix 6 Sample placards

Sample placard targeting crew and shipboard operations

|  |
| --- |
| Discharge of all garbage into the sea is prohibited except provided otherwise  The MARPOL Convention and domestic law prohibit the discharge of most garbage from ships. Only the following garbage types are allowed to be discharged and under the specified conditions.  Outside special areas designated under MARPOL Annex V and Arctic Waters:  Comminuted or ground food wastes (capable of passing through a screen with openings no larger than 25 mm) may be discharged not less than 3 nm from the nearest land.  Other food wastes may be discharged not less than 12 nm from the nearest land.  Cargo residues classified as not harmful to the marine environment may be discharged not less than 12 nm from the nearest land.  Cleaning agents or additives in cargo hold, deck and external surfaces washing water may be discharged only if they are not harmful to the marine environment.  With the exception of discharging cleaning agents or additives that are not harmful to the marine environment and are contained in washing water, the ship must be en route and as far as practicable from the nearest land.  Within special areas designated under MARPOL Annex V and Arctic waters:  More stringent discharge requirements apply for the discharges of food wastes and cargo residues; AND  Consult MARPOL Annex V, chapter 5 of part II-A of the Polar Code and the shipboard garbage management plan for details.  For all areas of the sea, ships carrying specialized cargoes such as live animals or solid bulk cargoes should consult Annex V and the associated Guidelines for the implementation of Annex V.  Discharge of any type of garbage must be entered in the Garbage Record Book  Violation of these requirements may result in penalties. |

Sample placard targeting fixed or floating platforms and ships operating within 500 m of such platforms

|  |
| --- |
| Discharge of all garbage into the sea is prohibited except provided otherwise  The MARPOL Convention and domestic law prohibit the discharge of all garbage into the sea from fixed or floating platforms and from all other ships when alongside or within 500 metres of such platforms.  Exception: Comminuted or ground food wastes may be discharge from fixed or floating platforms located more than 12 miles from the nearest land and from all other ships when alongside or within 500 metres of such platforms. Comminuted or ground food wastes must be capable of passing through a screen no larger than 25 millimetres.  Discharge of any type of garbage must be entered in the Garbage Record Book  Violation of these requirements may result in penalties. |

Sample placard targeting passengers

|  |
| --- |
| Discharge of all garbage into the sea is prohibited except provided otherwise  The MARPOL Convention and domestic law generally prohibit the discharge of most forms of garbage from ships into the sea.  Violation of these requirements may result in penalties.  All garbage is to be retained on board and placed in the bins provided. |

Appendix 7 Criteria for the classification of solid bulk cargoes as harmful to the marine environment

For the purpose of this Annex, cargo residues are considered to be harmful to the marine environment (HME) if they are residues of solid bulk cargoes which are classified according to the criteria of the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) meeting the following parameters1:

.1 Acute Aquatic Toxicity Category 1; and/or

.2 Chronic Aquatic Toxicity Category 1 or 2; and/or

.3 Carcinogenicity2 Category 1A or 1B combined with not being rapidly degradable and having high bioaccumulation; and/or

.4 Mutagenicity2 Category 1A or 1B combined with not being rapidly degradable and having high bioaccumulation; and/or

.5 Reproductive Toxicity2 Category 1A or 1B combined with not being rapidly degradable and having high bioaccumulation; and/or

.6 Specific Target Organ Toxicity Repeated Exposure2 Category 1 combined with not being rapidly degradable and having high bioaccumulation; and/or

.7 Solid bulk cargoes containing or consisting of synthetic polymers, rubber, plastics, or plastic feedstock pellets (this includes materials that are shredded, milled, chopped or macerated or similar materials).

1 The criteria are based on UN GHS. For specific products (e.g. metals and inorganic metal compounds) guidance available in UN GHS, annexes 9 and 10 is essential for proper interpretation of the criteria and classification and should be followed.

2 Products that are classified for Carcinogenicity, Mutagenicity, Reproductive Toxicity or Specific Target Organ Toxicity Repeated Exposure for oral and dermal hazards or without specification of the exposure route in the hazard statement.

For further information, please contact us at:

marpol@lr.org

www.lr.org

Lloyd’s Register Group Limited, its subsidiaries and affiliates and their respective officers, employees or agents are, individually and collectively, referred to in this clause as ‘Lloyd’s Register’. Lloyd’s Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd’s Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Lloyd’s Register and variants of it are trading names of Lloyd’s Register Group Limited, its subsidiaries and affiliates.

Copyright © Lloyd’s Register EMEA. 2018

A member of the Lloyd’s Register group.