

ABS Garbage Management Manual

Every ship of 100 gross tonnage and above, and every ship certified to carry 15 persons or more, and fixed or floating platforms shall carry a garbage management plan.

Additionally, every ship of 400 gross tonnage and above, and every ship certified to carry 15 persons or more engaged in voyages to ports or offshore terminals under the jurisdiction of another party to MARPOL and every fixed or floating platform shall carry a Garbage Record Book.

Also, every ship of 12 meters or more in length overall and fixed or floating platforms shall display placards to notify the crew and passengers of the ship's disposal requirements.

The garbage management plan shall provide written procedures for minimizing, collecting, storing, processing and disposing of ship-generated 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 in accordance with the guidelines developed by the organization and written in the working language of the crew. There shall also be a Garbage Record Book for recording each discharge into the sea or a reception facility or completed incineration.

- **What is the intent of the Garbage Management Manual?**

To provide a systematic approach to the enforcement and control of garbage in the marine environment.

- **How will that be accomplished?**

By requiring shipboard management plans for crews to follow which provide written procedures for minimizing, collecting, storing, processing and disposing of ship-generated garbage, including the use of equipment on board, in accordance with Regulation 10[2] of Annex V MARPOL 73/78.

- **Do I need to comply?**

Every ship of 100 tons gross tonnage and above, and every ship which is certified to carry 15 persons or more, and fixed or floating platforms must comply by developing and implementing a garbage management system as specified in a Garbage Management Manual.

- **Is there a waiver on compliance with the Garbage Record Book requirement?**

Yes, if the Administration agrees for:

- [1] any ship engaged on voyages of one hour or less in duration which is certified to carry 15 persons or more; or
- [2] Fixed or floating platforms

- **Does there have to be an onboard person in charge of carrying out the garbage management plan?**
Yes. The company has to appoint a designated person or persons on board with the responsibility for carrying out the garbage management plan. The choice will depend on ship type and trade.
- **Are crew responsibilities and procedures to be identified?**
Yes. All aspects of handling and storing of garbage by crew should be identified in the appropriate operating procedures and manual.
- **Is it possible to use shipboard equipment for processing garbage?**
Yes. Depending on ship type, area of operation and size of crew, ships may be equipped with incinerators, compactors, comminuters or other devices for garbage processing.
- **Does my garbage management plan have to be approved or certified?**
No. but there must be a garbage management plan for the crew to follow in accordance with the guidelines for the implementation of Annex V MARPOL 73/78. It shall provide written procedures for minimizing, collecting, storing, processing and disposing of garbage, including the use of equipment on board. It shall also designate the person or persons in charge of carrying out the plan. There shall also be a record book for recording each discharge into the sea, to a reception facility or a completed incineration.
- **Do garbage records have to be kept?**
Yes. Each discharge into the sea or to a reception facility, or completed incineration, shall be recorded in the Garbage Record Book and signed for on the date of the incineration or discharge by the officer in charge.
- **Is training required?**
Yes. Training should include instruction on the definitions of garbage as well as the applicable requirements for handling and disposal.
- **Can port State inspections be carried out?**
Yes. The competent authority of the Government of a Party to the Convention may inspect the Garbage Record Book onboard any ship to which regulation ten applies while the ship is in its ports or offshore terminals, and may make a copy of any entry in that book, and may require the master of the ship to certify that the copy is a true copy of such an entry.

GARBAGE MANAGEMENT MANUAL

Regulations for the
Prevention of Pollution by
Garbage from Ships – Annex V of MARPOL 73/78

M.V./S.S. _____

Prepared by



INTRODUCTION

The intent of this document is to provide shipowners/operators with general information on the requirements for complying with regulation 10 of Annex V. Compliance with the provisions of Annex V will require careful planning by the owner/operator and proper execution by shipboard personnel. When developing the most appropriate procedures for handling and storing garbage. Factors to take into account include type and size of the ship, the area of operation (e.g. distance from nearest land), shipboard garbage processing equipment and storage space, crew size, duration of the voyage and regulations and reception facilities at ports of call.

APPLICABILITY

REGULATORY REQUIREMENTS

Amendments to Annex V of MARPOL 73/78.

Placards, garbage management plans and garbage recordkeeping.

- (1) Every ship of 12 meters or more in length overall 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 this Annex, 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.

- (2) 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 ship-generated 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 in accordance with the guidelines developed by the Organization and written in the working language of the crew.
- (3) Every ship of 400 gross tonnage and above and every ship which is certified to carry 15 or more persons engaged in voyages to ports or offshore terminals under the jurisdiction of another Party to the Convention and every fixed and floating platform 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 to this Annex:
 - Each discharge into the sea, to a reception facility or 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. Where the entries are also made in an official language of the State whose flag the ship is entitled to fly, these entries shall prevail in case of a dispute or discrepancy.
 - The entry for each discharge or incineration shall include date and time, position of the ship, category of the garbage and the estimated amount discharged or incinerated;

- The **Garbage Record Book** shall be kept on board the ship or the fixed or floating platform, and in such a place as to be readily available for inspection at all reasonable times. This document shall be preserved for a period of two years from the date of the last entry made in it;
 - 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 location, circumstances of, and the reasons for the discharge or loss, details of the items discharged or lost and the reasonable precautions taken to prevent or minimize such discharge or accidental loss.
- (4) The Administration may waive the requirements for **Garbage Record Books** for:
- Any ship engaged on voyages of one hour or less in duration which is certified to carry 15 persons or more; or
 - Fixed or floating.
- (5) 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.
- (6) The accidental loss or discharge of fishing gear as provided for in regulations 7.1.3 and 7.1.4 which poses a significant threat to the marine environment or navigation shall be reported to the State whose flag the ship is entitled to fly, and, where the loss or discharge occurs within waters subject to the jurisdiction of a coastal State, also to that coastal State.

COMPLIANCE DATES

On 15 July 2011, IMO adopted, by resolution MEPC.201(62), amendments to the annex of the Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973. Regulation 10 to Annex V of MARPOL 73/78 entered into force effective 1 January 2013. As such, a revised **Garbage Management Plan** on every ship will need to be brought into compliance with MEPC.201(62)

A ship's garbage management plan should contain a list of the particular ship's equipment and arrangements for the handling of ship-generated garbage, and may contain extracts from and/or references to existing company instructions.

PROVISIONING PRACTICES

Although discharge at sea, (except in special areas) of a wide range of ship-generated garbage is permitted outside specified distances from the nearest land, it is recommended that whenever practicable ships use, as a primary means, port reception facilities. To minimize the generation of waste, provisioning practices should be reviewed with ship's suppliers in order to determine the optimum packaging for the products. Options include:

- Reusable packaging and use of containers. Disposable cups, utensils, dishes, towels and rags and other convenience items should be limited and replaced by washable items when possible.
- Where practical options exist, provisions packaged in or made of materials other than disposable plastic should be selected to replenish ship's supplies unless a reusable plastic alternative is available.
- Stowage systems and methods that reuse coverings, dunnage, shoring, lining and packing materials.
- Dunnage, lining and packaging materials generated in port during cargo activities should be disposed of at the port reception facilities as discharge into the sea is not permitted.

DESIGNATED PERSON IN CHARGE (Environmental Control Officer)

As required in Regulation 10 (2), a designated person on board shall be in charge of carrying out the Garbage Management Plan. Such a decision by a company will be determined by the ship type and trade. For ships other than passenger ships, a senior deck or engineer officer would be most appropriate. For passenger ships, more than one head of a department may be selected but with a coordinated effort to ensure compliance.

The onboard responsibility for carrying out the garbage management plan is:

- **(COMPANY TO IDENTIFY DESIGNATED CREW MEMBER or MEMBERS)**

Support to the designated person can be provided by departmental staff. Such support is necessary in the collection, separation and processing of garbage to ensure that the onboard procedures are carried out in accordance with the Garbage Management Plan.

Support staff representatives from deck, engine, catering or other job responsibilities are:

- **(COMPANY TO IDENTIFY DESIGNATED SUPPORT STAFF)**

From a regulatory perspective, the designated person in charge shall ensure that the procedures within the plan are implemented, which includes:

- Display placards in the appropriate language are positioned to notify the crew and passengers of the disposal requirements prescribed in regulations 3, 4, 5 and 6 of Annex V for garbage disposal within and outside special areas.
- The prescribed entries for each discharge operation or completed incineration are made in the Garbage Record Book.

DEFINITIONS

In developing a Garbage Management Plan, it is important to recognize the following definitions:

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

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.

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.

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.

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

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

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.

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 it does not include drainage from cargo spaces. Grey water is not considered garbage in the context of Annex V.

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

Plastic means a solid material which contains as an essential ingredient one or more high molecular 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.

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^[1], 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 (see MEPC.219(63)).

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

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

[1] *Includes soot that is entrained in water wash from the gas side of the economizer*

GENERAL INFORMATION

The most appropriate procedures for handling and storing garbage will vary depending on factors such as the type and size of the ship, the area of operation (e.g. special area, distance from nearest land or ice-shelf), shipboard garbage processing equipment and storage space, number of crew or passengers, duration of voyage and regulations and reception facilities at ports of call. However, in view of the cost involved with the different garbage handling options, it is economically advantageous to first, limit the amount of material that may become garbage from being brought on board the ship and second, separate garbage eligible for discharge into the sea from other garbage that may not be discharged into the sea.

Given the importance of waste management plans, crew responsibilities and procedures for all aspects of handling and storing garbage should be identified in the appropriate crew and vessel operating manuals. Procedures for handling ship-generated garbage can be divided into four phases: collection, processing, storage and disposal.

COLLECTION

Procedures for collecting garbage 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. Receptacles on board can be in the form of drums, metal bins, cans, container bags, or wheelie bins. The recommended garbage types that should be separated are:

- Non-recyclable plastics and plastics mixed with non-plastic garbage;
- Rags
- Recyclable material:
 - cooking oil;
 - glass;
 - aluminum cans
 - paper, cardboard, corrugated board;
 - wood;
 - metal
 - plastics; (including Styrofoam or other similar plastic material); and
- Garbage that might present a hazard to the ship or crew (e.g. oily rags, light bulbs, acids, chemical, batteries, etc.).

Receptacles should be clearly marked and distinguished by color, graphics, shape, size or location. These receptacles should be provided in appropriate spaces throughout the ship. Crew members and passengers should be advised of what garbage should or should not be discarded in them. Crew responsibilities should be assigned for collecting or emptying of these receptacles and taking the garbage to the appropriate processing or storage location.

Plastics and Plastics Mixed with Non-plastic Garbage

Discharge into the sea of all plastics, including but not limited to synthetic ropes, synthetic fishing nets, plastic garbage bags and incinerator ashes from plastic products is prohibited. When plastic garbage is not separated from other garbage, the mixture must be treated as if it were all plastic.

Food Wastes

Some governments have regulations for controlling 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, sterilizing, double bagging or other special treatment and therefore these materials should be kept separate from other garbage and disposed of in accordance with the laws of the receiving country. Precautions must be taken to ensure that plastics contaminated by food wastes (e.g. plastic food wrappers) are not discharged at sea with other food wastes.

PROCESSING

Depending on factors such as the type of ship, area of operation, number of crew or passengers, etc., 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 for operating this equipment on a schedule commensurate with ship needs.

Use of such processing equipment makes it possible to reduce shipboard space requirements for storing garbage, make it easier to discharge garbage in ports, and enhance assimilation of garbage discharged into the marine environment.

Compactors

Compaction reduces the volume of garbage. In most cases, the output from compactor is a block of material which facilitates the shipboard storage of garbage and its discharging of the material in a port facility.

Comminuters

Outside special areas, ships operating primarily beyond three nautical miles 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 millimeters. Such a process is recommended even beyond 12 nautical miles because the particle size hastens assimilation into the marine environment.

When operating inside a special area, all food wastes must be comminuted or ground prior to discharge in to the sea. All discharges are to be as far as practicable and not less than 12 nautical miles from the nearest land or ice-shelf.

Incinerators

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 IMO Standard Specification for Shipboard Incinerators (IMO Resolution MEPC.76(40) as amended). MARPOL Annex VI requires shipboard incinerators installed after 1 January 2000 to be type approved and meet specific air pollution criteria. Incinerators should only be used to incinerate materials that are specified by the incinerator manufacturer. Annex VI prohibits the incineration of MARPOL Annex I, II and III cargo residues, related contaminated packing materials, polychlorinated biphenyls (PCBs), garbage contaminated with more than traces of heavy metals, refined petroleum products containing halogen compounds and exhaust gas cleaning systems. The incineration of sewage sludge and sludge oil, generated during the normal operation of the ship, is allowed in main or auxiliary power plant or boilers under Annex VI, but incineration by such methods is banned in ports, harbors and estuaries.

Incinerators installed prior to 01 January 2000 on board ships flying the flag of MARPOL Annex VI signatory State may still be used after entry into force of MARPOL Annex VI.

NOTE: RESIDUE FROM PLASTIC INCINERATION IS STILL CONSIDERED PLASTIC AND THUS CAN NOT BE DISCHARGED OVERBOARD.

Due to the potential environmental and health effects from combustion of by-products, shipboard incineration of polyvinyl chlorides (PVCs) shall be prohibited, except in shipboard incinerators for which IMO Type Approval Certificates have been issued (MEPC.59(33) or MEPC.76(40) specifications).

| |
|--|
| Special rules on incineration may be established by authorities in some ports and may exist in some special areas. Prior to using an incinerator while in port, permission may be required from the port authority concerned. In general, the use of shipboard garbage incinerators in ports in or near urban areas is discouraged as their use will add to possible air pollution in these areas. |
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STORAGE

Garbage collected from various areas throughout the ship should be delivered to designated processing or storage locations. Garbage that must be returned to port for discharge at port reception facilities may require storage until arrangements can be made to discharge it ashore for appropriate processing depending on the length of the voyage or availability of port reception facilities. Garbage should be stored in a manner which avoids health and safety hazards.

Sufficient storage space and equipment (e.g. cans, drums, bags or other containers) should be provided. Where storage space is limited, ship operators are encouraged to consider installation of compactors or incinerators.

All processed and unprocessed garbage stored for any length of time should be in tight, securely covered containers in order to prevent the unintentional discharge of stored garbage.

Food wastes and other garbage which are returned to port and which may carry disease 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 in separate, clearly marked containers to avoid incorrect discharge and facilitate proper handling and treatment on land.

DISCHARGE

Although discharge into the sea of limited types of garbage is permitted under Annex V, discharge of garbage to port reception facilities should be given primary consideration. When discharging garbage, the following points should be considered:

- Table 1 summarizes the requirements for garbage permitted to be discharged into the sea. In general the discharge shall take place when the ship is en route and as far as practicable from the nearest land. Attempts should be made to spread the discharge over as wide an area as possible and in deep water (50 meters or more). Prevailing currents and tidal movements should be taken into consideration when discharging into the sea is permitted.
- To ensure timely transfer of ship-generated garbage to port reception facilities, ship agents are to be advised for guidance. Disposal needs should be identified particularly when arrangements are necessary for garbage requiring special handling.

MANAGEMENT OF CARGO RESIDUES OF SOLID BULK CARGOES

Cargo residues are included in the definition of garbage within the meaning of Annex V, regulation 1.9 and may be discharged as follows:

- 12 nautical miles from the nearest land for cargo residues that cannot be recovered using commonly available methods for unloading. These cargo residues shall not contain any substances classified as harmful to the marine environment
- Discharge of cargo residues that cannot be recovered using commonly available methods for unloading, where all the following conditions are satisfied:
 - cargo residues, cleaning agents or additives, contained in hold washing water do not include any substances classified as harmful to the marine environment, taking into account guidelines developed by the Organization;
 - both the port of departure and the next port of destination are within the special area and the ship will not transit outside the special area between those ports;
 - no adequate reception facilities are available at those ports taking into account guidelines developed by the Organization; and
 - where the three conditions above have been fulfilled, discharge of cargo hold washing water containing residues shall be made as far as practicable from the nearest land or the nearest ice shelf and not less than 12 nautical miles from the nearest land or the nearest ice shelf

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.

TRAINING

Training should be provided for all crew members who are involved in operating the garbage processing equipment, and handling and disposing of garbage as part of their operational responsibilities. Such a program should be reviewed annually and should define what constitutes garbage and the applicable regulations for handling and disposal.

Material for training could include printed materials (e.g. placards, posters, brochures, etc.), photographs, DVDs, audio and video tapes, and films as well as synopses of training programs, seminars and formal curricula.

RECOMMENDATION FOR GOVERNMENTS

Governments are recommended to require all ships of their registry to permanently post a summary declaration stating that the prohibition and restrictions for discharging garbage from ships under Annex V and the penalties for failure to comply. It is suggested this declaration be placed on a placard at least 12.5 cm by 20 cm, made of durable material and fixed in a conspicuous place in galley spaces, the mess room(s), bridge, main deck and other areas of the ship as, appropriate. The placard should be printed in the language or languages understood by the crew and passengers. Ships which operate internationally will also have placards printed in English, French or Spanish.

TABLE 1 – SUMMARY OF RESTRICTIONS TO THE DISCHARGE OF GARBAGE INTO THE SEA UNDER REGULATIONS 4, 5 AND 6 OF MARPOL ANNEX V

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

| Garbage type ¹ | All ships except platforms ⁴ | | Offshore platforms located more than 12 nm from nearest land and ships when alongside or within 500 metres of such platforms ⁴ Regulation 5 |
|--|--|--|--|
| | Outside special areas Regulation 4 (Distances are from the nearest land) | Within special areas Regulation 6 (Distances are from nearest land or nearest ice-shelf) | |
| Food waste comminuted or ground ² | ≥3 nm, en route and as far as practicable | ≥12 nm, en route and as far as practicable ³ | Discharge permitted |
| Food waste not comminuted or ground | ≥12 nm, en route and as far as practicable | Discharge prohibited | Discharge prohibited |
| Cargo residues ^{5, 6} not contained in washwater | ≥ 12 nm, en route and as far as practicable | Discharge prohibited | Discharge prohibited |
| Cargo residues ^{5, 6} contained in washwater | | ≥ 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2) | |
| Cleaning agents and additives ⁶ contained in cargo hold washwater | Discharge permitted | ≥ 12 nm, en route and as far as practicable (subject to conditions in regulation 6.1.2) | Discharge prohibited |
| Cleaning agents and additives ⁶ in deck and external surfaces washwater | Discharge permitted | Discharge permitted | Discharge prohibited |
| 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 |

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.

⁴ Offshore platforms located 12 nm from 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 m of such platforms.

⁵ Cargo residues means 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.

Table 2: Options for shipboard handling and discharge of garbage

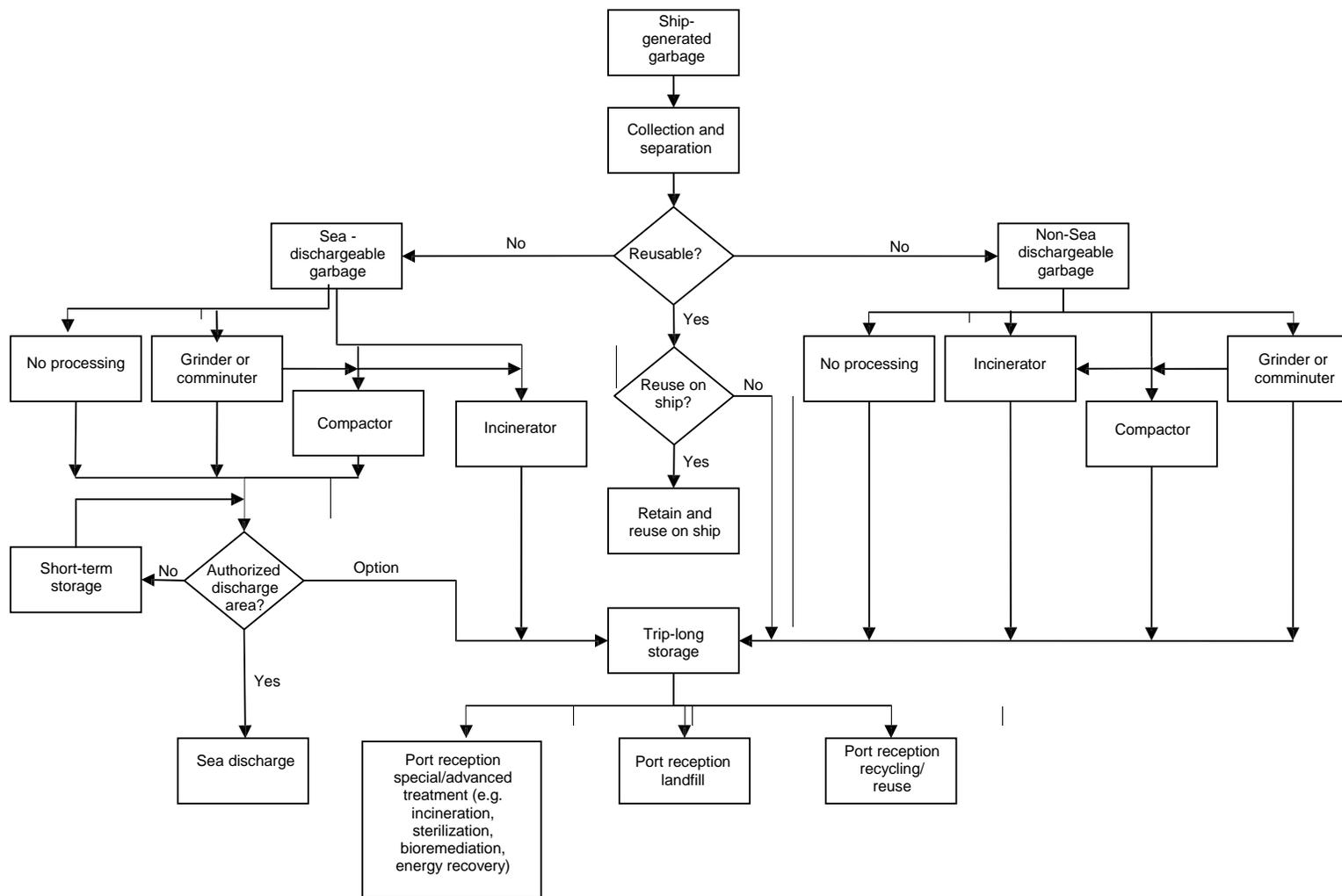


TABLE 3 – COMPACTION OPTIONS FOR SHIPBOARD-GENERATED GARBAGE

| Examples of garbage | Special handling by vessel personnel before compaction | Compaction characteristics | | | Onboard storage space |
|--|--|----------------------------|-----------------------------|---------------------------|-----------------------|
| | | Rate of alteration | Retention 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, fiber and paper board | Minor - reduce material to size for feed, minimal manual labor | Rapid | Approximately 80% | Medium | Minimum |
| Small metal drums*, uncomminuted cargo packing, large pieces of wood | Moderate - longer manual labor time required to size material for feed | Slow | Approximately 50% | Relatively low | Moderate |
| Uncomminuted plastics | Major-very long manual labor 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 |

*Small and large drums can be compacted very easily with the proper device – a large number of these devices have been designed for remote locations, and therefore they are small and easy to operate with excellent results. It should be noted, that the compaction of drums is probably restricted to larger vessels, due to lack of space on smaller (fishing) vessels

TABLE 4 - INCINERATION* OPTIONS FOR SHIPBOARD-GENERATED GARBAGE

| Examples of garbage | Special handling by vessel personnel** before incineration | Incineration characteristics | | | | Onboard storage space |
|---|---|------------------------------|---------------------|--------------------------------|--|-----------------------|
| | | Combustibility | Reduction of volume | Residual | Exhaust | |
| Paper packaging, food and beverage containers | Minor - easy to feed into hopper | High | Over 95% | Powder ash | Possibly smoky and not hazardous | Minimum |
| Fiber and paper board | Minor - reduce material to size for feed; minimum manual labor | 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 labor time for size reduction | High | Over 95% | Powder ash | Possibly smoky and not hazardous based on incinerator design | Minimum |
| Rubber hoses and bulk pieces | Major manual labor time for 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 10% | Slag | Possibly smoky and not hazardous | Moderate |
| Metal cargo, bulky containers, thick metal items | Major manual labor time for size reduction (not easily incinerated) | Very Low | Less 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 10% | Slag | Possibly smoky and not hazardous | Moderate |
| Wood, cargo containers and large wood scraps | Moderate manual labor time for size reduction | High | Over 95% | Powder ash | Possibly smoky and not hazardous | Minimum |

* Check local rules for possible reductions

** 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.

APPENDIX

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 73/78) 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, 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 73/78 should also be referred to for relevant information.

3. DESCRIPTION OF THE GARBAGE

The garbage is to be grouped into categories for the purpose of the Garbage Record Book (or ship's official log book) as follows:

- A. Plastics
- B. Food wastes
- C. Domestic wastes
- D. Cooking oil
- E. Incinerator ashes
- F. Operational wastes
- G. Cargo residues
- H. Animal carcass(es)
- I. Fishing gear⁴

4. ENTRIES IN THE GARBAGE RECORD BOOK

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

- (a) When garbage is discharged to reception facilitiesⁱ ashore or to other ships:
 - i. Date and time of discharge
 - ii. Port or facility, or name of ship
 - iii. Categories of garbage discharged
 - iv. Estimated amount discharged for each category in M³
 - v. Signature of the officer in charge of the operation

- (b) When garbage is incinerated:
 - i. Date and time of start and stop of incineration
 - ii. Position of the ship (latitude and longitude) at the start and stop of incineration
 - iii. Categories of garbage incinerated
 - iv. Estimated amount incinerated in M³
 - v. Signature of the officer in charge of the operation.

- (c) When garbage is discharged into the sea in accordance with regulations 4, 5 or 6 of Annex V of MARPOL:
 - i. Date and time of discharge
 - ii. Position of the ship (latitude and longitude). Note: for cargo residue discharges, include discharge start and stop positions.
 - iii. Category of garbage discharged
 - iv. Estimated amount discharged for each category in cubic meters
 - v. Signature of the officer in charge of the operation.

- (d) Accidental or other exceptional discharges or loss of garbage into the sea, including in accordance with regulation 7 of Annex V of MARPOL:
 - i. Date and time of occurrence
 - ii. Port or position of the ship at time of occurrence (latitude, longitude and water depth if known)
 - iii. Categories of garbage discharged or lost
 - iv. Estimated amount and category of garbage
 - v. The reason for the discharge or loss and general remarks.

4.2 Amount of Garbage

The amount of garbage onboard should be estimated in M³, if possible separately according to category. The Garbage Record Book contains many references to estimated amount of garbage. It is recognized 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.

RECORD OF GARBAGE DISCHARGES

Ship's Name _____

Distinctive No., or Letters _____

IMO No. _____

Garbage Categories



- 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. Cargo residues
- H. Animal carcass(es)
- I. Fishing gear

NEW TABLE LAYOUT AS BELOW:

| Date/ Time | Position of the Ship/Remarks (e.g., accidental loss) | Category | Estimated Amount Discharged or Incinerated | To Sea | To Reception Facility | Incineration | Certification/ Signature |
|-----------------------|---|-----------------|---|-------------------|--------------------------------------|---------------------|-------------------------------------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Master's signature: _____ Date: _____

Appendix

Form for reporting alleged inadequacy of port reception facilities for garbage.

1. Country _____
Name of port or area _____
Location in the port (e.g. berth/terminal/jetty) _____
Date of incident _____
2. Type and amount of garbage for discharge to facility:
 - a. Total amount:
food waste M³ cargo-associated waste M³ maintenance waste M³ other M³
 - b. Amount not accepted by the facility
food waste M³ cargo-associated waste M³ maintenance waste M³ other M³

3. Special problems encountered:

- Undue delay
- Inconvenient location of facilities
- Unreasonable charges for use of facilities
- Use of facility not technically possible
- Special national regulations
- Other

4. Remarks (e.g. information received from port authorities or operators of reception facilities)

5. Ship's particulars _____

Name of ship _____

Owner or operator _____

Distinctive number or letters _____

Port of registry _____

Number of persons on board _____

Date of completion of form

Signature of master

ⁱ Ship's masters should obtain from the operator of the reception facilities, which includes barges and trucks, a receipt or certificate specifying the estimated amount of garbage transferred. The receipts or certificates must be kept together with the Garbage Record Book.