

DEPARTMENT OF THE MARINE

MARINE NOTICE NO. 4 OF 1989.

**Watertight Subdivision Arrangements for Passenger Ships - Guidelines for Use and Operation of Watertight Doors.**

**NOTICE TO SHIPOWNERS, MASTERS, CHIEF ENGINEERS AND ALL OFFICERS**

1. The Merchant Shipping <Closing of openings in Hulls and in Watertight Bulkheads> Rules, 1988 (S.I. No. 371 of 1988) came into force on 1st January, 1989. They revoke the Merchant Shipping <Closing of Openings in Hulls and in Watertight Bulkheads> Rules, 1983 (S.I. No. 315 of 1983).
2. These Rules apply to all Irish Registered Passenger Ships. They include such requirements as appear to the Minister for the Marine to be necessary for the closing and operation of watertight doors and other closing appliances and devices, for their inspection, for practice drills and for relevant entries in official log books.
3. Rules 5 and 6 of the above Rules requires that watertight doors are kept closed when the vessel is at sea, however, the Rules also make provision for certain conditions during which doors may be open. Doors which are open in such conditions must be closed in circumstances which, in the opinion of the Master might endanger the safety of the vessel.
4. In order to assist in appreciating the importance of watertight doors and other closing appliances in watertight bulkheads, a general outline and description of the principles of use and operation of such devices is contained in Annex 1.
5. The Rules require the carrying on board the vessel of "Operational Instructions" (Rule 6) outlining the use of watertight doors and other closing appliances and devices in watertight bulkheads. These "Operational Instructions" will be compiled individually for each vessel and will require the approval of the Minister. Guidelines for the content and format of such instructions is contained in Annex II of this document. The "Operational Instructions" should be compiled in consultation with the Master and Chief Engineer and submitted to the Department of the Marine for approval. When approved, a copy of the instructions should be attached to or placed in the Ship's Stability Book.

Fionan O'Muircheartaigh  
Runai

Department of the Marine  
Dublin 2

January 1989

M S 5/167/6

## ANNEX 1

### Principles of use and operation of Watertight doors

#### General Comment.

Most passenger ships are subdivided longitudinally into watertight compartments by the use of transverse watertight bulkheads. These bulkheads extend from the bottom of the hull up to the bulkhead deck. The spacing of these bulkheads is determined at design stage with the intention of limiting the extent of flooding in the event of the hull being breached and ensuring the survivability of the vessel with a specified volume of flooding. It is obvious, therefore, that the survivability of the vessel depends, amongst other factors, on these watertight bulkheads being intact whenever a breach occurs in the hull. Most existing passenger vessels have openings in these bulkheads such as watertight doors, which if left open or not closed immediately, could allow flooding of a number of compartments beyond the parameters for survivability of the ship.

Whilst it is intended in any new vessels to ensure that the number of watertight doors is kept to a minimum or even eliminated altogether, the problem of existing vessels with many such doors must be reconsidered. It has been decided, therefore, to divide watertight doors into three different categories; which are -

**Category "A"** - Doors which may be open.

**Category "B"** - Doors which are normally closed but may be opened locally in order to permit through passage and will close immediately.

**Category "C"** - Doors which will be permanently closed.

Great care must be taken in determining the categories of watertight doors. Obviously the ideal situation would be to ensure that doors remain closed at all times during navigation, however, the Rules do permit doors to be open in certain circumstances. The following points should be considered in determining watertight door categories -

- <a> <i> Whether it is absolutely essential for the working of the ship, for the door be left open;
- <ii> that whilst it may be very convenient to leave the door open the safety of the ship could be endangered if the hull was suddenly breached;
- <iii> the location of the door in terms of the space or spaces which could be flooded and the impact of such flooding on the stability in the damaged condition;
- <iv> the location of the door in terms of the Personnel likely to use it; for example, Catering Personnel in storerooms or accommodation areas, Engineerroom Personnel in machinery areas, etc.;
- <v> the risk of inexperienced Personnel for passengers operating the door.

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- <vi> whether isolating a door in the closed position would restrict escape from a compartment.

In addition, when considering the category of machinery space doors, the following points should be considered -

- <b> <i> the need for rapid access between control stations and main or auxiliary machinery spaces for watchkeeping, emergency response in the event of essential machinery failure, rapid response in the event of fire, etc.;
- <ii> the degree of remote surveillance of essential machinery, bilge levels, items of high fire risk, etc.;
- <iii> the effect of isolating compartments in terms of ventilation and increasing ambient temperature in adjacent or overhead compartments.
- <iv> the risk of rendering essential machinery such as electrical generators, sprinkler, drencher, bilge or fire pump motors etc. inoperative as a result of only partial flooding of a compartment, which might not necessarily endanger the vessel from a stability point of view;
- <v> whether the machinery spaces have a centralised control room or conventional watchkeeping applies;
- <vi> the size, number and configuration of various spaces and the frequency of inspection required.

For example, a "Category A" door might be in a passenger area, where it might be the normal access for the passengers to that space and be one of the only means of escape in emergency. A "Category B" door might provide access to storeroom areas, passenger accommodation areas not in use, various machinery spaces etc. it must be emphasised however, that "Category B" doors must be likely to be used only by Personnel who have been trained in their proper use and are fully aware of the great risks involved with improper use. A "Category C" door might be designated in accommodation areas, machinery or store areas where the use of the door is not necessary for routine access, or escape or where the fact that the door remains shut would greatly restrict the flooding of a large space having a large effect on stability or restrict partial flooding of a space containing essential machinery. "Category C" doors are isolated shut and it may be considered that they do not exist i.e. they cannot normally be opened locally. However, the method of isolation should be considered carefully in order to ensure unauthorised interference but also provide access to the spaces protected in situations which the Master deems necessary, such as a fire situation.

The central control panel on the Bridge should indicate the category to which each door has been assigned and the status of the doors should be monitored by the Watchkeeping Officer to ensure compliance with their designated category, for example, ensuring that a "Category B" door has not been secured in the open position or a "Category C" door opened at all. The Rules permit doors to open in certain circumstances which will be referred to as normal conditions. However, in "potentially hazardous" situations, the Master is required to close all doors.

Such "potentially hazardous" situations might be -

- <i> in conditions of restricted visibility;
- <ii> in conditions of restricted draught or where ability to manoeuvre is limited such as within port limits etc.;
- <iii> in situations when adjacent to underwater hazards or high traffic density;
- <iv> in conditions of difficult berthing or unberthing such as in high winds etc.

In deciding to close all doors the Master must take into account the risk to inexperienced Personnel or Passengers in the vicinity of doors, the overall risk to the safety of the vessel and whether time is available to place experienced Personnel adjacent to doors etc.

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## ANNEX II

### Operational Instructions

The following information should be included in the "Operational Instructions".

- <i> A drawing or diagram of the ship showing the location of all watertight bulkheads and indicating those which contain watertight doors, whether power operated or manually closed.
- <ii> The watertight doors must be assigned indentifying numbers which are clearly evident on the above diagram, clearly indicated on the door control panel on the bridge and at each side of each door.
- <iii> A table listing the compartments adjacent to each door.
- <iv> The category i.e. "A", "B" or "C" to which each door has been assigned and an explanation of the category designated.
- <v> A statement instructing the Bridge Watchkeeping Officer to monitor the watertight door control panel and ensure that the door category status is being maintained.
- <vi> A statement that all doors must be closed in situations considered by the Master to be potentially hazardous.
- <vii> A statement emphasising the risk to inexperienced persons, associated with closing all doors at once and an instruction to issue a warning announcement on the Public Address system if time permits.
- <viii> A warning to keep all doors clear of debris or rubbish and free of any oil leaks.
- <ix> A statement explaining how "Category C" doors have been isolated in the closed position and how they may be opened in an emergency. This should include a list of the locations of any keys etc. which might be required.
- <x> Instructions on the frequency of drills and inspections of watertight doors.

## Typical format and contents of "Operational Instructions"

M.V. .... Port of Registry ..... Official No. ....

1. These are the Operational Instructions for the control of the ship's watertight doors required by the Merchant Shipping <Closing of Openings in Hulls and in Watertight Bulkheads> Rules, 1988, Regulation 6 (1) (a).
2. All the watertight doors which may be opened during a voyage are to be operated <kept closed or opened> in accordance with the procedures given in these instructions and in the appended diagram entitled "**Ship's Watertight Doors and Bulkheads**".
3. The attached diagram shows the location of all watertight bulkheads and watertight doors.
4. The following table lists the identifying number of each door, the compartments adjacent to each door and the category to which each door has been assigned.

Door No.	Adjacent Compartments	Method of Operation Power or Manual	Category
1	"X" Cabins/"Y" Cabins	Power	"A"
2	"Y" Cabins/"Z" Cabins	Power	"C"
3	"Z" Cabins/Stewards Accom	Power	"A"
4	Fridge Room/Stores	Power	"B"
5	Workshop/Generator Room	Power	"B"
6	Generator Rm./Main E.Room	Power	"B"
7	Main E.Room/Fuel Room	Power	"A"
8	Fuel Room/Shaft Space	Power	"B"
9	Crew Accom./"R" Cabins	Power	"A"
10	"R" Cabins/"S" Cabins	Power	"B"
11	"S" Cabins/Steering flat	Manual	"C"

**Note -**

**Category "A"** - A door which may be open.

**Category "B"** - A door which is normally closed but may be opened to permit through passage and should close immediately.

**Category "C"** - A door which is secured closed.

5. The Bridge Watchkeeping Officer must monitor the status of the watertight doors as indicated on the watertight door control panel and ensure strict compliance with the table in 4 above during "Normal Conditions".

**Note** - In conditions considered by the Master to be potentially hazardous, all doors must be closed immediately.

6. Instructions in the use of the Watertight Doors

ALL MEMBERS OF THE CREW WHO HAVE OCCASION TO USE ANY WATERTIGHT DOORS MUST BE INSTRUCTED IN THE SAFE OPERATION OF THOSE DOORS. IN ADDITION WRITTEN INSTRUCTIONS ON THE SAFE OPERATION OF THE DOORS, GIVEN IN EASILY UNDERSTOOD TERMS AND ILLUSTRATED WHEREVER POSSIBLE, SHALL BE AVAILABLE TO ALL MEMBERS OF THE CREW. SUCH INSTRUCTIONS SHOULD BE BASED ON THE CONTENTS OF THIS DOCUMENT.

7. All watertight doors must be kept in efficient working condition and be inspected for reliability and efficiency of operation of doors, controls and alarms by a competent Officer at intervals of not more than seven days and a relevant entry made in the Official Log Book. The operation of "Category A" and "B" watertight doors must be verified by opening and closing daily. <In accordance with Rules 6 and 7 of the Merchant Shipping <Closing of openings in Hulls and in Watertight Bulkheads> Rules, 1988 (S.I. No. 371 of 1988).>
8. In any emergency situation, the Master may ignore these instructions in order to provide access or escape from spaces by opening or closing any door provided he is satisfied that it is essential for the overall safety of the ship.

The contents of this document satisfy the requirements of the Merchant Shipping <Closing of Openings in Hulls and in Watertight Bulkheads> Rules, 1988, Regulation 6 (1) (a).

**Signed** .....

Marine Surveyors Office, Department of the Marine.

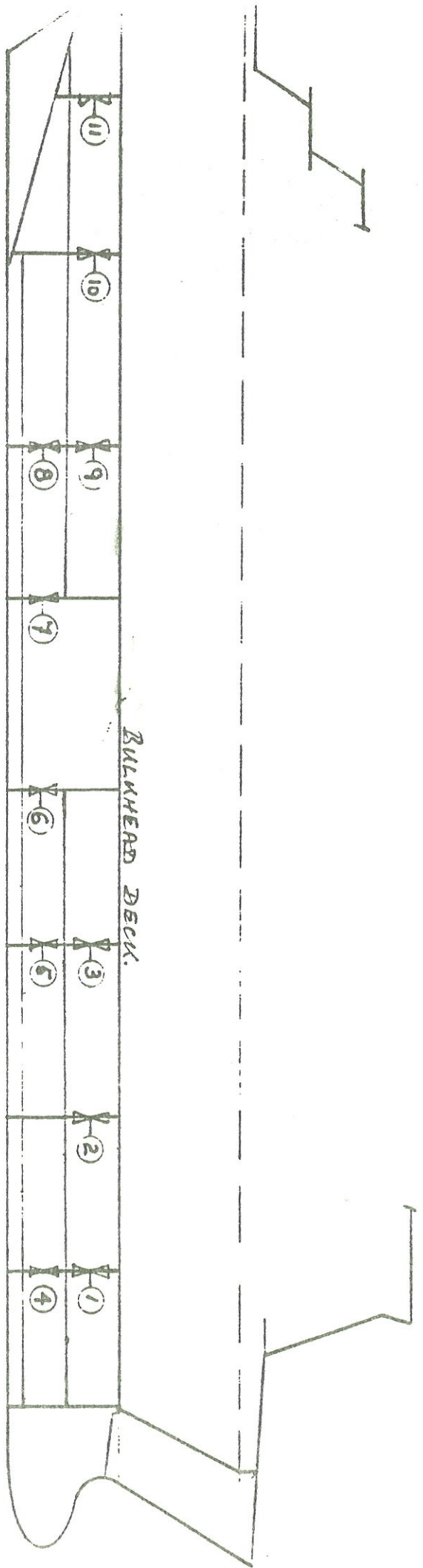
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**Note** - This document to be attached to the Ship's Stability Book.



M.V. -----

WATERTIGHT DOORS AND BULKHEADS.



 POWER OPERATED  
SLIDING W.T. DOOR.

 MANUALLY CLOSED  
AND SECURED W.T. DOOR

CATEGORY "A" DOORS: NOS -----

CATEGORY "B" DOORS: NOS -----

CATEGORY "C" DOORS: NOS -----