

MERCHANT SHIPPING (CARRIAGE OF GRAIN) RULES, 1974

CONTENTS

1. Short title, commencement and application
2. Definitions
3. Trimming
4. Stowage of full compartment
5. Feeders
6. Common Loading
7. Trimming and Bagging of End Compartments
8. Stowage of Partly Filled Compartments
9. Limitation on Number of Partly Filled Compartments
10. Bulk-grain in Tween Decks and Superstructures
11. Stowed of Specially Suitable Ships
12. Water Ballast Tanks
13. Bagged Grain
14. Loading of Home-Trade Ships
15. Stowage of Full Compartments in Home
16. Stowage of Partly Filled Compartments of Home-Trade Ships
17. General
18. Shifting Boards
19. Uprights
20. Shore
21. Feeding Holes
22. Offences

SCHEDULE 1 :- SCHEDULE

MERCHANT SHIPPING (CARRIAGE OF GRAIN) RULES, 1974

¹1. Published in the Gazette of India, 1974, Ft. II, Sec. 3 (i), p. 547. Whereas the draft of the Merchant Shipping (Carriage of Grain) Rules, 1973, was published as required by sub-section (5) of

Sec. 332 of the Merchant Shipping Act, 1958 (44 of 1958) at pages 1038 to 1046 of the Gazette of India, Part II, Sec. 3, Sub-section (i), dated the 19th May, 1973, under the notification of the Government of India in the Ministry of Shipping and Transport No. G.S.R. 531, dated the 5th may, 1973, inviting objections and suggestions from all persons likely to be affected thereby within a period of forty-five days from the date of publication of the notification in the Official Gazette; And whereas the said Gazette was made available to the public on the 19th May, 1973; And whereas, no objections and suggestions have been received from the public on the said draft; Now, therefore, in exercise of the powers conferred by sub-section (5) of Sec. 332 and Sec. 458 of the said Act and in supersession of the Indian Merchant Shipping (Carriage of Grain) Rules, 1954, the Central Government hereby makes the following rules, namely

1. Short title, commencement and application :-

(1) These rules may be called the Merchant Shipping (Carriage of Grain) Rules, 1974.

(2) They shall come into force on the date of their publication in the Official Gazette.

(3) Unless expressly provided otherwise, they shall apply to

(a) all Indian Ships ;

(b) ships other than Indian ships,

(i) when they are loaded with grain at any port or place in India or within the territorial waters of India; or

(ii) when they enter any port or place in India or come within the territorial water of India laden with grain.

2. Definitions :-

In these rules, unless the context otherwise requires,

(i) "Act" means the Merchant Shipping Act, 1958 (44 of 1958);

(ii) "compartment" means a hold, or cargo space bounded by bulkheads at each end and having decks above and below;

(iii) "feeders" means feeders constructed in accordance with the requirements specified in the First Schedule;

(iv) "grain" includes wheat, maize or corn, oats, rye, barley, rice,

pulses and seeds;

(v) "metacentric height" means the distance between the transverse metacentre (M) and the centre of gravity (Gj corrected for the free surface effects of liquids in tanks, and for the purposes of rule 5, for the free surface effects of grain in feeders;

(vi) "Schedule" means a Schedule to these rules;

(vii) "shifting boards" means shifting boards constructed in accordance with the requirements specified in the Second Schedule;

(viii) "shores" means shores conforming to the requirements specified in the Third Schedule;

(ix) "stays" means stays the fitting of which conforms to requirements of the Fourth Schedule;

(x) "upright" means upright, the fitting of which conforms to the requirements of the Fifth Schedule.

3. Trimming :-

(1) In compartments entirely fitted with bulk grain, the grain shall be trimmed so as to fill all the spaces between the beams and in the wings and ends.

(2) In compartments partly filled with bulk grain, the grain shall be levelled except where it is impracticable to do so.

4. Stowage of full compartment :-

(1) Except as hereinafter provided, any compartment which is entirely filled with bulk grain shall be divided either:

(a) by a longitudinal bulkhead or shifting boards in line with, or not more than five per cent of the moulded breadth of the ship from the centre line, or

(b) by longitudinal bulkhead or shifting boards off the centre line of the ship :

Provided that the distance between them does not exceed sixty per cent of the moulded breadth of the; ship and that, in the latter case, trimming hatches of suitable size suitably placed are provided in the wings at longitudinal intervals of not more than 7.62 metres with end trimming hatches placed not more than 3.66 metres from

transverse bulkheads.

(2) In every case, the longitudinal bulkheads or shifting boards shall be properly constructed and fitted grain tight with proper fittings between the beams.

(3)

(a) In any compartment which is a hold, the longitudinal bulkheads or shifting boards shall extend downwards from the underside of the deck to a distance of at least-one-third of the depth of the hold or 2.44 metres, whichever is greater.

(b) In compartments in between decks and superstructures or in any compartment: other than a hold, such longitudinal bulkheads or shifting boards shall extend from deck to deck.

(4) The provisions of sub-rules, (1), (2) and (3) shall not apply to

(a) a compartment other than a hold, if bagged grain or other suitable cargo therein is tightly stored in the wings to a width, at any point, of not less than twenty per cent, of the corresponding breadth of the ship;

(b) parts of the compartments where the maximum breadth of the deckhead within such parts does not exceed one half of the moulded breadth of the ship;

(c) except in the case of compartments loaded with bulk linseed, those parts of a compartment which, in ships which maintain throughout the voyage a metacentric height of not less than 0.31 metres in the case of single deck or two deck ships and not less than 0.36 metres in the case of other ships, are

(i) below and within 2.13 metres of a feeder, but only below or abreast of a hatchway, if that feeder contains, or all the feeders collectively feeding a compartment, contain not less than five per cent, of the quantity of grain carried in the compartment which is fed;

(ii) below or abreast of a hatchway where the bulk grain beneath the hatchway is trimmed in the form of a saucer hard up to the deck- head beyond the hatchway to a depth in the centre of the saucer of not less than 1.83 metres measured below the deck line and is topped off with bagged grain or other suitable bagged cargo so as to fill the hatchway and the saucer below and is stowed

tightly against the deckhead, the longitudinal bulkheads, the hatchway beams and the hatchway side and end coamings.

5. Feeders :-

(1) Any compartment which, is entirely filled with bulk grain shall be provided with feeders which shall be constructed in accordance with the requirements of the First Schedule or with such other requirements that the Central Government or any other officer authorised by the Central Government in this behalf, may prescribe from time to time by notification in the Official Gazette.

(2) Such feeders shall be so placed as to ensure a free flow of grains to all parts of the compartment containing bulk grain: Provided that feeders shall not be required

(a) When bulk grain is carried in deep tanks which are primarily constructed for the carriage of liquids and in which the greatest width does not exceed one-half of the moulded breadth of the ship, or which are divided by one or more permanent steel longitudinal divisions sited not more than one-half of the moulded breadth of the ship apart, subject to the condition that the tanks and tank lids are securely closed;

(b) When bulk grain is trimmed in the form of a saucer hard up to the deck head beyond the hatchway to a depth in the centre of the saucer of not less than 1.83 metres measured below the deck line and is topped with bagged grain or other suitable bagged cargo so as to fill the hatchway and the saucer below and is stowed tightly against the deck head, the longitudinal bulkheads, the hatchway beams and the hatchway side and end coamings.

(3) Subject to the provisions of sub-clause (i) of Cl. (c) of sub-rule (4) of rule 4 each feeder shall contain not less than two per cent, of the quantity of grain carried below deck level in the part of the compartment which it feeds.

(4) Each feeder shall be fitted with a longitudinal bulkhead or shifting boards extending to the full depth of the feeder:

Provided that such longitudinal bulkhead or shifting boards need not be fitted in a single deck or two deck ships which maintains, throughout the voyage, metacentric height of 0.31 metres, or any other ship which maintains, throughout the voyage, a metacentric height of 0.36 metres

(i) if the feeder contains, or all feeders collectively feeding a compartment contain, not less than five per cent of the quantity of grain carried below deck level in that compartment;

(ii) if the sinkage of grain amounting to two per cent, of the volume of the compartment fed would not cause the free grain surface to fall below the lower extremities of the feeder or feeders at deck level;

(iii) if a shift of the free grain surface to an angle of 12 degree to the horizontal would not cause that surface to fall below the lower extremities of the feeder or feeders at deck-level. Explanation. For the purpose of this sub-rule, the effects of the additional free grain surfaces within the feeders due to the omission of centre-line divisions shall be taken into account in calculating the metacentric height referred to in Cl. (c) of sub- rule (4) of rule 4. The correction to the metacentric height to each feeder shall be made in accordance with the formula set out in the Sixth Schedule.

6. Common Loading :-

In any ship when compartments above one another are entirely to be filled with grain, such compartments may be loaded as one compartment subject to the following conditions namely,

(a) except as provided for in Cl. (c) sub-rule (4) of rule 4, longitudinal bulkhead or shifting boards shall be fitted

(i) deck to deck in the tween decks of a two deck ship;

(ii) for the upper one-third part of the total depth of the compartments loaded in common, in the case of all other ships.

(b) openings each of at least 0.37 sq. metres shall be provided in the wings of the deck immediately below the upper-most deck of the compartments loaded in common and forward and aft of the main hatchway. Such openings shall provide, in combination with the main or other hatchways, a feeding distance of not more than 2.44 metres measured in a fore and aft line, and

(c) the provisions of rules 5 and 7 shall apply to compartments loaded in common as if they were one single compartment.

7. Trimming and Bagging of End Compartments :-

(1) When the distance, measured in fore and aft line from any part of a hold or compartment to the nearest feeder exceeds 7.62

metres from the nearest feeder the bulk grain in the end spaces beyond 7.62 metres shall be levelled off at a depth of at least 1.83 metres below the deck and the end spaces filled with bagged grain built upon a suitable platform.

(2) Such platform shall be constructed in accordance with the requirements of rule 8.

8. Stowage of Partly Filled Compartments :-

(1) Except as hereinafter provided any compartment which is partly filled with bulk grain shall be divided either by

(a)

(i) a longitudinal bulkhead; or

(ii) shifting boards; in line, with or not more than five per cent, of the moulded breadth of the ship from the centre line, or

(b)

(i) two or more longitudinal bulkheads, or

(ii) shifting boards; off the centre line of the ship: Provided that the distance between them does not exceed sixty per cent, of the moulded breadth of the ship.

(2) In every case the longitudinal bulkheads or shifting boards shall be properly constructed and shall extend from the bottom of the compartment to a height of not less than 0.61 metres above the surface of the bulk grain.

(3) The provisions of sub-rules (1) and (2) shall not apply to

(a) a part of a compartment below or abreast of a hatchway partly filled with grain other than linseed where:

(i) a metacentric height of not less than 0.31 metres is maintained throughout the voyage in the case of a single deck or two deck ship, or

(ii) a metacentric height of not less than 0.36 metres is maintained throughout the voyage in the case of any other ship :

(b) a compartment, which is a hold, if the bulk grain contained therein does not exceed one-third of the capacity of the hold or where such a hold is divided by a shaft tunnel, one-half of the capacity of that hold;

(c) a compartment other than a hold, if bagged grain or other suitable cargo therein is tightly stowed in the wings to a width at any point, of not less than twenty per cent of the corresponding breadth of the ship;

(d) those parts of a compartment where the maximum breadth of the deckhead within such parts does not exceed one-half of the moulded breadth of the ship.

(4) When any compartment is partly filled with bulk grain the bulk grain shall be levelled and topped off with bagged grain or other suitable cargo tightly stowed and extending to a height of not less than 1.22 metres above the top of the bulk grain within those parts of the compartment which are divided by a longitudinal bulkhead or shifting boards, and to a height to not less than 1.52 metres in those parts of compartment which are not so divided: Provided that in the case of a compartment which is a hold in which the bulk grain does not exceed one-third of the capacity of the hold or where such a hold is divided by a shaft tunnel, one-half of the capacity of the hold, the depth of the bagged grain or other suitable cargo shall be not less than 1.22 metres.

(5) The bagged grain or other suitable cargo shall be supported on suitable platforms laid over the whole surface of the bulk grain and such platforms shall consist of

(a) bearers spaced not more than 1.22 metres apart and 25 millimetre boards laid thereon spaced not more than 0.10 metres apart; or

(b) strong separation cloths with adequate overlapping.

9. Limitation on Number of Partly Filled Compartments :-

(1) Except in the case of ships in which a metacentric height of not less than 0.31 metres in the case of single deck or two deck ships or of not less than 0.3b metres in the case of other ships is maintained throughout the voyage, not more than two compartments may be partly filled with bulk grain except that other compartments may be partly filled with bulk grain if they are filled up to the deckhead with bagged or other suitable cargo.

(2) For the purpose of this rule:

(a) superimposed tween decks shall be regarded as separate compartments and separate from any lower hold below them ;

(b) feeders and partly filled spaces referred to in Cl. (c) of rule 10 shall not be regarded as compartments; and

(c) holds or compartments provided with one or more grain tight longitudinal sub-divisions shall be regarded as one hold or compartment.

10. Bulk-grain in Tween Decks and Superstructures :-

Bulk grain shall not be carried in compartments which are in a superstructure of a ship, or in the tween deck of a two deck ship, or in the uppermost tween deck of a ship having more than two decks except under the following conditions, namely:

(a) the bulk grain or other cargo shall be so stowed as to ensure maximum stability;

(b) in all cases either a metacentric height of not less than 0.31 metres in the case of single deck or two deck ships or of not less than 0.36 metres in the case of other ships is maintained throughout the voyage or, alternatively, the aggregate quantity of bulk grain or other cargo carried in such compartments does not exceed twenty-eight per cent, by weight of the remaining cargo and the Master is satisfied that the ship will have adequate stability throughout the voyage:

Provided that the limitation of twenty-eight per cent, specified in this clause will not apply when the grain cargo carried above deck or in the upper most tween deck spaces consists of oats, barley or cotton seeds;

(c) the deck area of any part of such compartments which contains bulk grain and which is only partly filled does not exceed 93 square metres; and

(d) all such compartments in which bulk grain is stowed are either subdivided by transverse bulk-heads at intervals of not more than 30.50 metres or, when this distance is exceeded, the excess space is entirely filled with bagged or other suitable cargo.

11. Stowed of Specially Suitable Ships :-

(1) The provisions of rules 4 to 10, both inclusive, shall not apply to any ship in which the effect of any transverse shift of grain is limited by means of longitudinal divisions or other constructional feature to such an extent that the list resulting from a shift of grain, calculated on the basis of the assumptions made in sub-rule

(2), does not exceed 5 degrees at any state of the voyage.

(2) In calculating the list of a ship referred in sub-rule (1), assumption shall be made that the grain surfaces, which are levelled or which are constrained by a boundary having an angle or inclination of less than 30 degrees to the horizontal, settle 2 per cent by volume and more through an angle of 12 degrees with their original surface of 8 degrees if overstowed in the accordance with the provision of sub-rules (4) and (5) of rule 8.

(3) Every such ship to which the provisions of rules 4 to 10, both inclusive, do not apply shall carry a grain loading plan and sufficient stability information to show that for the stowage arrangement to be adopted, the calculated list referred to in sub-rule (1) will not be exceeded.

12. Water Ballast Tanks :-

Double bottom tanks which are taken into account in calculating the metacentric height referred to in rules 4,5,8,9 and 10, or in calculating the list referred to in rule 11, shall have adequate watertight longitudinal sub-division except where the width of the tank measured at half length does not exceed 60 per cent, of the ship's moulded breadth.

13. Bagged Grain :-

Bagged grain shall be carried in sound bags which shall be securely closed and, except as provided in sub-item (iv) of item (b) of the proviso to rule 16, well filled.

14. Loading of Home-Trade Ships :-

Except in regard to the stowage of bulk grain in the tween deck of a two deck ship or the upper most tween deck of a ship having more than two decks the fore-going provisions of these rules shall not apply to any home-trade ship in which bulk grain is carried subject to the compliance with the provisions of rules 15 and 16.

Explanation. For the purposes of these rules any ship partially lightened at a port or place in India for a voyage to any other port or place in India shall be as treated as a home-trade ship.

15. Stowage of Full Compartments in Home :-

Trade Ships. In Home-Trade Ships, stowage of any compartment which is entirely filled with bulk grain shall be as follows:

(a) the hatchway shall contain not less than 4 per cent, of the

quantity of bulk grain carried below deck level in the compartment which it feeds, or

(b) the bulk grain beneath the hatchway shall be trimmed in the form of a saucer and topped off with bagged grain or other suitable bagged cargo in the manner specified in sub-Cl. (ii) of Cl. (c) of sub-rule (4) of rule 4, except that the compartment may not be fitted with bulkheads or shifting boards in respect of any ship making a voyage during seasons of fair weather as defined in the Seventh Schedule.

16. Stowage of Partly Filled Compartments of Home-Trade Ships :-

In Home- Trade Ships, the stowage of any compartment which is partly filled with bulk grain comply with the provisions of rule 8:

Provided that not more than two compartments may be stowed in either of the following ways, namely:

(a) the bulk grain shall be levelled off and over-stowed with at least two tiers of bagged grain laid on separation cloths, or with other suitable cargo supported on platforms or separation clothes; or

(b)

(i) the bulk grain shall be divided from empty space in the hold by one of the following methods, namely: Method 1. A transverse vertical wooden grain tight bulk head shall be fitted in the fore part of the compartment in such a way as to reduce the capacity of the compartment to that required for the stowage of the grain. Method 2. A strongly and tightly constructed transverse vertical bulkhead of bagged grain shall be used. The bulk head shall contain sufficient rows of bags laid in the fore and aft direction to enable it to withstand the effects of pitching and scending during the voyage. Its foundation shall be on the floor of the compartment and shall consist of not less than four rows of bags. These requirements of four rows maybe narrowed to two rows of bags at the top provided that only two rows are considered to be adequate for providing and maintaining the required support. Method 3. A sloping bulkhead shall be constructed of stepped bags of grain. The bags shall be packed tightly together and bedded into the grain in a fore and aft direction. They shall lie horizontally and overlap not less than one-half of their length. The lowest tier shall be so arranged as to rest upon a firm and solid foundation and shall be placed on the floor of

the compartment or on separation cloths laid on the levelled grain surface reaching to one of the ship's traverse bulkheads. The bags shall be well locked into the frames at the ship's side and a double tier shall be laid at the side of the compartment. The bulkheads shall be secured in the hatchway and the top tier of bags shall be so wedged tightly against the web beams or the hatch end coamings that they will be secured against fore and aft movement.

(ii) The bulk grain shall be stowed in such a way as to confine its loose surface within the limits of the hatchway in such a manner that it will serve as a feeder. The part of the compartment containing bulk grain shall be so confined as to prevent any of it getting into the empty part of the compartment. The bulk grain shall be trimmed tightly into one end of the compartment; the wings and beam spaces shall be filled; and as much grain as possible shall be stowed at same end of the hatchway so as to ensure a sufficient supply for feeding purposes.

(iii) Where the bulk grain is not sufficient to reach up into the hatchway the grain surface shall be trimmed level athwartships and the fore and aft slopes reduced considerably below the natural angle of repose and the surface of the grain secured by not less than two tiers of bagged grain or other suitable cargo tightly stowed. The bagged grain or other suitable cargo shall be supported on suitable platforms or on strong separation cloths laid over the whole surface of the bulk grain.

(iv) The bags referred to in this clause shall be loosely filled and where used in construction of bulk heads shall be arranged with their mouths laid towards the bulk grain. Grain fittings

17. General :-

All timber used for grain fittings shall be of good sound quality and of a type and grade which has been proved to be satisfactory for the intended use. The actual finished dimensions of the timber shall be in accordance with the requirements for the particular fitting specified in these rules. Plywood of an exterior type, bounded with waterproof glue and fitted in such a manner as to ensure that direction of the grain in the face piles is perpendicular to the supporting uprights or binders, may be used provided that its strength is equivalent to that of solid timber of the appropriate scantling.

18. Shifting Boards :-

Every shifting board used for complying with any of the provisions of these rules shall be of the size, strength and specification set out in the second Schedule.

19. Uprights :-

Every upright used for complying with any of the provisions of these rules except those used in feeders to which requirements of Cl. (b) of sub- paragraph (2) of paragraph 2 of the First Schedule apply, shall be of the size, strength and specification set out in the Fifth Schedule.

20. Shore :-

Every wooden shore used for complying with any of the provisions of these rules those used in feeders for which separate provisions are made in these rules shall be of the size, strength and specification set out in the Third Schedule.

21. Feeding Holes :-

Where the depth of the hatchway and beams or side girders exceed 0.381 metres (381 millimetres) below the surface of the deck, feeding spaced approximately 0.610 metres (610 millimetres) apart shall be provided as near to deck level as practicable to allow the grain to flow through such beams or girders into the compartments. Such feeding holes shall be of 51 millimetres in diameter where the depth of the hatchway and beams or side girders exceeds 0.381 metres (381 millimetres) but does not exceed 0.457 metres (457 millimetres) and of 88 millimetres in diameter where such depth exceeds 0.457 metres (457 millimetres).

22. Offences :-

Contravention of or failure to comply with any of the provisions of these rules by any person shall be deemed as failure to take all necessary and reasonable precautions for preventing the grain cargoes from shifting and it shall constitute an offence under sub-Sees. (1) and (2) of Sec. 332 of the Act.

SCHEDULE 1

SCHEDULE

SEVENTH SCHEDULE

(See rule 15)

Fair Weather and Foul Weather Seasons

For the purposes of these rules

(1) The expression "fair weather season" of "fair weather" wherever it occurs shall mean

(a) In the Arabian Sea, the season from the 1st of September to the 31st of May ; and

(b) In the Bay of Bengal, the seasons from the 1st of December to the 30th of April.

(2) The expression "foul weather season" of "foul weather" wherever it occurs shall mean

(a) In the Arabian Sea, the season from the 1st of June to the 31st of August; and

(b) In the Bay of Bengal, the seasons from the 1st of May to the 30th of November.

SCHEDULE 1

SCHEDULE

SCHEDULE 1

SCHEDULE