

**1999 No. 1644**

**MERCHANT SHIPPING**

**SAFETY**

**The Merchant Shipping (Additional Safety Measures for Bulk Carriers) Regulations 1999**

<i>Made</i> - - - -	<i>4th June 1999</i>
<i>Laid before Parliament</i>	<i>16th June 1999</i>
<i>Coming into force</i>	<i>1st July 1999</i>

The Secretary of State for the Environment, Transport and the Regions, after consulting the persons referred to in section 86(4) of the Merchant Shipping Act 1995(a), in exercise of powers conferred by section 85(1)(a) and (b), (3) and (5) to (7) and section 86(1) of that Act, and of all other powers enabling him in that behalf, hereby makes the following Regulations:

**Citation and commencement**

1. These Regulations may be cited as the Merchant Shipping (Additional Safety Measures for Bulk Carriers) Regulations 1999 and shall come into force on 1st July 1999.

**Interpretation**

2.—(1) In these Regulations—

“1997 SOLAS Conference” means the Conference of the Contracting Governments to the International Convention for the Safety of Life at Sea 1974 held in London on the 24th, 27th and 28th November 1997;

“bulk carrier” means—

a ship constructed with single deck, top-side tanks and hopper side tanks in cargo spaces and intended primarily to carry solid bulk cargo; or

an ore carrier, where “ore carrier” means a seagoing single deck ship having two longitudinal bulkheads and a double bottom throughout the cargo region and intended for the carriage of ore cargoes in the centre holds only; or

a combination carrier, where “combination carrier” means a tanker designed to carry oil or alternatively solid bulk cargo.

“bulk carrier bulkhead and double bottom strength standards” means Standards for the evaluation of scantlings of the transverse watertight vertically corrugated bulkhead between the two foremost cargo holds and for the evaluation of allowable hold loading of the foremost cargo hold, adopted by Resolution 4 of the 1997 SOLAS Conference;

“bulk carrier of single side skin construction” means a bulk carrier in which a cargo hold is bounded by the side shell;

“Certifying Authority” means the Secretary of State or any person or organisation authorised by the Secretary of State;

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(a) 1995 c. 21; sections 85 and 86 were amended by the Merchant Shipping and Maritime Security Act 1997 (c. 28), section 8.

“EEA State” means a State which is a Contracting Party to the EEA Agreement; and “EEA Agreement” means the Agreement on the European Economic Area signed at Oporto on 2nd May 1992(a) as adjusted by the Protocol signed at Brussels on 17th March 1993(b);

“IMO” means the International Maritime Organization;

“in bulk” means loaded directly into the cargo spaces of a ship without any intermediate form of containment;

“length” means the length of the ship ascertained in accordance with the Merchant Shipping (Load Line) Regulations 1998(c);

“Merchant Shipping Notice” means a Notice described as such, issued by the Maritime and Coastguard Agency, an executive agency of the Department of the Environment, Transport and the Regions;

“solid bulk cargo” means any material, other than liquid or gas, consisting of a combination of particles, granules or any larger piece of material, generally uniform in composition, which is loaded directly into the cargo spaces of a ship without any intermediate form of containment;

“tons” means gross tons and a reference to tons—

(a) in relation to a ship having alternative gross tonnages under paragraph 13 of Schedule 5 to the Merchant Shipping (Tonnage) Regulations 1982(d) permitted to be used pursuant to regulation 12(1) of the Merchant Shipping (Tonnage) Regulations 1997(e) is a reference to the larger of those tonnages, and

(b) in relation to a ship having its tonnage determined both under Part II and regulation 12 of those 1997 Regulations is a reference to its gross tonnage as determined under paragraph (2) of the said regulation 12;

“watertight” means capable of preventing the passage of water in any direction;

“weathertight” means that in any sea condition water will not penetrate the ship.

(2) Any reference in these Regulations to—

(a) a Resolution of the IMO Assembly;

(b) a Resolution of the 1997 SOLAS Conference;

(c) a Merchant Shipping Notice;

(d) any other specified Code or Guidelines;

shall include a reference to any document amending or replacing it which is considered by the Secretary of State to be relevant from time to time and which is specified in a Merchant Shipping Notice.

(3) In these Regulations, a reference to a ship constructed on, before or after a specified date is a reference to a ship the keel of which was laid or which is at a similar stage of construction at that date; and references to the age of a ship shall be construed accordingly. “Similar stage of construction” means the stage at which—

(a) construction identifiable with a specific ship begins; and

(b) assembly of that ship has commenced, comprising at least 50 tonnes or one per cent of the estimated mass of all structural material, whichever is less.

(4) Where a ship is managed by a person other than the owner (whether on behalf of the owner, of some other person or on his own behalf), a reference in these Regulations to the owner shall be construed as including a reference to that person.

## Application

3.—(1) Subject to paragraph (2), these Regulations apply to sea-going bulk carriers of 500 tons or over which are—

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(a) Cm. 2073.

(b) Cm. 2183.

(c) S.I. 1998/2241.

(d) S.I. 1982/841, to which there are amendments not relevant to these Regulations.

(e) S.I. 1997/1510.

- (a) United Kingdom ships, wherever they may be; or
- (b) other ships while they are within United Kingdom waters.

(2) In the case of a bulk carrier registered in a state which is not a Party to the International Convention for the Safety of Life at Sea, 1974 these Regulations shall not apply by reason of her being in United Kingdom waters if she would not have been therein but for stress of weather or any other circumstances that the Master, or owner, or charterer (if any) could not have prevented.

### **Surveys of bulk carriers**

4.—(1) The annual, intermediate and periodical surveys of bulk carriers referred to in these regulations shall be those surveys referred to in regulation 7 of the Merchant Shipping (Survey and Certification) Regulations 1995(a).

(2) Such surveys shall be carried out in accordance with the IMO Guidelines on the Enhanced Programme of Inspections during Surveys of Bulk Carriers and Oil Tankers, adopted by Resolution A.744(18) of the 18th Session of the IMO Assembly, as amended by Resolution 2 of the 1997 SOLAS Conference.

### **Implementation schedule for bulk carriers constructed before 1st July 1999**

5. Bulk carriers constructed before 1st July 1999 to which regulations 6 and 8 apply shall comply with the provisions of those regulations according to the following schedule:

- (a) bulk carriers which are 20 years of age and over on 1st July 1999, by the date of the first intermediate survey or the first periodical survey after 1st July 1999, whichever comes first;
- (b) bulk carriers which are 15 years of age and over but less than 20 years of age on 1st July 1999, by the date of the first periodical survey after 1st July 1999, but not later than 1st July 2002; and
- (c) bulk carriers which are less than 15 years of age on 1st July 1999, by the date of the first periodical survey after the date on which the ship reaches 15 years of age, but not later than the date on which the ship reaches 17 years of age.

### **Damage stability requirements applicable to bulk carriers**

6.—(1) Bulk carriers of 150 m in length and upwards of single side skin construction, designed to carry solid bulk cargoes having a density of 1000 kg/m<sup>3</sup> and above, constructed on or after 1st July 1999 shall, when loaded to the summer load line, be able to withstand flooding of any one cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph (3).

(2) Subject to paragraph (4) and regulation 14, bulk carriers of 150 m in length and upwards of single side skin construction, carrying solid bulk cargoes having a density of 1780 kg/m<sup>3</sup> and above, constructed before 1st July 1999 shall, when loaded to the summer load line, be able to withstand flooding of the foremost cargo hold in all loading conditions and remain afloat in a satisfactory condition of equilibrium, as specified in paragraph (3).

(3)(a) The condition of equilibrium referred to in paragraphs (1) and (2) is satisfactory provided that:

- (i) the final waterline after flooding, taking into account sinkage, heel and trim, is below the lower edge of any opening through which progressive down flooding may take place. Such openings shall include air pipes, ventilators and openings which are closed by means of weathertight doors or hatch covers (even if they comply with the requirements of the Merchant Shipping (Load Line) Regulations 1998), but exclude—

- (aa) those openings which are closed by means of watertight manhole covers, watertight flush scuttles or side scuttles of the non-opening type, provided that the means of closing comply with the Merchant Shipping (Load Line) Regulations 1998;

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(a) S.I. 1995/1210, to which there are amendments not relevant to these Regulations.

- (bb) remotely operated sliding watertight doors, except that in the case of doors separating a main machinery space from a steering gear compartment, watertight doors may be of a hinged, quick-acting type kept closed at sea, whilst not in use, provided that the lower sill of such doors is above the summer load line; and
- (cc) small cargo access openings closed by watertight gasketed covers of steel or equivalent material;
- (ii) if pipes, ducts or tunnels are situated within the assumed extent of flooding, arrangements are made so that progressive flooding cannot thereby extend to compartments other than those assumed to be floodable in the calculation for each case of damage;
- (iii) in the case where no part of the deck is immersed, the angle of heel due to asymmetrical flooding does not exceed 17 degrees, and in any other case the angle of heel due to asymmetrical flooding does not exceed 15 degrees;
- (iv) the metacentric height in the flooded condition is positive;
- (v) the righting lever curve has a minimum range of 20 degrees beyond the position of equilibrium in association with a maximum righting lever of at least 0.1 metres within the 20 degree range. The area under the righting lever curve within this range shall be not less than 0.0175 metre-radians. Unprotected openings shall not be immersed within this range unless the space concerned is assumed to be flooded. Within this range, the immersion of any of the openings listed in sub-paragraph (i) and other openings capable of being closed weathertight is permitted; and
- (vi) the Certifying Authority is satisfied that the stability is sufficient during intermediate stages of flooding. However it should never be significantly less than that required by sub-paragraph (v).
- (b) The assumed flooding referred to in sub-paragraph (a) above need only take into account flooding of the cargo hold space.
- (c) The permeability of a loaded hold for the purposes of sub-paragraph (a) above shall be assumed as 0.9 and the permeability of an empty hold shall be assumed as 0.95, unless a permeability relevant to a particular cargo is assumed for the volume of a flooded hold occupied by cargo and a permeability of 0.95 is assumed for the remaining empty volume of the hold.

(4) Bulk carriers constructed before 1st July 1999 which have been assigned a reduced freeboard in compliance with Schedule 4 paragraph 5(3) of Merchant Shipping Notice MSN1701(M) are deemed to comply with paragraph (2) of this regulation.

#### **Structural strength of bulk carriers constructed on or after 1st July 1999**

7. Bulk carriers of 150m in length and upwards of single side skin construction, constructed on or after 1st July 1999, and designed to carry solid bulk cargoes having a density of 1000 kg/m<sup>3</sup> and above, shall have sufficient strength to withstand flooding of any one cargo hold in all loading and ballast conditions, taking also into account dynamic effects resulting from the presence of water in the hold, and the IMO Recommendation on “Compliance with SOLAS Regulation XII/5”(a).

#### **Structural and other requirements for bulk carriers constructed before 1st July 1999**

8.—(1) This regulation applies to bulk carriers of 150m in length and upwards of single side skin construction, constructed before 1st July 1999, and carrying solid bulk cargoes having a density of 1780 kg/m<sup>3</sup> and above.

(2) The transverse watertight bulkhead between the two foremost cargo holds and the double bottom of the foremost cargo hold shall have sufficient strength to withstand flooding of the foremost cargo hold, taking also into account dynamic effects resulting from the presence of water in the hold, in compliance with the bulk carrier bulkhead and double bottom strength standards.

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(a) Adopted by Resolution 3 of the 1997 SOLAS Conference.

(3) In considering the need for, and the extent of, strengthening of the transverse watertight bulkhead or double bottom to meet the requirements of paragraph (2), the following restrictions may be taken into account:

- (a) restrictions on the distribution of the total cargo weight between the cargo holds; and
- (b) restrictions on the maximum deadweight.

(4) For bulk carriers using either of, or both, the restrictions referred to in paragraph (3) above for the purpose of fulfilling the requirements of paragraph (2), these restrictions shall be complied with whenever solid bulk cargoes having a density of 1780 kg/m<sup>3</sup> and above are carried.

#### **Survey of the cargo hold structure of bulk carriers constructed before 1st July 1999**

**9.** A bulk carrier of 150m in length and upwards of single side skin construction, constructed before 1st July 1999, of 10 years of age or over, shall not carry solid bulk cargoes having a density of 1780 kg/m<sup>3</sup> and above unless it has satisfactorily undergone either:

- (a) a periodical survey; or
- (b) a survey of all cargo holds to the same extent as required for a periodical survey.

#### **Information on compliance with the requirements for bulk carriers**

**10.—**(1) In the case of ships to which regulations 6, 7, 8 and 9, as appropriate, apply the manual required by regulation 10(2) of the Merchant Shipping (Carriage of Cargoes) Regulations 1999**(a)** shall be endorsed by the Certifying Authority to indicate that the said regulations 6, 7, 8 and 9 as appropriate, are complied with.

(2) Any restrictions imposed on the carriage of solid bulk cargoes having a density of 1780 kg/m<sup>3</sup> and above in accordance with the requirements of regulation 8 shall be identified and recorded in the manual referred to in paragraph (1).

(3) A bulk carrier to which paragraph (2) applies shall be permanently marked on the side shell at amidships, port and starboard, with a solid equilateral triangle having sides of 500 mm and its apex 300 mm below the deck line, and painted a contrasting colour to that of the hull.

#### **Solid bulk cargo density declaration**

**11.—**(1) Prior to loading solid bulk cargo on a bulk carrier the shipper shall declare the density of the cargo, in addition to providing the cargo information required by regulation 4(1) of the Merchant Shipping (Carriage of Cargoes) Regulations 1999.

(2) For bulk carriers of 150m in length and upwards of single side skin construction constructed before 1st July 1999, any cargo carried on or after the implementation date specified in regulation 5 and declared to have a density within the range 1250 kg/m<sup>3</sup> to 1780 kg/m<sup>3</sup> shall have its density verified by an accredited testing organisation unless such bulk carriers comply with all the relevant requirements of these Regulations applicable to the carriage of solid bulk cargoes having a density of 1780 kg/m<sup>3</sup> and above.

(3) In this regulation “shipper” has the same meaning as in the Merchant Shipping (Carriage of Cargoes) Regulations 1999; and regulations 4(2) to 4(6) and 13 and 14 of those Regulations apply in relation to the declaration required by this regulation as they apply in relation to the provision of information required by regulation 4(1) of those Regulations.

#### **Loading instrument**

**12.—**(1) Subject to paragraph (2) bulk carriers of 150m in length and upwards shall be fitted with a loading instrument capable of providing information on hull girder shear forces and bending moments, taking into account the IMO Recommendation on “Loading Instruments”**(b)**.

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**(a)** S.I. 1999/336.

**(b)** Adopted by Resolution 5 of the 1997 SOLAS Conference.

(2) Bulk carriers of 150m in length and upwards constructed before 1st July 1999 shall comply with the requirements of paragraph (1) not later than the date of the first intermediate or periodical survey of the ship to be carried out after 1st July 1999.

### **Alternative construction, equipment and machinery**

**13.**—(1) Where these Regulations require that the hull or machinery of a bulk carrier shall be constructed in a particular manner, or that particular equipment shall be provided, or that particular provisions shall be made, the Secretary of State shall permit the hull or machinery of the bulk carrier to be constructed in any other manner, or any other equipment to be provided or provision to be made, if he is satisfied by trial thereof or otherwise that such construction, equipment or provision is at least as effective as that required by these Regulations.

(2) For the purposes of paragraph (1), the results of a verification or test shall be accepted if the verification or test is carried out—

- (a) in accordance with these Regulations or with a Standard, Code of Practice, specification or technical description of an EEA State other than the United Kingdom offering equivalent levels of safety, suitability and fitness for the purpose; and
- (b) by a body or laboratory of an EEA State other than the United Kingdom offering suitable and satisfactory guarantees of technical and professional competence and independence.

### **Exemptions**

**14.** The Secretary of State may exempt any ship or description of ship from any of the requirements of these Regulations, subject to such conditions as he may specify, and may, on giving reasonable notice, alter or cancel any exemption so granted. In particular, in the case of bulk carriers to which regulation 6(2) otherwise applies which have been constructed with an insufficient number of transverse watertight bulkheads to satisfy that paragraph, he may exempt, wholly or partially, any such ship from regulations 6(2) and 8 provided he is satisfied that:

- (a) for the foremost cargo hold, the inspections prescribed for the annual survey are replaced by the inspections required for the intermediate survey of cargo holds;
- (b) the ship is provided with bilge well high water level alarms in all cargo holds, or in cargo conveyor tunnels, as appropriate, giving an audible and visual alarm on the navigation bridge, as approved by the Certifying Authority; and
- (c) there is carried on the ship detailed information on specific cargo hold flooding scenarios. This information shall be accompanied by detailed instructions on evacuation preparedness under the provisions of Section 8 of the International Safety Management (ISM) Code<sup>(a)</sup> and shall be used as the basis for crew training and drills.

### **Penalties**

**15.**—(1) If a bulk carrier proceeds or attempts to proceed to sea without complying with the requirements of regulation 4(2), 6(1) or (2), 7, 8(2) or (4), 9, 10(1), (2) or (3) or 12(1), the owner and master of the ship shall each, in respect of each case of non-compliance, be guilty of an offence and liable on summary conviction to a fine not exceeding the statutory maximum or, on conviction on indictment, to imprisonment for a term not exceeding two years, or a fine, or both.

(2) In any proceedings for an offence for non-compliance with regulation 4(2), 9, 10(1), or 12(1) it shall be a defence for the person charged to prove that all reasonable steps had been taken by that person to ensure compliance with that regulation.

### **Power to detain**

**17.** In any case where a bulk carrier does not comply with the requirements of these Regulations, the ship shall be liable to be detained and section 284 of the Merchant Shipping Act

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(a) Adopted by the International Maritime Organization by Resolution A.741(18).

1995(a) (which relates to the detention of a ship) shall have effect in relation to the ship, subject to the modification that as if for the words “this Act”, wherever they appear, there were substituted “the Merchant Shipping (Additional Safety Measures for Bulk Carriers) Regulations 1999”.

Signed by authority of the Secretary of State

*Glenda Jackson*  
Parliamentary Under Secretary of State,  
Department of the Environment,  
Transport and the Regions

Date 4th June 1999

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### EXPLANATORY NOTE

*(This note is not part of the Regulations)*

1. These Regulations implement SOLAS Chapter XII “Additional Safety Measures for Bulk Carriers”, adopted by the International Maritime Organization at the 1997 SOLAS Conference in November 1997. The Regulations lay down certain minimum standards for the longitudinal strength, buoyancy, stability, damage survivability, strength of double bottoms and transverse bulkheads, loading, and survey of certain types of bulk carriers. The Regulations apply in addition to the relevant provisions of the Merchant Shipping (Cargo Ship Construction) Regulations 1997 (S.I. No. 1509 amended by S.I. 1999/643), and the Merchant Shipping (Carriage of Cargoes) Regulations 1999.

2. The technical standards for bulk carriers constructed before 1st July 1999 are laid down in a number of IMO Resolutions referred to in the Regulations, while those for new bulk carriers are described in certain Unified Requirements of the International Association of Classification Societies (IACS), as specified in IMO Recommendation on “Compliance with SOLAS Regulation XII/5” (referred to in regulation 7).

3. A cost compliance assessment has been prepared and copies can be obtained from the Maritime and Coastguard Agency, Spring Place, 105 Commercial Road, Southampton, Hants, SO15 5EG. A copy has been placed in the Library of each House of Parliament.

4. IMO Resolutions, Codes and Guidelines are available from the International Maritime Organization, 4 Albert Embankment, London SE1 7SR. IACS Unified Requirements are available from IACS Permanent Secretariat, 5 Old Queen Street, London, S 1H 9JA. Merchant Shipping Notices are obtainable from EROS Marketing Support Services, Delta House, Imber Court Business Park, Orchard Lane, East Molesey, Surrey T 0BN (Tel. 0181 957 502).

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(a) Section 284 was amended by the Merchant Shipping and Maritime Security Act 1997, Schedule 1.

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**The Merchant Shipping (Additional Safety Measures for  
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