

measuring oxygen and flammable vapour concentration shall be provided. In addition, suitable arrangements shall be made on each cargo tank and slop tank such that the condition of the tank atmosphere can be determined using these portable instruments.

17. Calibration—Suitable means shall be provided for the zero and span calibration of both fixed and portable gas concentration measurement instruments, referred to in paragraphs 15 and 16 of this Performance Standard.

18. Alarms—(1) Audible and visual alarms shall be provided to indicate:

(a) Low water pressure or low water flow rate to the flue gas scrubber referred to in sub-clause 5(1) of this Performance Standard;

(b) High water level in the flue gas scrubber referred to in sub-clause 5(1) of this Performance Standard;

(c) High gas temperature referred to in clause 14 of this Performance Standard;

(d) Failure of the inert gas blowers referred to in clause 6(1) of this Performance Standard;

(e) Oxygen content in excess of 8 percent volume referred to in sub-clause 15(1)(b) of this Performance Standard;

(f) Failure of the power supply to the automatic control system for the gas regulating valve and to the indicating devices referred to in clause 8 and sub-clause 15(1) respectively of this Performance Standard;

(g) Low water level in the water seal referred to in sub-clause 9(1) of this Performance Standard;

(h) Gas pressure less than 100 millimetres water gauge as referred to in sub-clause 15(1)(a) of this Performance Standard the alarm arrangement for this gas pressure shall be such as to ensure that the pressure in slop tanks in combination carriers can be monitored at all times; and

(i) High gas pressure referred to in sub-clause 15(1)(a) of this Performance Standard.

(2) In a system with gas generators, audible and visual alarms shall be provided in accordance with sub-clause 18(1)(a), 18(1)(c), 18(1)(e) and 18(1)(i) of this clause and additional alarms to indicate.

(a) Insufficient fuel oil supply;

(b) Failure of the power supply to the generator;

(c) Failure of the power supply to the automatic control system for the generator.

(3) Automatic shut down of the inert gas blowers and gas regulating valve shall be arranged on predetermined limits being reached in respect of sub-clause (1)(a), (1)(b) and (1)(c) of this clause.

(4) Automatic shut down of the gas regulating valve shall be arranged so as to take account of the failure of the inert gas blowers referred to in clause 6 of this Performance Standard.

(5) In relation to sub-clause (1)(e) of this clause, when the oxygen content of the inert gas exceeds 8 percent, immediate action shall be taken to reduce the oxygen level. Unless the quality of the gas improves, all in-tank operations shall be suspended so as to avoid air being drawn into the tanks and the isolation valve referred to in sub-clause 9(8), of this Performance Standard shall be closed.

(6) The alarms required in sub-clause (1)(e), (1)(f) and (1)(h) of this clause shall be fitted in the machinery space and cargo control room, where provided, but in any event in such a position that they are immediately received by responsible members of the crew.

(7) In relation to sub-clause (1)(g) of this clause the Chief Surveyor shall be satisfied as to the maintenance of an adequate reserve of water at all times and the integrity of the arrangements to permit the automatic formation of the water seal when the gas flow ceases. The audible and visual alarm on

the low level of water in the water seal shall operate when the inert gas is not being supplied.

(8) An audible alarm system, independent of that required in sub-clause (1)(h) of this clause, or automatic shut down of cargo pumps shall be provided to operate on predetermined limits of low pressure in the inert gas main being reached.

Dated at Wellington this 31st day of October 1989.

W. P. JEFFRIES, Minister of Transport.

v6

The Shipping (Breathing Apparatus) Notice 1989

Pursuant to section 235 of the Shipping and Seamen Act 1952, the Minister of Transport hereby gives the following notice.

Notice

1. Title and commencement—(1) This notice may be cited as the Shipping (Breathing Apparatus) Notice 1989.

(2) This notice shall come into force on the 1st day of November 1989.

2. Performance Standard prescribed—The Performance Standard set out in the Schedule to this notice is hereby prescribed for the purposes of the Shipping (Fire Appliances) Regulations 1989.

Schedule

Performance Standard for Breathing Apparatus

1. Smoke helmet and smoke mask—Every smoke helmet or smoke mask shall be provided with a hose for the supply of air from the outside atmosphere. An air pump or bellows shall be provided, which shall be suitable for pumping air through the hose. The hose shall be of the non-collapsing type. Efficient couplings shall be provided to permit 2 or more lengths of hose to be joined. The air inlet to the pump or bellows shall be so protected as to ensure that the supply of air cannot be obstructed.

2. Self-contained breathing apparatus—(1) Self-contained breathing apparatus shall be of the open-circuit compressed-air type.

(2) The storage capacity of the compressed air cylinder or cylinders attached to the apparatus and carried by the wearer shall be at least 1200 litres of free air. The storage cylinders shall be constructed of suitable material, and shall be of efficient design and of sufficient strength to withstand with an adequate factor of safety the internal air pressure to which they may be subjected, and each cylinder shall be capable of withstanding a test by hydraulic pressure suitably in excess of the maximum working pressure.

(3) Means shall be provided for the automatic regulation of the air supply to the wearer of the apparatus in accordance with his breathing requirements when he is breathing any volume of free air of up to 85 litres per minute at any time when the pressure in the supply cylinder or cylinders is above 1000 kPa. Means shall be provided for overriding the automatic air supply valve.

(4) A pressure gauge with an anti-bursting orifice shall be incorporated in the high-pressure air-supply system to enable the wearer to read directly and easily the pressure of air in the supply cylinder or cylinders.

(5) Means shall be provided for warning the wearer audibly when 80 percent of the usable capacity of the apparatus has been expended.

(6) The maximum weight of any such apparatus shall not exceed 16 kg, excluding any lifeline, and, if they do not form an integral part of the apparatus, any safety bolt or harness.

3. General—(1) Every breathing apparatus shall be constructed of materials having adequate mechanical strength, durability, and resistance to deterioration by heat or by contact with water, and such materials shall be resistant to fire and