

and all places on board at which the workers are employed or to which they may be required to proceed in the course of their employment shall be efficiently lighted.

The means of lighting shall be such as not to endanger the safety of the workers nor to interfere with the navigation of other vessels.

Article 8.—In order to ensure the safety of the workers when engaged in removing or replacing hatch coverings and beams used for hatch coverings,

(1) hatch coverings and beams used for hatch coverings shall be maintained in good condition;

(2) hatch coverings shall be fitted with adequate hand grips, having regard to their size and weight;

(3) beams used for hatch coverings shall have suitable gear for removing and replacing them of such a character as to render it unnecessary for workers to go upon them for the purpose of adjusting such gear;

(4) all hatch coverings and fore and aft and thwart-ship beams shall, in so far as they are not interchangeable, be kept plainly marked to indicate the deck and hatch to which they belong and their position therein;

(5) hatch coverings shall not be used in the construction of cargo stages or for any other purpose which may expose them to damage.

Article 9.—Appropriate measures shall be prescribed to ensure that no hoisting machine, or gear, whether fixed or loose, used in connection therewith, is employed in the processes on shore or on board ship unless it is in a safe working condition.

In particular,

(1) before being taken into use, the said machines, fixed gear on board ship accessory thereto as defined by national laws or regulations, and chains and wire ropes used in connection therewith, shall be adequately examined and tested, and the safe working load thereof certified, in the manner prescribed and by a competent person;

(2) after being taken into use, every hoisting machine, whether used on shore or on board ship, and all fixed gear on board ship accessory thereto as defined by national laws or regulations shall be thoroughly examined or inspected as follows:—

(a) to be thoroughly examined every four years and inspected every twelve months: derricks, goose necks, mast bands, derrick bands, eyebolts, spans and any other fixed gear the dismantling of which is specially difficult;

(b) to be thoroughly examined every twelve months: all hoisting machines (e.g. cranes, winches), blocks, shackles and all other accessory gear not included in (a).

All loose gear (e.g. chains, wire ropes, rings, hooks) shall be inspected on each occasion before use unless they have been inspected within the previous three months.

Chains shall not be shortened by tying knots in them and precautions shall be taken to prevent injury to them from sharp edges.

A thimble or loop splice made in any wire rope shall have at least three tucks with a whole strand of rope and two tucks with one-half of the wires cut out of each strand; provided that this requirement shall not operate to prevent the use of another form of splice which can be shown to be as efficient as the form hereby prescribed.

(3) Chains and such similar gear as is specified by national laws or regulations (e.g. hooks,

rings, shackles, swivels) shall, unless they have been subjected to such other sufficient treatment as may be prescribed by national laws or regulations, be annealed under the supervision of a competent person as follows:

(a) In the case of chains and the said gear carried on board ship:

(i) half inch ($12\frac{1}{2}$ mm.) and smaller chains or gear in general use once at least in every six months;

(ii) all other chains or gear (including span chains but excluding bridle chains attached to derricks or masts) in general use once at least in every twelve months:

Provided that in the case of such gear used solely on cranes and other hoisting appliances worked by hand, twelve months shall be substituted for six months in sub-paragraph (i) and two years for twelve months in sub-paragraph (ii);

Provided also that, if the competent authority is of opinion that owing to the size, design, material or infrequency of use of any of the said gear other than chains the requirements of this paragraph as to annealing are not necessary for the protection of the workers, it may, by certificate in writing (which it may at its discretion revoke) exempt such gear from the said requirements subject to such conditions as may be specified in the said certificate.

(b) In the case of chains and the said gear not carried on board ship:

Measures shall be prescribed to secure the annealing of the said chains and gear.

(c) In the case of the said chains and gear whether carried on board ship or not, which have been lengthened, altered or repaired by welding, they shall thereupon be tested and re-examined.

(4) Such duly authenticated records as will provide sufficient prima facie evidence of the safe condition of the machines and gear concerned shall be kept, on shore or on the ship as the case may be, specifying the safe working load and the dates and results of the tests and examinations referred to in paragraphs (1) and (2) of this Article and of the annealings or other treatment referred to in paragraph (3).

Such records shall, on the application of any person authorized for the purpose, be produced by the person in charge thereof.

(5) The safe working load shall be kept plainly marked on all cranes, derricks and chain slings and on any similar hoisting gear used on board ship as specified by national laws or regulations. The safe working load marked on chain slings shall either be in plain figures or letters upon the chains or upon a tablet or ring of durable material attached securely thereto.

(6) All motors, cogwheels, chain and friction gearing, shafting, live electric conductors and steam pipes shall (unless it can be shown that by their position and construction they are equally safe to every worker employed as they would be if securely fenced) be securely fenced so far as is practicable without impeding the safe working of the ship.

(7) Cranes and winches shall be provided with effective appliances to prevent the accidental descent of a load while in process of being lifted or lowered.

(8) Appropriate measures shall be taken to prevent exhaust steam from and, so far as practicable, live steam to any crane or winch obscuring any part of the working place at which a worker is employed.