

## § 58.25–30

(3) Occurrence of a low oil level in any oil reservoir of a hydraulic, power-operated steering-gear system.

(e) An audible and a visible alarm must activate in the machinery space upon—

(1) Failure of any phase of a three-phase power supply;

(2) Overload of any motor described by § 58.25–55(c); or

(3) Occurrence of a low oil level in any oil reservoir of a hydraulic, power-operated steering-gear system.

NOTE: See § 62.50–30(f) of this subchapter regarding extension of alarms to the navigating bridge on vessels with periodically unattended machinery spaces.

(f) Each power motor for the main and auxiliary steering gear must have a “motor running” indicator light in the pilothouse, and in the machinery space, that activates when the motor is energized.

## § 58.25–30 Automatic restart.

Each control system for main and auxiliary steering gear and each power actuating system must restart automatically when electrical power is restored after it has failed.

## § 58.25–35 Helm arrangements.

(a) The arrangement of each steering station, other than in the steering-gear compartment, must be such that the helmsman is abaft the wheel. The rim of the wheel must be plainly marked with arrows and lettering for right and left rudder, or a suitable notice indicating these directions must be posted directly in the helmsman’s line of sight.

(b) Each steering wheel must turn clockwise for “right rudder” and counterclockwise for “left rudder.” When the vessel is running ahead, after clockwise movement of the wheel the vessel’s heading must change to the right.

(c) If a lever-type control is provided, it must be installed and marked so that its movement clearly indicates both the direction of the rudder’s movement and, if followup control is also provided, the amount of the rudder’s movement.

(d) Markings in the pilothouse must not interfere with the helmsman’s vi-

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sion, but must be clearly visible at night.

NOTE: See § 113.40–10 of this chapter for the arrangement of rudder-angle indicators at steering stations.

## § 58.25–40 Arrangement of the steering-gear compartment.

(a) The steering-gear compartment must—

(1) Be readily accessible and, as far as practicable, separated from any machinery space;

(2) Ensure working access to machinery and controls in the compartment; and

(3) Include handrails and either gratings or other non-slip surfaces to ensure a safe working environment if hydraulic fluid leaks.

NOTE: Where practicable, all steering gear should be located in the steering-gear compartment.

(b) [Reserved]

## § 58.25–45 Buffers.

For each vessel on an ocean, coastwise, or Great Lakes voyage, steering gear other than hydraulic must be designed with suitable buffering arrangements to relieve the gear from shocks to the rudder.

## § 58.25–50 Rudder stops.

(a) Power-operated steering gear must have arrangements for cutting off power to the gear before the rudder reaches the stops. These arrangements must be synchronized with the rudder stock or with the gear itself rather than be within the control system for the steering gear, and must work by limit switches that interrupt output of the control system or by other means acceptable to the Commanding Officer, Marine Safety Center.

(b) Strong and effective structural rudder stops must be fitted; except that, where adequate positive stops are provided within the steering gear, such structural stops need not be fitted.

## § 58.25–55 Overcurrent protection for steering-gear systems.

(a) Each feeder circuit for steering must be protected by a circuit breaker on the switchboard that supplies it and

must have an instantaneous trip set at a current of at least—

(1) 300% and not more than 375% of the rated full-load current of one steering-gear motor for a direct-current motor; or

(2) 175% and not more than 200% of the locked-rotor current of one steering-gear motor for an alternating-current motor.

(b) No feeder circuit for steering may have any overcurrent protection, except that required by paragraph (a) of this section.

(c) Neither a main or an auxiliary steering-gear motor, nor a motor for a steering-gear control system, may be protected by an overload protective device. The motor must have a device that activates an audible and a visible alarm at the main machinery-control station if there is an overload that would cause overheating of the motor.

(d) No control circuit of a motor controller, steering-gear control system, or indicating or alarm system may have overcurrent protection except short-circuit protection that is instantaneous and rated at 400% to 500% of—

(1) The current-carrying capacity of the conductor; or

(2) The normal load of the system.

(e) The short-circuit protective device for each steering-gear control system must be in the steering-gear compartment and in the control circuit immediately following the disconnect switch for the system.

(f) When, in a vessel of less than 1,600 gross tons, an auxiliary steering gear, which § 58.25–10(c)(3) requires to be operated by power, is not operated by electric power or is operated by an electric motor primarily intended for other service, the main steering gear may be fed by one circuit from the main switchboard. When such an electric motor is arranged to operate an auxiliary steering gear, neither § 58.25–25(e) nor paragraphs (a) through (c) of this section need be complied with if both the overcurrent protection and compliance with §§ 58.25–25(d), 58.25–30, and 58.25–70 (j) and (k) satisfy the Commanding Officer, Marine Safety Center.

#### § 58.25–60 Non-duplicated hydraulic rudder actuators.

Non-duplicated hydraulic rudder actuators may be installed in the steering-gear control systems on each vessel of less than 100,000 deadweight tons. These actuators must meet IMO A.467(XII) (incorporated by reference, see 46 CFR 58.03–1) and be acceptable to the Commanding Officer, Marine Safety Center. Also, the piping for the main gear must comply with 46 CFR 58.25–10(e)(3).

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#### § 58.25–65 Feeder circuits.

(a) Each vessel with one or more electric-driven steering-gear power units must have at least two feeder circuits, which must be separated as widely as practicable. One or more of these circuits must be supplied from the vessel's service switchboard. On a vessel where the rudder stock is over 23 centimeters (9 inches) in diameter in way of the tiller, excluding strengthening for navigation in ice, and where a final source of emergency power is required by § 112.05–5(a) of this chapter, one or more of these circuits must be supplied from the emergency switchboard, or from an alternative source of power that—

(1) Is available automatically within 45 seconds of loss of power from the vessel's service switchboard;

(2) Comes from an independent source of power in the steering-gear compartment;

(3) Is used for no other purpose; and

(4) Has a capacity for one half-hour of continuous operation, to move the rudder from 15° on either side to 15° on the other in not more than 60 seconds with the vessel at its deepest loadline draft and running at one-half maximum ahead service speed or 7 knots, whichever is greater.

(b) Each vessel that has a steering gear with multiple electric-driven power units must be arranged so that each power unit is supplied by a separate feeder.

(c) Each feeder circuit must have a disconnect switch in the steering-gear compartment.

(d) Each feeder circuit must have a current-carrying capacity of—