

Improve Safety by Testing Equipment

The International Safety Management (ISM) Code, the International Convention for Safety of Life at Sea (SOLAS), and the U.S. Code of Federal Regulations (CFR) require regular testing of critical equipment.

ISM Code A-10	Maintenance of the Ship and Equipment
SOLAS Ch V Reg 26	Steering Gear: Testing and Drills
33 CFR 164.25	Tests before Entering or Getting Underway
33 CFR 96.250	Table 96.250 Vessel Maintenance Procedures

Washington State recommends a series of tests and inspections before a vessel enters or operates in state waters. These best practices are based on accepted industry standards and provide an additional level of safety. They are described in Washington Administrative Code (WAC) 317-31, Accepted Industry Standards.

U.S. and International Requirements

ISM Code A-10 and 33 CFR 96 require vessels to:

- Identify equipment and technical systems which could result in hazardous situations if they fail suddenly.
- Provide specific actions in the Safety Management System (SMS) to improve the reliability of the equipment or systems.
- Include regular testing of stand-by arrangements, equipment and technical systems that are not in continuous use.
- Incorporate testing into the ship's operational maintenance routine. Ecology recommends using checklists to ensure consistency and accuracy.
- Conduct inspections at appropriate intervals and report any non-conformities, with the cause, if known.
- Maintain inspection records onboard.

When the engine-room is put in a stand-by condition, the officer in charge of the engineering watch shall ensure that all machinery and equipment which may be used during maneuvering is in a state of immediate readiness. An adequate reserve of power must be available for steering gear and other requirements (required by STCW A-VIII/2 Part 3.68).

Use of Checklists

Vessel operators are strongly encouraged to develop and utilize checklists for testing critical systems. Ecology's **Focus on Vessel Emergency Checklists** (Publication Number: 11-08-005) may be helpful in developing these engineering operational checklists.

WHY IT MATTERS

A comprehensive system of **pre-arrival and pre-departure checks and tests** is essential for the safe operation of vessels in coastal waters. Engineering, steering, and navigation equipment should be tested to ensure they are fully operational.

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If you need this publication in an alternate format, call the Spills Program at 360-407-7455. Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 877-833-6341.

What equipment? What tests? When?

The pre-arrival and pre-departure checklists should include all the systems and equipment below. These tests or inspection should be conducted **within 12 hours prior** to entering or operating in Washington waters. Systems required under U.S. law to be tested are marked with an asterisk *.

- **MAIN PROPULSION MACHINERY*** – Test main propulsion machinery ahead and astern.
- **ELECTRICAL SYSTEMS*** - Test standby and emergency generators to ensure they are functioning properly. You should maneuver with at least two diesel generators on line, with one in standby and ready for immediate service.
- **FUEL OIL SYSTEMS** – Complete any fuel switching prior to maneuvering or after the vessel is secured at a berth. Verify that primary and back-up fuel pumps are proven operational and the fuel oil settler and service tanks are filled with adequate, clean oil for the entire transit through state waters.
- **LUBE OIL SYSTEMS** - Verify primary and back-up lube oil systems, including pumps, piping, valves, coolers, and switching mechanisms are operational.
- **OIL STRAINERS** - Ensure that all fuel and lube oil strainers are cleaned and ready for use. Manually cycle automatic self-cleaning strainers prior to maneuvering.
- **COOLING WATER SYSTEMS** – Verify all seawater and freshwater cooling, primary and back-up circulating systems are operational. This includes pumps, lines, valves, coolers, and automatic and manual switching mechanisms. Ensure that seawater strainers are clean and high/low suctions used appropriately.
- **CONTROL/START AIR SYSTEMS** - Verify control and starting air system tanks are full, all primary and back-up air compressors are operational, and condensate in both systems has been properly drained.
- **STEERING GEAR*** - Inspect the primary and secondary steering gear. Test the remote steering gear control system, each steering position on the bridge, rudder angle indicators, and alarms. Test for full movement of the rudder. Conduct emergency steering drill 48 hours prior to entry.
- **NAVIGATIONAL EQUIPMENT** – Check all navigation equipment. Post and log any errors.
- **EMERGENCY LIGHTING AND POWER*** – Test all storage batteries for emergency lighting and power systems in vessel control and propulsion machinery spaces.
- **INTERNAL CONTROL COMMUNICATIONS AND ALARMS*** – Test all internal vessel control communications and vessel control alarms.

What if I am not able to complete an equipment test?

Except in an emergency, you may not enter U.S. navigable waters if you do not satisfactorily complete all required equipment tests. You must notify the US Coast Guard Captain of the Port of defects to required equipment.