

MARITIME SAFETY STANDARD FOR THE FLOATING EQUIPMENT INSPECTION PROGRAM

1.0 PURPOSE

Establish the Standard for the execution of the Floating Equipment Inspection Program.

2.0 BACKGROUND

The Panama Canal Authority (ACP) Administrator's Directive AD-2004-04, dated May 14, 2004.

3.0 SCOPE

This Standard applies to floating equipment and small craft owned or operated by ACP, or owned by third parties operating in Canal Waters for commercial purposes.

4.0 LEGAL FOUNDATION

This Standard is established pursuant to Agreement No. 12 of the Board of Directors of the Panama Canal Authority, Chapter IV, Articles 27 and 28.

5.0 DEFINITIONS

For purposes of this Standard, the following definitions shall apply:

5.1 Floating equipment: All type of crafts, with or without propulsion, utilized or that can be utilized as a means of transportation on water.

5.2 OPM: Fleet and Equipment Maintenance Division

5.3 OPMN: Engineering and Naval Architectural Section

5.4 OPXI: Board of Inspectors

5.5 OPXI-S: Maritime Safety Unit

5.6 Ship owner: A person or company that is a legally constituted and lawfully recognized as the owner or the one who administers the floating equipment.

5.7 Inspector: Person in charge of inspecting the floating equipment and monitoring compliance with Maritime Safety Unit Regulations and Standards.

5.8 Small craft: Craft having a length overall of up to 24m (80 feet).

5.9 Hull: Set of construction parts of a ship or craft which make up the watertight casing able to resist the external forces of the sea.

5.10 Collision: Contact, violent or not, produced between two vessels that are navigating or are capable of navigating.

5.11 Canal Waters: Are waters within the Geographic area that follow the course of the Panama Canal and are contiguous to it from the Pacific to the Atlantic oceans. These include anchorage areas, the ports of Cristobal and Balboa, shorelines and areas in which activities, exclusively compatible with the operation of the Canal, are carried out.

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5.12 Aground: Incident where the hull of a small craft or floating equipment is, for whatever reason, being supported at sea bottom and is unable to float, navigate, maneuver or steer.

5.13 Length: In general terms, the length of craft or floating equipment *measured* over the centerline.

5.14 Floating Equipment Operator: The Captain responsible for the equipment, or the certified operator or person designated by him/her that is assigned to it.

5.15 Amidships: Is the central line that runs fore-to-aft, parallel to the keel.

5.16 Immediate: Signifies that a deficiency found and indicated during an inspection shall be corrected before the inspection being executed is finalized.

5.17 Aground/Grave (dry dock): Clean, paint or repair the ship's bottom or hull.

5.18 Graving: Ship's bottom; normally the immersed bottom of the ship.

5.19 Competent person: A person who is well versed in a discipline or technique, or who has the capacity and aptitudes for taking charge of it; a specialist on the subject – an expert.

5.20 Passenger: All individuals on board but who do not belong to the crew.

5.21 Crew: Seafarers working on board a ship, excluding the Captain.

5.22 Persons: All those on board, whether crewmembers or passengers.

5.23 Inspection certificate: Document issued by the Maritime Safety Unit and which indicates that the ships have been examined and found to be in compliance with the established Standards for seaworthiness.

5.24 Extension: Deferral; to delay the execution or performance of something.

5.25 Propeller: Propulsion, traction or uplifting component, made up of vanes or blades regularly arranged around a motor-driven hub.

5.26 Shaft: Rod or bar crossing a rotating body and serves as its support during movement.

5.27 Hubs: Central part for the attachment of parts intended to rotate around a shaft.

5.28 Seals: Water tightness, shutter or retaining device.

5.29 Stern tube: Tube through which the propeller shaft crosses the hull.

5.30 Rudder blade: A mechanism installed near the stern which controls the horizontal direction of the vessel.

5.31 Rudder axle: The lockup shaft of the rudder blade.

5.32 Seawater intake: Compartment through which seawater enters for cooling or for general use.

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5.33 Kort Nozzle: It is a fitting with an internal profile calculated so that the fluid circulating inside transforms part of the kinetic energy, or *vis viva*, with minimal friction loss.

5.34 Log book: A book in which all important events that occur while navigating are recorded. It shall include, but is not limited to the course, speed, machine rating, vessel conditions, weather, etc.

5.35 Panama Maritime Authority (AMP): Overseer of the administration and enforcement of International Maritime Organization (IMO) Conventions and National regulations.

5.36 Registration Certificate: A document issued to a ship authorizing its flag and navigation.

5.37 Radio Station Certificate: A certificate issued to a ship equipped with a radiotelephony installation that fully satisfies the provisions set forth in Chapter IV of the International Convention for the Safety of Human Life at Sea (SOLAS).

5.38 Competent person: A person having the capacity and aptitude for some purpose.

5.39 Periodic Inspection: An inspection conducted every four years for the issuance of new Inspection Certificates.

5.40 Annual Intermediate Inspection: An annual monitoring inspection of the Floating Equipment Inspection Program.

6.0 GENERAL

6.1 Maritime Safety Unit (OPXI-S):

6.1.1 Shall determine and establish the minimum safety requirements on the condition of the hull, main and auxiliary engines, propulsion, drainage, rudder/s, safety equipment, fire-fighting, and navigation; as well as determine the number of passengers and crew that can go aboard the floating equipment.

6.1.2 Shall issue Inspection Certificates valid for one year to ACP crafts, in periodic inspections, and extend them when considered convenient.

- In the case of contractors and third parties, only the Inspection Reports and List of Deficiencies and Recommendations shall be issued; also, such equipment shall be inspected once a year.

6.1.3 Shall review the inspection results and testing performed by OPM competent personnel, contractor, and/or any other competent person within or outside ACP to determine if the minimum requirements are being met for inspection acceptance, and perform an examination of the floating equipment.

6.1.4 Shall perform inspections of floating equipment under its responsibility, vessels over 20 meters and less than 20 meters operating or that will operate in Canal Waters, to contractors and any vessel which, in its opinion warrants a maritime safety inspection, or to issue an Inspection Certificate.

6.1.5 Shall maintain a copy of the Inspection Certificate, as well as a copy of the Inspection Report and List of Deficiencies Found and Recommendations during the inspection.



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6.1.6 The ship owner or responsible person shall receive the original of the aforementioned documents, in the case of ACP crafts; contractors shall only receive a copy of the Inspection Report and List of Deficiencies Found and Recommendations.

6.1.7 Shall use as reference what is set forth in Safety Requirement Document No. 2600SEG310, 2600SEG309 *List of Major and Minor Floating Equipment Deficiencies and Floating Equipment Inspection Program, respectively, standard operating manuals, and Maritime Regulation for the Operation of the Panama Canal.*

6.1.8 Shall perform investigations of floating equipment incidents or accidents, and make the necessary recommendations to prevent their recurrence or minimize the risk.

6.2 Fleet and Equipment Maintenance Division (OPM):

6.2.1 Shall verify the following systems during the programmed careening of floating equipment subject to this standard.

6.2.1.1 During the programmed careening, competent personnel in the Fleet and Equipment Maintenance Division’s (OPM), Engineering and Naval Architectural Section (OPMN), in conjunction with the Floating Equipment Inspector, shall perform a thorough check of the floating equipment. All possible testing shall be effected, such as peening, thickness readings by ultrasonic thickness gage, x-rays, and dye tests with penetrating liquids in areas previously identified. For such tests and checks, the floating equipment hull shall be completely washed and clean.

6.2.1.2 The values allowed for wear of one plate shall not exceed the following percentages; if the percentage is exceeded, the plate, or plates, shall be replaced:

DESCRIPTION	MAXIMUM WEAR PERCENTAGE
Plating in general and decks	Up to 25% wear
Midship bottom plating	Up to 20% wear
Previously identified areas	Up to 25% wear
Bulkheads	Up to 35% wear
Longitudinal and transverse bulkheads	Up to 35% wear
Under deck longitudinal	Up to 30% wear
Keel plating	Up to 25% wear

6.2.1.3 Check the exterior and interior sides of the hull bottom plating for holes, cracks, blows, leaks, and excessive deformations in critical areas that exceed the allowable limits.

6.2.1.4 Check the lateral, keel and stem plating for holes, cracks, blows, leaks, and excessive deformations in critical areas that exceed the allowable limits.

6.2.1.5 Check fore-and-aft plating for excessive deformations, holes, cracks, blows, and leaks in critical areas that exceed the allowable limits.

6.2.1.6 Check that the seals and bolts in the watertight gates below the flotation line are in good condition and adequately working.

6.2.1.7 Check that zinc sacrificial anodes presenting more than 50% wear be replaced.

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6.2.1.8 Check that all systems or ducts, or sanitary discharge and cleanup channels, or other similar discharge systems that cross through the craft's hull are not filtering water due to piping cracks or ruptures.

6.2.1.9 Check that seawater intakes, mangers, seawater valves and drains shut down appropriately and do not leak water.

6.2.1.10 Check the area around the keel coolers for corrosion, damage or excessive deformation.

6.2.1.11 Check the condition of the fenders and their supports.

6.2.1.12 On crafts that utilize anchors, check the condition of such anchor/s, chain/s, manger, hawse-pipe, chain pipe, and hawsehole.

6.2.1.13 Examine the propeller system shaft/s every four years. Shafts shall be stuffed if wear is more than 6mm (1/4 inch), if the shaft diameter is > 230mm (9 inches) and < 305 mm (12 inches). Check the condition of the stern tube.

6.2.1.14 Inspect the condition of the propeller/s for damage or clearance (nozzle, if applicable). A special inspection shall be performed on the propeller spinner utilizing the cam thrust test.

6.2.1.15 Inspect the condition of the kort nozzles for corrosion or excessive deformation.

6.2.1.16 Inspect bushings for shaft or propeller shaft clearance.

6.2.1.17 Examine the parts of the steering system: rudder blades, flanking, shaft bushings and seals. At the inspector's discretion, the hydraulic cylinders, hoses, pumps, pipes, containers and other system components shall be inspected.

6.2.1.18 Examine all handrails which shall have a height that corresponds to the type of utilization that is not less than 910 millimeters (36 inches), and can support a minimum of 200 pounds at its gripping point. All pulley protectors, bushings, wheels, or moving equipment which could have a bearing on the safety of the personnel on board shall be examined. All deck drainage shall be checked to ensure that they are obstruction free. All tank and compartment ladders shall be examined to ensure that they are in good condition.

6.2.1.19 Examine internal structures, such as bulkheads, floors, ribs or framework to verify that there are no holes, corrosion, cracks, blows, or leaks in critical areas exceeding the allowed limits.

6.2.1.20 Examine the electrical system, including but not limited to generators, main distribution panel, navigation lights, alarms, remote shutdown testing of electrical motors, general lighting, radios, electric cables and their insulator.

6.3 In cases where the floating equipment subject to this Standard has suffered damages to the hull due to graving, careening, collision or other failures, or a defect is discovered that has a bearing on the safety of such equipment, the equipment will be placed out of service immediately, and shall be subject to extraordinary inspections, in order to determine the safety conditions for navigation. **The Ship owner or responsible person shall immediately inform the Maritime Safety Unit of all accidents or incidents suffered by the floating equipment.**



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6.3.1 In the event that on the floating equipment subject to this standard, the damage suffered impacts on the safety of the ship, the Maritime Safety Unit is authorized to determine the manner in which to proceed for such repairs.

6.4 In cases where the floating equipment subject to this standard cannot be careened on the programmed date indicated in the Inspection Certificate, they shall notify the Maritime Safety Unit and request an extension to a new tentative date set for the careening.

6.4.1 Interval periods programmed for careening of ACP vessels:

SERVICE IN SALT WATER – NAVAL STEEL HULL

	SINGLE HULL LAUNCHES	DOUBLE HULL LAUNCHES	SINGLE HULL TUGBOATS	DOUBLE HULL TUGBOATS	SINGLE HULL DREDGES - BARGES	DOUBLE HULL DREDGES – BARGES
EXTERNAL STRUCTURES	1.0 years	2.0 years	4.0 years	4.0 years	4.0 years	4.0 years
INTERNAL STRUCTURES	1.0 years	1.0 years	2.0 years	4.0 years	2.0 years	4.0 years

SERVICE IN SALT WATER – ALUMINUM HULL

	SINGLE HULL LAUNCHES	DOUBLE HULL LAUNCHES
EXTERNAL STRUCTURES	2.0 years	4.0 years
INTERNAL STRUCTURES	2.0 years	4.0 years

SERVICE IN FRESH WATER – NAVAL STEEL HULL

	SINGLE HULL LAUNCHES	DOUBLE HULL LAUNCHES	SINGLE HULL TUGBOATS	DOUBLE HULL TUGBOATS	SINGLE HULL DREDGES - BARGES	DOUBLE HULL DREDGES – BARGES
EXTERNAL STRUCTURES	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years
INTERNAL STRUCTURES	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years

SERVICE IN FRESH WATER – ALUMINUM HULL

	SINGLE HULL LAUNCHES	DOUBLE HULL LAUNCHES	SINGLE HULL TUGBOATS	DOUBLE HULL TUGBOATS	SINGLE HULL DREDGES - BARGES	DOUBLE HULL DREDGES – BARGES
EXTERNAL STRUCTURES	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years
INTERNAL STRUCTURES	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years	4.0 years

6.4.2 The requested extension shall only be valid until the ship is placed in careen. The extension shall not exceed one year. Within the extension period, the ship owner or responsible person shall perform a minimum of one hull inspection with the ship set afloat for verification of its condition. One copy of the report shall be sent to the Maritime Safety Unit.

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6.5 Newly constructed crafts and purchase of maritime safety equipment:

6.5.1 Prior to tendering, the ship owner or person responsible for the new floating equipment shall submit to OPXI-S the specifications for the equipment to be purchased for review, and comments or suggestions which may arise on the matter.

6.5.2 In the purchasing process of the safety equipment or new craft, the ship owner or person responsible shall include OPXI-S as a part of the Evaluating Committee of the tenders.

6.5.3 Purchasing agents shall forward to OPXI the specifications for the equipment to be purchased before their tender, for approval of the following items:

- 6.5.3.1** Personal Floatation Devices (Lifejacket)
- 6.5.3.2** Lifebuoys
- 6.5.3.3** Floating Life-Support Apparatus
- 6.5.3.4** Auto-igniting Luminous Device
- 6.5.3.5** Man over board Rescue System
- 6.5.3.6** Lights and Navigation lights
- 6.5.3.7** Oars or Paddles
- 6.5.3.8** Anchor
- 6.5.3.9** Axes
- 6.5.3.10** Compass
- 6.5.3.11** Boat Hooks
- 6.5.3.12** Life-Saving Rafts
- 6.5.3.13** Stationary Fire Extinguishing System
- 6.5.3.14** Pictograms for Placement on board Floating Equipment
- 6.5.3.15** General Alarm System

6.5.4 A temporary Inspection Certificate shall be issued, provided they have passed the initial certification inspection. The temporary certificate shall be utilized only for equipment acceptance testing, and shall not be considered as a permanent inspection certificate. This temporary certificate shall be valid for an extendable period of up to 90 days (3 months). To obtain the permanent Inspection Certificate, the ship owner or responsible person shall submit a copy of the Registration Certificate and Radio Station Certificate, temporary or permanent, issued by the Panama Maritime Authority (AMP).

6.5.5 The ship owner or person responsible should have a valid Inspection Certificate whenever submitting a request for renewal of the Certificate of Register and the Radio Station Certificate.

6.5.6 The extension or extensions granted to the inspection certificate will be identified by placing a letter at the side of the certificate's control number.

6.6 The ship owner or person responsible for all the floating equipment shall notify the Maritime Safety Unit of all structural changes to the propulsion and steering system, a detail of the repairs and/or modifications to the equipment that could affect the safety and seaworthiness of the floating equipment with the objective of determining the safety conditions for navigation; and, if needed, a re-inspection before commissioning the pertinent equipment or to establish new minimum safety requirements for the floating equipment in question.

6.7 The ship owner, or person responsible or in charge of the floating equipment shall not in any case, except as detailed in the List of Major and Minor Deficiencies, exceed the action dates submitted:



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6.7.1 Immediately: All deficiencies that are so indicated.

6.7.2 For life-saving equipment deficiencies: The maximum period allowed shall not exceed fifteen (15) calendar days after the notification date for the corrective action is received.

6.7.3 For firefighting equipment deficiencies: The maximum period allowed shall not exceed seven (7) calendar days after the notification date for the corrective action is received.

6.7.4 For machinery, hull, navigation and electrical equipment deficiencies: The maximum period allowed shall not exceed fifteen (15) calendar days after the notification date for the corrective action is received.

6.7.5 For contamination prevention deficiencies: The maximum period allowed shall not exceed seven (7) calendar days after the notification date for the corrective action is received.

6.7.6 For hazardous materials deficiencies: The action is to be corrected immediately.

DEFICIENCIES	PERIOD FOR CORRECTIVE ACTION
Lifesaving Equipment	Not to exceed 15 calendar days
Firefighting Equipment	Not to exceed 7 calendar days
Machinery, Hull and Structure, Lights and Navigation Equipment, Electric System, etc.	Not to exceed 15 calendar days
Contamination Prevention	Not to exceed 7 calendar days
Hazardous Materials	Immediately

6.8 The ship owner or person responsible for all the floating equipment shall submit the following documents to OPXI-S for review and approval:

- 6.8.1** Special table of obligations
- 6.8.2** Firefighting drawing and safety equipment
- 6.8.3** Safety Code
- 6.8.4** Operating Manuals

7.0 RESPONSIBILITIES

7.1 Of the ship owner or operator of the floating equipment:

7.1.1 Maintain floating equipment in good condition and in compliance with established maritime safety requirements.

7.1.2 Maintain the current Inspection Certificate on board the floating equipment; if it is not current, the craft shall be placed out of service immediately. Ensure that the Certificates that are on board are protected against environmental damage, such as humidity, dust, breakage, loss.

7.1.3 If the certificate is deteriorated in the manner described in point 7.1.2, or is illegible, a copy shall be requested from the Maritime Safety Unit as it is a controlled document.

7.1.4 Notify the Maritime Safety Unit what is detailed in points 6.3, 6.3.1, 6.4 and 6.4.1.

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7.1.5 Notify the Maritime Safety Unit at least one month in advance of the expiration date of the Inspection Certificate, of the availability of the equipment for its respective periodic, intermediate, and annual inspections.

7.1.6 Notify the Maritime Safety Unit of any inventory changes in their floating equipment, new or commissioned equipment, out of service, or transferred.

7.1.7 Comply with the deadlines of required actions in order to solve the deficiencies found during inspections.

7.1.8 If the deadline determined for the corrective actions is not met, the Inspection Certificate shall not be delivered until such required actions are complied with. In the event the equipment has a current Certificate, but has undergone an extraordinary inspection, if deficiencies were found, these shall be cited so that they are corrected within the recommended period. If the determined period is not complied with, the Inspection Certificate shall be removed from the craft and placed out of service.

7.1.9 If unable to comply with the determined periods, the ship owner or operator of the floating equipment shall submit, in writing, to the Maritime Safety Unit, the plan of action for correction of such deficiencies.

7.1.10 All individuals who have a license on board a floating equipment issued by the Board of Inspectors of the Panama Canal Authority, shall have it available and current at all times; otherwise, his/her supervisor shall be notified so that such person is replaced.

7.1.11 All vessels over 12 meters are required to have a log book on board, and a copy of the log book shall be kept on board at all times.

7.2 Of the Maritime Safety Unit (OPXI-S):

7.2.1 Establish the minimum safety requirements to be fulfilled by the floating equipment.

7.2.2 Maintain a current record of the inspections performed on floating equipment.

7.2.3 Notify floating equipment shipowners or operators of the inspection results and demand that the necessary corrections be effected.

7.3 Of Floating Equipment Inspectors of the Maritime Safety Unit:

7.3.1 Execute the inspections of the floating equipment.

7.3.2 Ensure compliance with this Standard.

7.3.3 Prepare detailed reports of the inspections and pertinent follow-ups performed.

7.3.4 Deliver documents set forth in point 6.1.6 to the ship owner and operator.

7.3.5 Notify floating equipment shipowners or operators of the inspection results and demand that the necessary corrections be effected, in the case of minor deficiencies.

7.3.6 Check that the period indicated by the ship owner or the person responsible or in charge of the floating equipment is in compliance with the maximum periods set forth in this Standard.



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7.3.7 Identify the risks that could arise in the floating equipment, and recommend the necessary actions, in accordance with the procedures established to that effect.

7.4 Of the Fleet and Equipment Maintenance Division (OPM):

7.4.1 Conduct inspections to floating equipment during its programmed careening or at the request of the Maritime Safety Unit.

7.4.2 Prepare detailed reports of inspections performed and respective follow-ups.

7.4.3 Send the inspection reports and the corrections effected to the floating equipment owner and the Maritime Safety Unit.

8.0 CONSULTATIONS

All information or clarification on the contents or application of this Standard shall be requested in writing to the Board of Inspectors of the Maritime Safety Unit.

9.0 EXCEPTIONS

Deviations or temporary exceptions in compliance with this Standard shall be requested in writing to the Board of Inspectors of the Maritime Safety Unit.

10.0 DURATION

This Standard is effective until modified or reviewed.

11.0 REFERENCES

11.1 Quality Policy and Objectives of the Board of Inspectors

11.2 Code of Federal Regulations 46 Shipping

11.3 U.S.C.G. Marine Safety Manual

11.4 ABYC American Boat and Yacht Council

11.5 International Maritime Organization Regulations

11.6 Classification Societies members of IACS.