

**TP 11249E**

**SHIP SAFETY  
STANDARD FOR  
IN-WATER  
SURVEYS**

**Canadian Coast Guard  
Ship Safety Branch  
1992**



## **STANDARD FOR IN-WATER SURVEYS**

### **1. APPLICATION**

- a) The procedures and requirements outlined in this Standard apply to non-passenger vessels to which permission has been granted by Ship Safety Headquarters for the acceptance of in-water survey in lieu of alternate drydockings.
- b) This Standard does not apply to tankers, Inland Waters vessels and 80% Ocean Modulus vessels

### **2. GENERAL**

- a) In lieu of a drydocking, an examination of the underwater portion and fittings of the hull as required by the appropriate regulations may be made by a team of divers and technicians in the presence of a Marine Surveyor. This in-water survey should provide, insofar as practicable, the information on the condition of the vessel's underwater hull and fittings usually obtained from a drydocking survey.
- b) The owner should be advised that a survey in drydock should be arranged if the in-water survey is not to the Marine Surveyor's satisfaction or if the condition of the vessel warrants a survey in drydock.
- c) Any surveys normally due at the time of the drydocking survey shall be conducted at the same time as the in-water survey. In any case, the Surveyor should satisfy himself as to the overall condition of the hull and machinery of the vessel.

### **3. PERIODICITY OF IN-WATER SURVEYS**

An in-water survey may be carried out in lieu of alternate surveys in drydock.

### **4. IN-WATER SURVEY PROGRAMME**

An initial application should be made by the owner to Ship Safety indicating the intention to have any ship(s) participate in an in-water survey programme.

Upon acceptance of the ship into the programme by Ship Safety Headquarters a preparatory survey in drydock shall be conducted.

## 5. PREPARATORY SURVEY IN DRYDOCK

An owner who desires to enter his vessel into the in-water survey programme must first drydock the vessel. The purpose of this preparatory drydocking is to conduct a survey of the hull and appropriate machinery items to evaluate their condition and the feasibility of conducting an inwater survey. In addition the following is required:

### a) Plans.

Three (3) copies of plans showing details of the hull and attachments below the waterline should be provided, one copy of which should be retained on board the ship. The plans should include the following information:

- (i) A shell expansion drawing of the vessel indicating the following information:
  - external hull markings,
  - bilge keels,
  - drain plugs,
  - watertight and oil tight bulkheads,
  - all shell openings and means of access, e.g. bolted plates, etc.
- (ii) Specific plans and data detailing (as relevant):
  - rudder, stock, stern frame and associated fittings, propeller(s),
  - "A" frames, bossings, any other attachments to the hull,
  - stabiliser fin boxes, bow thruster(s),
  - any other item which might be considered to be a feature for which details would be useful in the context of undertaking an in-water survey
- (iii) Reference data and instructions for the divers for any necessary underwater operations such as means of access to rudder bearings and for determining clearances of rudder bearings or propeller shaft strut and stern bearings, removal of sea suction grids and blanking off of openings.

**b) Hull Markings.**

The hull should be permanently marked externally to indicate the position of transverse primary members, transverse and longitudinal bulkheads or frames numbers. This may entail a weld bead grid system on the hull, a contrasting colour system or any other arrangement that is satisfactory to the attending Marine Surveyor. Means should also be provided to orientate the diver.

**c) Stern Bearings.**

Means should be provided for ascertaining that the seal assembly on oil lubricated bearings is intact and for verifying the clearance or wear-down of the stern bearing. For wood or rubber bearings, an opening in the top of the rope guard and a suitable gauge or wedge should be provided for checking the clearance by the diver.

**d) Rudder Bearings.**

Means and access should be provided for determining the condition and clearance of the rudder bearings and for verifying that all parts of the pintle and gudgeon assemblies are intact and secure.

**e) Sea Connections.**

Means of blanking sea chests and sea connections should be provided for the removal of sea valves unless inspected in drydock.

**f) Photographs.**

Colour photographs and/or video tapes of the following items together with a suitable scale should be taken for the purpose of subsequent identification of those items by the diver at the time of in-water survey:

- in-water shell openings including those for main inlets, discharge and thrust units,
- rudder and shaft closing plates in way of wear-down gauge plugs,
- additional items as may be considered necessary by the Marine Surveyor.

Copies of the photographs and/or video tapes should be readily available on board ship and should also be provided to Ship Safety Headquarters and to the Regional Office concerned.

**g) Preventative Measures.**

In preparation for the extended period between drydockings, measures should be taken such as renewal and/or recording of clearance of rudder bearings and bushes, shaft surveys, overhaul of ship's side valves etc., to take account of the maximum time allowed before the next scheduled drydocking survey.

**6. IN-WATER SURVEY REQUIREMENTS**

Prior to each in-water survey, a request should be made by the owner to a Ship Safety office indicating information such as date and location of the survey, general information on the diving company and a schedule for undertaking the in-water survey. The in-water survey should be conducted in accordance with the following requirements:

**a) Master's Statement.**

At the time of in-water survey the Master or Owner's representative should provide a declaration of all suspected or actual damage that has occurred since the previous drydocking.

**b) Survey Site.**

The proposed survey site should be in a protected location with calm clear water providing good underwater visibility. Sufficient visibility shall be available to enable the Marine Surveyor to ascertain if the hull has undergone any permanent setup or setdown. Special attention should also be given to the effects of current.

**c) Hull Condition.**

The hull should be clean for external survey and the Marine Surveyor should be satisfied that the method and quality of pictorial presentation is satisfactory and that the information obtained enables a reliable assessment to be made of the condition of the hull. The survey should be discontinued if the conditions or equipment deteriorate to the extent that the transmitted pictures and/or communications are no longer acceptable.

**d) Underwater Areas.**

An examination of the entire vessel below the waterline should be carried out by a competent diver using closed circuit television with two-way communication capable of being monitored by the Marine Surveyor as required.

Where practicable the in-water survey should be carried out while the vessel is in Light Operating Condition to facilitate the survey.

**e) Above Waterline Areas.**

An examination of the outside of the shell plating above the waterline and exposed portions of appendages should be carried out by the Marine Surveyor. Means should be provided to enable the Surveyor to accomplish this visual examination.

**f) Internal Inspection.**

Where a defect or damage is detected or suspected as a result of the in-water survey or the Master's statement, the internal structure should be examined as considered necessary to clarify or confirm the findings. Vessels operating in ice should have the internal structure examined in way of areas which are susceptible to ice damage.

In this respect, attention should be given to the hazards associated with entering ship's tanks.

**g) Report.**

Copies of the diver's report, pertinent colour photographs and/or video tapes should be submitted to the attending Marine Surveyor and Ship Safety Headquarters for record purposes.

**7. REPAIRS AND DEFICIENCIES**

Any required repairs should be carried out to the satisfaction of the attending Marine Surveyor.

**8. NEXT DRYDOCKING**

The in-water survey report should subsequently be compared with the survey undertaken at the next drydocking to confirm if the vessel condition is still suitable for subsequent in-water surveys.