



TECHNICAL CIRCULAR No. 286 of 16th August 2015

To:	All Surveyors/Auditors
Applicable to flag:	All Flags
Subject:	Soundings Inspection for All vessels
Reference:	CONARINA Instructions

**Soundings inspection – All vessels**

1. Provision for sounding is to be arranged in all tanks and compartments not readily accessible.
2. Means of sounding should provide reliable information on the amount (height) of liquid in tanks. In general, this means is to be a sounding pipe. A gauge glass, level indicating device, remote-gauging system, etc., may also be accepted as a means of sounding.
3. Sounding pipes size is to be not less than 32 mm (1.26") inside diameter.

*The inside diameter of sounding pipes in cargo holds may be less than the required diameter (32 mm min), provided there are no bends in the pipe and the Surveyor is satisfied with the sounding tape's ease in going through the pipe.*

4. Arrangement of sounding pipes is to be as straight as possible from the lowest point in the tank to the termination. Generally, pipes should not run through the bilge wells, however, if impracticable, the pipe in the well is to be of extra heavy thickness.

Arrangements at the vessel's plating are to protect the shell from damage caused by the striking of the sounding rod. Typically, this is achieved by provision of a striking plate welded to the pipe or to the shell, using extra-heavy tees or similar.

Where remote level indicating systems are fitted, plans showing the arrangements and details of the system, along with particulars of the sensing and transmitting devices, are to be submitted for review in each case.

Level gauges may be fitted in lieu of sounding pipes to tanks containing flammable liquid, such as fuel oil, provided that the failure of, or the damage to, the level gauge will not result in the

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release of fuel oil. Where the gauge is located such that it is subjected to a head of oil, a valve is to be fitted to allow for its removal. The level gauge is to be capable of withstanding the hydrostatic pressure at the location of installation, including that due to overfilling.

5. Termination of the sounding is to be above the highest point of the tank. It is required to be above the bulkhead deck in an always accessible location. When below the freeboard deck, sounding pipes are to be provided with means of closing, as follows:

- Oil Tanks - quick-acting self-closing gate valves
- Other Tanks - gate valves or a screw cap, secured to the pipe with a chain

Termination of sounding pipes from tanks containing fuel / lube oil are not allowed in the accommodation spaces except as noted below. Further, fuel tank sounding should not terminate in any space, where risk of ignition or spillage may present, like in the machinery spaces or in vicinity to engines, generators, major electrical equipment and hot surfaces (220 deg.C - 428 deg. F) in other compartments.

As a minimum: The location of the quick-acting self-closing gate valve is to be remote or effectively shielded from any source of ignition in vicinity, and a small diameter self-closing test cock (or equivalent arrangement) is to be located below the gate valve to ascertain that the fuel is not present at the terminal height. Arrangements should also prevent spillage of oil through the test cock, creating an ignition hazard. Furthermore, for vessels over 500 gross tons, an approved level gauge is to be provided.

If instead of a self-closing test cock, the tank is provided with an indicator (e.g., red dot) that shows overfill condition without allowing entrance (and thus spillage) of oil in the machinery space and the operation of the indicator requires opening of a self-closing valve arrangement, then the intent of the Rules and Ch II-2/4.2.2.3.5.1.3 of SOLAS Amendments 2000 requirements insofar as the self-closing test cock is concerned is satisfied by providing the overfill indicator.

The intent of SOLAS Amendments 2000 regulation II-2/4.2.2.3.5.1 is to limit as much as possible the use of sounding pipes that terminate in machinery spaces. However, if sounding pipes must be provided, then the SOLAS intent is to reduce their use as much as possible by installing a level gauge (II-2/4.2.2.3.5.1), which will provide an alternative means of determining tank level without opening the tank into the machinery space (closed system). The use of such a closed tank level gauging system is to ensure continued and accurate functioning.

As it is not easy to identify all possible sources of ignition in the vicinity of oil tank termination, this provision should be specified in the letter for the attending Surveyor's verification.

Sounding pipes fitted in permanently installed fuel oil tanks may terminate in the *accommodation passageways, provided the 8 conditions below are satisfied.*

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- a. *The vessel is below 45.7 meters (150 feet) in length and less than 500 gross tons*
- b. *The flashpoint of the fuel is above 60°C (140°F).*
- c. *The accommodation spaces are located above the fuel oil tanks and extend to the full breadth of the vessel.*
- d. *It is impractical to install even a curved sounding pipe leading to weather avoiding termination in accommodation spaces.*
- e. *The sounding pipes are not terminated in dining rooms, lounges, lavatories, cabins, offices, hospitals, cinemas, game & lobby rooms, barber shops, pantries containing no cooking appliances and similar spaces.*
- f. *The vessel's Fuel oil system includes a separate day tank fitted with means of sounding. The day tank sounding means are located outside the accommodation spaces.*
- g. (i) *The sounding pipe is fitted with a self-closing valve at the open end and a small diameter self-closing test cock or equivalent located below the grate, OR*
- g. (ii) *Where the sounding pipe arrangement in the day tank does not permit a device as per item g(i) above, each such tank is to be fitted with a high level alarm to prevent spillage through the sounding pipe.*
- h. *A CAUTION plate, in RED warning personnel not to open the sounding pipe except for sounding the tank, is permanently posted in a conspicuous location where the sounding pipe terminates.*

6. For tanks containing flammable/combustible materials or tanks integral with the shell and located below the deepest load line, gauge glasses are allowed, provided they are fitted with a valve at each end and are adequately protected from mechanical damage. The glass is to be of a flat type; the above valves are to be of an approved self-closing type.

Cylindrical glass is allowed on hydraulic oil tanks when tanks are located in spaces other than a category A machinery space (i.e., with no engines, generators, major electrical equipment, or hot surfaces within).

7. Where the cofferdam is located above summer water level and no pipe is passing through this cofferdam, the sounding pipe may not be required. (such as the cofferdam between Emergency D/G room and Machinery Space Cat. A).

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REFERENCES:

- CONARINA Instructions and Procedures

ATTACHMENTS: No.

Kindest Regards,  
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