



TECHNICAL CIRCULAR No. 586 of 08th October 2019

To	All Surveyors/Auditors
Applicable to flag	All Flags
Title	Inclining Experiment & Lightweight Survey Verification
Reference	CONARINA-Survey Instructions

Inclining Experiment & Lightweight Survey Verification

1 Preparation

The responsibility for preparing the vessel for the test, manning the stations, moving the weights, recording the data, and submitting the results in a complete booklet form rests with the shipyard, owner, or naval architect.

The Surveyor must witness a stability test and attest the satisfactory performance of the experiment in a report provided to the CONARINA Head Office.

Vessels for which a Load Line Certificate will be issued and stability evaluated by CONARINA, are required to perform a stability test.

The requirement for an Inclining Experiment may be waived for subsequent vessels in a series built from the same set of drawings of an inclined vessel if the calculated light ship properties meet the following criteria:

- A calculation of “weights and centers” is prepared indicating the differences between the subsequent and the inclined vessels are within the limits specified in MSC/Circ.1158 (if constructed before 1 January 2009) or SOLAS Regulation II-1/B-1(5.2) (if constructed on/after 1 January 2009) unless indicated otherwise by the Administrations.
- The calculated light ship properties are subsequently confirmed by a Lightweight Survey (also known as a deadweight survey) witness by CONARINA Surveyor and found to be within the limits specified in Regulations mentioned above.

Where the limits specified in MSC/Circ.1158 are exceeded, requests for waivers should be submitted to the CONARINA Head Office for their action to contact the Administration to determine the acceptability of waiver.

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The Surveyor is to refer to ASTM F1321 "Standard Guide for Conducting a Stability Test (Lightweight Survey and Inclining Experiment) to Determine the Light Ship Displacement and Centers of Gravity of a Vessel.

2 Required Documentation

The Surveyor should inform the responsible party conducting the test to submit inclining test /lightweight survey procedure to Engineering Office no later than two weeks before the scheduled performance of the test.

3 Task

Surveyor shall verify and record the status of every tank, full, empty or slack with sounding/ullage.

Surveyor shall verify the certified weights, the initial position of the inclining weights and their positions after the movement, corresponding deflection for each of the pendulums or other accepted measuring devices.

If the vessel is fitted with permanent ballast, the Surveyor shall confirm and document the amount of weight and its locations onboard the vessel.

4 Special Instructions

Surveyor shall be guided by the reviewed Inclining Experiment/Lightweight Survey Procedure. If any additional requirements or instructions from the Administration were identified during the review process, they would be indicated as Engineering Comments for the Surveyor's attention.

4.1 Deviations from Approved Procedure

Minor deviations from the approved procedure may be authorized by the attending CONARINA Surveyor.

Examples of minor deviations include, but are not limited to the following:

- Small changes in freeboard reading locations (typically due to obstructions on deck)
- Changes in date/time of test
- Number of people on board during test
- Location of the pendulums/measuring devices

Should major deviations be discovered during the test, contact the Engineering office approving the procedure immediately. This is to ensure that any changes that could affect the accuracy or acceptability of the results are approved by the Engineering office prior to the completion of the test. Failure to do so may result in the test result being rejected and the test having to be redone.

Examples of major deviations include, but are not limited to the following:

- Omission of freeboard readings and/or draft mark readings
- Reduction in the number of devices measuring the deflection (pendulums, U-Tubes, etc.)

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- **Reducing the maximum deflection to each side**
- Omission of weight movements
- More slack tanks than permitted by the approved procedure
- Initial heel exceeding 0.5 degrees

4.2 *Approved Stability Documentation & Additional Requirement*

The Surveyor shall confirm whether the stability documentation (including but not limited to stability letters, stability booklets, marine operation manuals, etc.) is approved and sighted on board.

5 Outcome

Surveyor may include the copies of data sheets, signed by the witnessing Surveyor on the day of the test with the form instead of rewriting the data on the form.

Surveyor shall sign and promptly submit the original to CONARINA Head Office for the stability evaluation for further action upon final preparation and review of the applicable report form.

REFERENCES:

- CONARINA – Instruction

Courtesy of ABS

- ATTACHMENTS: No

kindest Regards,
 Val Bozenovici
 Naval Architect – Conarina Technical Director

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