

**QUALITY SYSTEM  
INSTRUCTIVE**

**PREPARED BY:**

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**REVISED AND APPROVED BY:**

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**1.0 TITLE**

**INSTRUCTIVE FOR THE CALCULATION AND ISSUANCE OF THE TONNAGE CERTIFICATE, SMS (NON-CONVENTION).**

**2.0 OBJECTIVE**

To assist and guide the surveyor to obtain the required information for the completion of the report and the calculations to determine the gross and net tonnages in accordance to the Simplified Measurement System.

**3.0 RESPONSIBILITY**

- 3.1 Is responsibility of the personnel of Technical Management to assure that all the processes contained in this INSTRUCTIVE are fulfilled for the verifications and issuance of the Tonnage Certificate SMS.
- 3.2 Is responsibility of the personnel of the Operations Management to support in the monitoring for compliance of the mechanisms for verifications and issuance of the Tonnage Certificate SMS.
- 3.3 Is responsibility of the surveyors to comply with to the procedures contained in this instructive when carrying out the verifications and calculations for the Tonnage Certificate SMS.

**4.0 DEFINITIONS**

- 4.1 **PMDS**, Panama Maritime Documentation Services, Inc., Recognized Organization by the Maritime Administrations of Panama, Belize and Bolivia.
- 4.2 **IMO**, International Maritime Organization, Classification Society.
- 4.3 **SIMPLIFIED MEASUREMENT SYSTEM (SMS)**, Regulations to determine the gross and net tonnages of vessels less than 24 meters length approved by Maritime Administrations for vessels not covered by the International Convention on Tonnage Measurement of Ships, 1969. Referred by Code of Federal Regulations of the USCG Title 46, sub part E (Rev. 12-00).
- 4.4 **MARITIME ADMINISTRATION.**

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- 4.4.1 The Panama Maritime Authority (PMA) is the responsible to regulate all aspects related to the merchant marine of Panama, it has a representative office in New York for the matters of Maritime Safety known as EX-SEGUMAR.
- 4.4.2 The Maritime administration of Belize is in charge to regulate all aspects related to the merchant marine.  
The International representation is performed by the International Merchant Marine Registry of Belize, IMMARBE.
- 4.4.3 The Maritime Administration of Bolivia, is the Registro Internacional Boliviano de Buques (RIBB).

**4.5 VESSEL'S PARTICULARS:**

- 4.5.1 Overall length (L) means the horizontal distance between the outboard side of the foremost part of the stem and the outboard side of the aftermost part of the stern, excluding rudders, outboard motor brackets, and other similar fitting and attachments.
- 4.5.2 Overall breadth (B) means the horizontal distance taken at the widest part of the hull, excluding rub rails from the outboard side of the skin (outside planking or plating) on one side of the hull to the outboard side of the skin on the other side of the hull.
- 4.5.3 Overall depth (D) means the vertical distance taken at or near midships from a line drawn horizontally through the uppermost edges of the skin (outside planking or plating) at the sides of the hull (excluding the cap rail, trunks, cabins, and deckhouses) to the outboard face of the bottom skin of the hull, excluding the keel. For a vessel that is designed for sailing and has a keel faired to the hull, keel is included in "overall depth" if the distance to the bottom skin of the hull cannot be determined reasonably.
- 4.5.4 Registered length
  - 4.5.4.1 For a single-hull vessel, the vessel's overall length; and
  - 4.5.4.2 For a multi-hull vessel, the horizontal distance between the outboard side of the foremost part of the stem of the foremost hull and the outboard side of the aftermost part of the stem of the aftermost hull, excluding fitting or attachments.
- 4.5.5 Registered breadth
  - 4.5.5.1 For a single hull vessel, the vessel's overall breadth; and

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4.5.5.2 For a multi-hull vessel, the horizontal distance taken at the widest part of the complete vessel between the outboard side of the skin (outside planking or plating) on the outboardmost side of one of the outboardmost hulls to the outboard side of the skin on the outboardmost side of the other outboardmost hull, excluding rubrails.

4.5.6 Registered depth

4.5.6.1 For a single-hull vessel, the vessel's overall depth; and

4.5.6.2 For a multi-hull vessel, the overall depth of the deepest hull.

4.5.7 Vessel designed for sailing means a vessel which has the fine lines of a sailing craft and is capable of being propelled by sail, whether or not the vessel is equipped with an auxiliary motor, a decorative sail, or a sail designed only to steady the vessel.

**4.6 MEASUREMENTS**

4.6.1 All length and depths must be measured in a vertical plane at centerline and breadths must be measured in a line at right angles to that plane. All dimensions must be expressed in metres to the nearest centimeter.

4.6.2 For a multi-hull vessel, each hull must be measured separately for overall length, breadth and depth and the vessel as whole must be measured for registered length, breadth and depth.

**4.7 APPLICABLE REGULATIONS**

4.7.1 The calculations of volumes to determine the gross and net tonnage will be carried out in accordance to the regulations of the Simplified Measurement System (SMS).

**4.8 TYPES OF VERIFICATIONS FOR TONNAGE MEASUREMENT**

4.8.1 Initial verification and calculation, is carried out to new construction, that is to say the first calculation for the Tonnage Certificate (SMS).

4.8.2 When a ship change flag.

4.8.3 After the ship has suffered structural alterations or modifications that affect the gross and / or net tonnages.

**4.9 TYPE AND VALIDITY OF THE CERTIFICATES:**

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4.9.1 Interim Tonnage Certificate SMS, with a maximum validity of five (5) months counted from the date of verification and calculation, is issued by the surveyor to the ship whose initial verification has been completed.

4.9.2 Statutory Tonnage Certificate SMS (FULL TERM), is issued by the Head Office of PMDS, and endorsed by the Administration after completion and/or verifying the required calculations to determine the net and gross tonnages of the ship.

**4.10 SCOPE OF APPLICATION**

The content of this instructive is applied to all ships of less than 24 meters length as defined in item 4.5 of this Instructive, and ships not covered by the International Convention on Tonnage Measurement of Ships, 1966 (ITC).

**5.0 ACTIVITIES**

**5.1 PROCESS OF VERIFICATION FOR TONNAGE CERTIFICATE SMS**

- Surveyor
- 5.1.1 Includes the provisions of the Procedure for the Survey and Interim Certification P-SSC-03(I) and will be governed by the specifics detailed in this Instructive in all verification and calculation for Tonnage Certificate SMS inspection.
  - 5.1.2 Obtains scale drawings of the general arrangements plan showing clearly the main particulars of the ship (length, breadth, depth), and its superstructures. Following, will verify that the information in the drawings correspond to the particulars of the ship.
  - 5.1.3 If general arrangement drawing/plan is not available, shall take physical measurements of ship's particulars as described in item 4.5 and 4.6 of this Instructive.
  - 5.1.4 Completes the form NT/SR (10/02), Part A for the ship's general information.
  - 5.1.5 Proceeds with the calculation of gross and net tonnages according to:
    - 5.1.5.1 Type of ship's hull
    - 5.1.5.2 If ship fitted or not with propelling machinery in the hull.
    - 5.1.5.3 Inclusion in gross tonnage of principal structure above main deck, if it is equal or larger than the tonnage or volume of the ship's hull.

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**IMPORTANT NOTE:** If the ship is measured and calculated the gross and net tonnage according to the ITC-69 Rules then items 5.1.3 to 5.1.5 above shall not be followed, instead a protocol of ITC tonnage calculation shall be provided and following the rules for ITC-69 in computation of gross and net tonnages.

5.1.6 Complies with what is established in items 5.7.1 and 5.7.2 of the Procedure for the Survey and Interim Certification P-SSC-03(I), concerning the notification via fax to the Operations Management of PMDS, of the inspections carried out and the mailing of copies of the documentation that supports the inspection and certification of the ship.

**5.2 GROSS AND NET TONNAGES CALCULATION**

- Surveyor      5.2.1      Determines the Gross (GT) and Net (NT) tonnages using the following formulae (all measures are given in meters and nearest centimeters).
- 5.2.1.1      Ship shaped hull
- $*GT = L \times B \times D \times 0.67/2.83$
  - $NT = 0.8GT$ , if propelling machinery in hull.
  - $NT = GT$ , if no propelling machinery in hull.
- 5.2.1.2      Barge shaped hull
- $*GT = L \times B \times D \times 0.84/2.83$
  - $NT = 0.8GT$ , if propelling machinery in hull
  - $NT =$ , if no propelling machinery in hull
- 5.2.1.3      Ship designed for sailing (as defined in item 4.5.7)
- 5.2.1.3.1      Sailing hull (excluding keel in D)
- $GT = L \times B \times D \times 0.50/2.83$
  - $NT = 0.9GT$ , if propelling machinery in hull
  - $NT = GT$ , if no propelling machinery in hull
- 5.2.1.3.2      Sailing hull (including keel in D)
- $GT = L \times B \times D \times 0.375/2.83$

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- NT = 0.9GT, if propelling machinery in hull
- NT = GT, if no propelling machinery in hull

5.2.1.4 Multi-hull ships

5.2.1.4.1 Pontoon hulls

- $GT = (L \times B_1 \times D \times 0.67) / 2.83$

5.2.1.4.2 Catamaran sailing hull

- $GT = (L \times B_1 \times D \times 0.5) / 2.83$

5.2.1.4.3 Trimaran sailing hull

- $[GT = (L_1 \times B_1 \times D + 2 (L_2 \times B_2 \times D_1))] / 2.83$

\* If principal structure above main deck is equal or larger than the volume of tonnage or volume of ship's hull, then it should be included or added to determine the gross tonnage  $GT = GT \text{ of ship's hull} + GT \text{ of principal structure above main deck}$ .

**5.3 PROCESS FOR TONNAGE SMS CERTIFICATION**

Surveyor	5.3.1	Adjusts the tonnage certification SMS to the Procedure for the Survey and Interim Certification P-SSC-03(I) and will include the specific instructions of this Instructive.
	5.3.2	Issues an interim Tonnage certificate NT/IC (10/02), NT/IC/B (10/02) whose validity in no case will exceed five (5) months counted from the date of the verification and calculation.
	5.3.3	Complies with what is established in items 5.7.1 and 5.7.2 of the Procedure for Survey and Interim Certification P-SSC-03 in regards the notification via fax to the Operations Management of PMDS about the interim certificate issued.
Technical Management	5.3.4	Verifies the calculations indicated in item 5.2 upon receipt of the drawings and/or calculations, to determine the gross and net tonnages of the ship.
Technical Management	5.3.5	Issues a Statutory Tonnage Certificate NT/FTC (10/02) or NT/FTC/B (10/02) with indefinite validity to all Tonnage verification and calculation that satisfies the general procedures and what is indicated in this instructive.

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5.3.6 Sends copy of the tonnage calculations and the original certificate and five copies to the Technical Department of the Administration for the endorsement of the Tonnage Certificate, NT/FTC (10/02).

**6.0 RECORD OF INFORMATION**

- 6.1 Request of survey
- 6.2 Quotation
- 6.3 Approval/ Acceptance of survey
- 6.4 Authorization for survey
- 6.5 SMS Tonnage report NT/SR (10/02)
- 6.6 Interim Certificate NT/IC (10/02); NT/IC/B (10/02)
- 6.7 Control of Documentation Sent and Received
- 6.8 Statutory Certificate NT/FTC (10/02); NT/FTC/B (10/02)

**7.0 CRITERIA FOR EVALUATION**

The form Control of Documents sent and received will be used to verify and evaluate that the processes and stages have been executed pursuant to the established requirements.

**7.1 ACCORDANT PROCESS**

When the survey and certification process has been fulfilled completely and is satisfactory, the form Control of Documentation Sent and Received, will be filed together with all the respective documentation in the vessel file.

**7.2 NON-ACCORDANT PROCESS**

When the survey and certification process does not fulfill some of the demanded requirements, the Control of Documentation Sent and Received, together with the documentation that has been received to the moment, will be maintained in the area of stand by with indication of the process in which is found according to what is indicated in item 5.3 of the Procedure for the verification and statutory Certification P-RS-01(I).

**8.0 RELATED DOCUMENTATION**

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- 8.1 P-SSC-03(I) Procedure for the Survey and Interim Certification
- 8.2 P-RS-01(I) Procedure for the Verification and Statutory Certification
- 8.3 P-RS-02(I) Procedure for Cases of Ships with Deficiencies
- 8.4 Documents of External Support (IMO, ILO, Administrations)

**9.0 REFERENCE**

- 9.1 P-SSC-03(I) Procedure for the Survey and Interim Certification
- 9.2 P-RS-01(I) Procedure for the Verification and Statutory Certification.
- 9.3 P-RS-02(I) Procedure for Cases of Ships with Deficiencies
- 9.4 Section, Process for Performing the service of PMDS/IMB Quality Manual.