INSTRUCTIVE FOR THE SURVEY AND ISSUANCE OF THE INTERNATIONAL TONNAGE CERTIFICATE

	POSITION	DATE	SIGNATURE
PREPARED BY			
REVISED BY			
APPROVED BY			

1.0 TITLE

INSTRUCTIVE FOR THE SURVEY AND ISSUANCE OF THE INTERNATIONAL TONNAGE CERTIFICATE

2.0 OBJECTIVE

To establish an appropriate mechanism to accomplish and control systematically the surveys and completion of the corresponding reports and certificates.

3.0 RESPONSIBILITY

3.1 It is responsibility of the staff of Technical Department to assure that all procedures contained in this INSTRUCTIVE are fulfilled for the surveys and issuance of the International Tonnage Certificate.

3.2 It is responsibility of the staff of Technical Department to support in the monitoring for the compliance of the mechanisms for the surveys and issuance of the International Tonnage Certificate.

3.3 It is responsibility of the surveyors to comply with the procedure contained in this instructive when carrying out the surveys for the International Tonnage Certificate.

4.0 DEFINITIONS

4.1 **NASHA:** National Shipping Adjusters, Inc. is a Maritime Organization authorized to carry out surveys and Certification on behalf of Maritime Administration of Flag State. In some cases also it is identify as a Recognized Organization (RO) or Recognized Security Organization (RSO).

4.2 **Classification Rules**: They are referred to those issued by a classification society with which NASHA has signed contractual agreement for sharing such rules in ship surveys and certification activities.

4.3 **IMO**, International Maritime Organization: It is a specialized agency of the United Nations devoted to maritime matters.

4.4 **ITC-69**, International Convention on Tonnage Measurement of Ships, 1969.

4.5 **Length (L)**, means 96 per cent of the total length on a waterline at 85 per cent of the least moulded depth measured from the top of the keel, or the length from the fore side of the stem to the axis of the rudder stock on that waterline, if that be greater. In ships designed with a rake of keel the waterline on which this length is measured shall be parallel to the designed waterline.

4.6 **Stand by**, to be waiting and ready to do something.

4.7 **Maritime Administration:** is the Authority responsible to regulate all aspects related to the marine requirements of the flag.

4.8 **National Regulations:** Are those established by each Maritime Administration to implement IMO Regulations or to adopt standards not envisaged in International Conventions.

4.9 APPLICABLE REGULATIONS

4.9.1 The surveys for the issuance of International Tonnage Certificate will be carried out for following ships on international voyages.

4.9.2 Ships registered in countries the Governments of which are Contracting Governments.

4.9.3 Ships registered in territories to which the present Convention is extended under Article 20.

4.9.4 Unregistered ships flying the flag of a State, the Government of which is a Contracting Government.

4.9.4.1 Existing ships which undergo alterations or modifications which the Administration deems to be a substantial variation in their existing gross tonnage; according to Article 2(7) of the Convention.

4.9.4.2 Existing ships if the owner so requests.

4.9.5 The determination of Gross Tonnage and Net Tonnage will be carried out according to Regulations 3 and 4 of the ITC-69 Convention, the calculation of volumes according to Regulation 6 and the measurements and calculation of volumes according to Regulation 7 of the ITC-69 Convention.

4.9.6 To the Surveys for the issuance of the International Tonnage Certificate that reflects compliance with the requirements of ITC-69, NASHA will produce an International Tonnage Certificate according to Article 7(1).

4.9.7 The validity of the statutory Full Term International Tonnage Certificate, for ships under Panama will be permanent.

4.10 TYPES OF SURVEYS

4.10.1 Calculation for the issuance of International Tonnage Certificate could be carried out in any of following cases:

4.10.1.1 Existing ship, the first time attended by NASHA for the issuance of International Tonnage Certificate

4.10.1.2 Existing ships which undergo modifications or alterations deemed a significant variation in their existing Gross Tonnage.

4.10.1.3 Existing ships if the owner so request due to change of name of the ship, flag, port of registry, call signs, or date in which the ship undergo significant alterations or modifications or by change of Recognized Organization

4.11 TYPE AND VALIDITY OF CERTIFICATES:

4.11.1 Interim Certificate, with maximum validity of five (5) months counted from the date of renewal survey, it is issued by the surveyor to ship whose survey for the issuance of International Tonnage Certificate to his criteria, complies with all the requirements.

4.11.2 Statutory International Tonnage Certificate (FULL-TERM), with a maximum validity according with items 4.9.7 of this instructive, is issued exclusively by the Head Office of NASHA, to ship whose survey demonstrates a satisfactory result.

4.12 SCOPE OF APPLICATION:

The content of this instructive will be applied to all ships of 24 meters (79 feet) length and above, on international, national or coastal voyages.

5.0 ACTIVITIES

5.1 GENERAL

Review documentation provided by NASHA Technical Staff as:

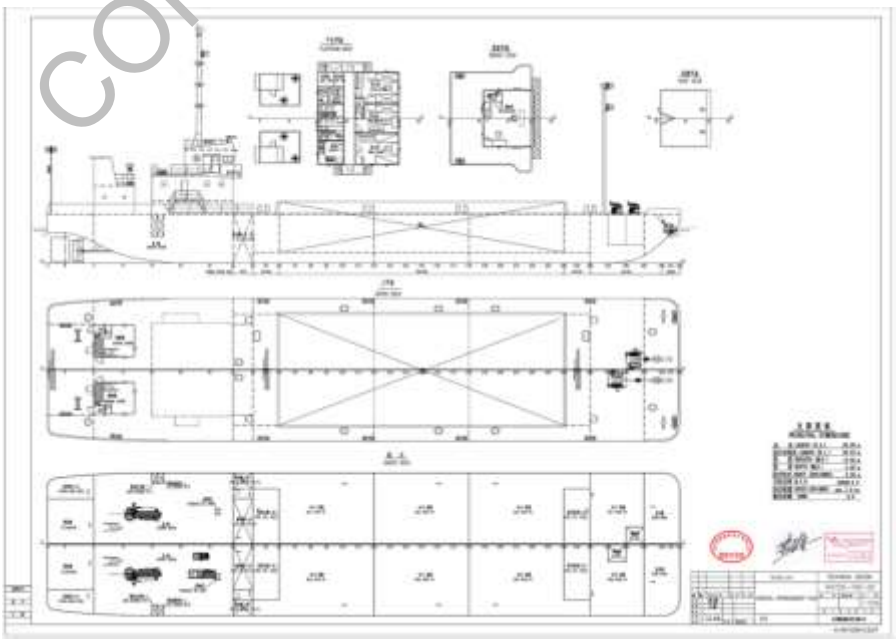
- Patent
- Pre-certification
- Inspector's Pate Checklist
- Respective naval documentation (plans, manuals and respective books)

Below is the information provided by NASHA's technical staff; where the information needed to perform the review in the correct manner is shown.
Check the consistency of all the information in all the respective documents corresponding to the type of certificate.

5.2 RULES APPLIED WHEN REVIEWING OR MAKING A NAVAL PLAN

- ISO 128-20:1996 (Technical drawings)
- COMDTINST M9000.6 (USCG Naval Engineering Manual, Chapter 085)
- ANSI/ASME Y14.2-2005 (Line Conventions and Lettering)
- ANSI/ASME Y14.5-2009 (Dimensions and Tolerancing)
- ANSI/ASME Y14.35M (Revision of Engineering Drawings and Associated Documents)
- MIL-STD-25 (Ship Structural Symbols for Use on Ship Drawings (See Note))
  Note: Ship drawings shall comply with MIL-STD-25 except that steel symbol designations may conform to the current American Institute of Steel Construction (AISC) “Manual of Steel Construction.”
- International Convention on Tonnage Measurement of Ships 1969

5.3 VERIFICATION OF THE PLAN

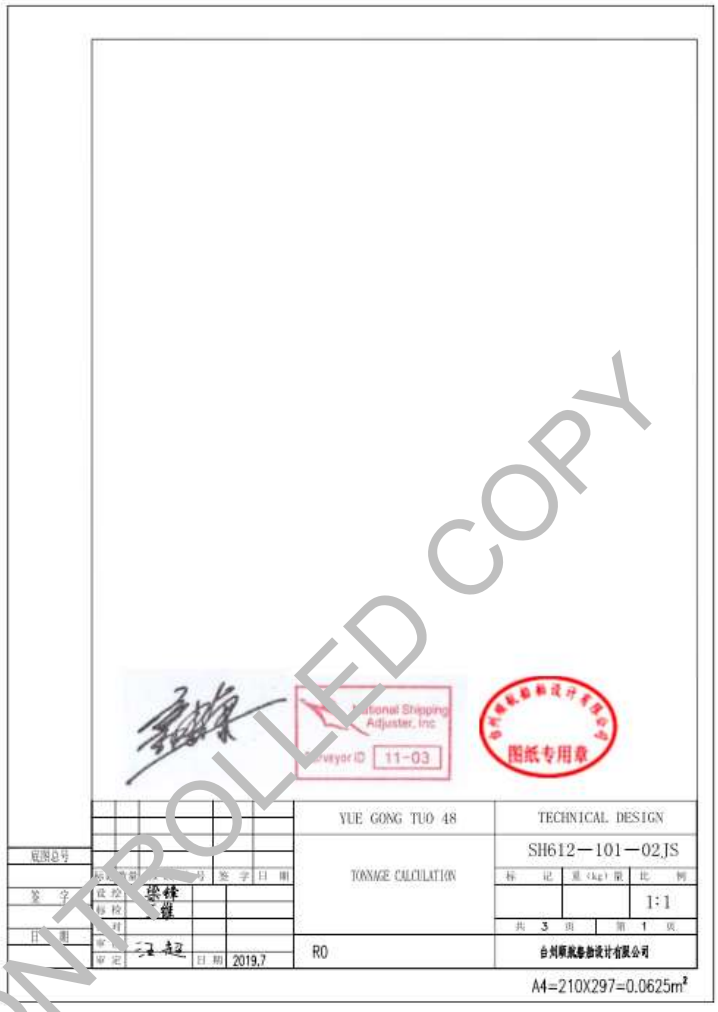


Points to check:

- Generalities (length, sleeve, prop, etc.)
- Consistency of the view (consistency of the upper view, with lasterals)
- Verify the length and location of the different accommodations which have to be congruent with those established in the certificate.
- Verify that the plan is made according to the generalities and principles of the naval drawing, which is applied to all the types of corresponding plans in the different certificates.

5.4 REVISION OF THE CALCULATIONS

When reviewing the calculations provided by the shipowner in accordance with the International Convention on Tonnage Measurement of Ships 1969, the shipowner must comply with the generalities, restrictions and applicability established by the Convention.



Example of the tonnage calculation provided by the shipowner to the corresponding company (NASHA), this must contain sufficient information to ensure that it was performed in the correct manner according to the guidelines established by the International Convention on Tonnage Measurement of Ships 1969.

TONNAGE CALCULATION	SH612-101-02JS	Page2

1 计算说明 Calculation description

本计算书系按《1969 年国际船舶吨位丈量公约》的有关规定的要求进行计算。船体主要部分容积计算参照邦金曲线计算书。

The calculation is to be in compliance with the requirements of International Convention on Tonnage Measurement of Ships 1969. The calculation of the volume of the hull is referred to Bonjean Curves Calculation.

2 船舶主要尺度 Principal dimensions

总 长 Length overall:	42.00 m
上甲板长度 Length of upper deck:	42.00 m
公约船长 Convention length:	40.328 m
型 宽 Molded breadth:	12.00 m
型 深 Molded depth:	3.50 m
设 计 吃 水Design draft:	2.00 m
结 构 吃 水Scantling draft:	2.25 m
梁 拱 Camber:	0.01 m
上甲板处水线面系数 CW in way of upper deck:	1.0085

3 总吨位计算 Gross tonnage calculation

3.1 全船所有围蔽处所型容积 V Total volume of all enclosed spaces of the ship

序号 S.N.	处所名称 Name	处所位置 Location	长度(m) Length	型容积(m^3) Volume(molded)	计算方法 Method
V_1	（上甲板以下所有围蔽处所的型容积） Volume of all enclosed spaces below the upper deck				
1	量吨甲板下 Below the tonnage deck	上甲板以下 Below the upper deck	42.00	1356.41	COMPASS 计算 Calculated by COMPASS
V_2	（上甲板以上所有围蔽处所的型容积） Volume of the all enclosed spaces above the upper deck				
1	驾驶甲板下围蔽处所 The space below the bridge deck	FR24～FR49	12.50	276.90	几何法 Geometry method
2	罗经甲板下围蔽处所 The space below the compass deck	$FR34^{+35}$～$FR45^{+465}$	5.93	71.58	几何法 Geometry method
3	其它 The others			18.77	
	$\sum=V_1+V_2$			1723.66	

The following guidelines should be checked in the document:

- General information on the ship (Article 3 /application and Article 4 /exceptions)
- Corresponding Modules (draft, registration length, length between perpendiculars, etc.)
- Draught (You must be in accordance with the draught shown on the tonnage certificate)/ annex 1 - rule 2 (Definitions of terms).
- Corresponding volumes according to what is established by the agreement when calculating the gross and net tonnage of the vessel (These volumes delivered by the shipowner can be checked and the calculation can be correct; but it must be verified according to the corresponding methods).
- Accommodations must be sectioned according to the corresponding certificate.

5.5 CALCULATIONS

The calculations must be verified according to Annex I / regal 3 and 4 of the Convention

Regulation 3. GROSS TONNAGE

The gross tonnage (GT) of a ship shall be determined by the following formula:

$$GT = K_1 V$$

where: V = Total volume of all enclosed spaces of the ship in cubic metres,
$K_1 = 0.2 + 0.02 \log_{10} V$ (or as tabulated in appendix 2).

Regulation 4. NET TONNAGE

(1) The net tonnage (NT) of a ship shall be determined by the following formula:

$$NT = K_2 V_c \left(\frac{4d}{3D}\right)^2 + K_3 \left(N_1 + \frac{N_2}{10}\right),$$

in which formula:

(*a*) The factor $\left(\frac{4d}{3D}\right)^2$ shall not be taken as greater than unity;

(*b*) The term $K_2 V_c \left(\frac{4d}{3D}\right)^2$ shall not be taken as less than 0.25 GT; and

(*c*) NT shall not be taken as less than 0.30 GT,

and in which:

V_c = total volume of cargo spaces in cubic metres,

$K_2 = 0.2 + 0.02 \log_{10} V_c$ (or as tabulated in appendix 2),

$K_3 = 1.25 \frac{GT + 10{,}000}{10{,}000}$,

D = moulded depth amidships in metres as defined in regulation 2(2),

d = moulded draught amidships in metres as defined in paragraph (2) of this regulation,

N_1 = number of passengers in cabins with not more than 8 berths,

N_2 = number of other passengers,

$N_1 + N_2$ = total number of passengers the ship is permitted to carry as indicated in the ship's passenger certificate; when $N_1 + N_2$ is less than 13, N_1 and N_2 shall be taken as zero,

GT = gross tonnage of the ship as determined in accordance with the provisions of regulation 3.

(2) The moulded draught (*d*) referred to in paragraph (1) of this regulation shall be the following draughts:

(*a*) For ships to which the International Convention on Load Lines[1] in force applies, the draught corresponding to the Summer Load Line (other than timber load lines) assigned in accordance with that Convention;

(*b*) For passenger ships, the draught corresponding to the deepest subdivision load line assigned in accordance with the International Convention for the Safety of Life at Sea[2] in force or other international agreement where applicable;

(*c*) For ships to which the International Convention on Load Lines does not apply but which have been assigned a load line in compliance with national requirements, the draught corresponding to the summer load line so assigned;

(*d*) For ships to which no load line has been assigned but the draught of which is restricted in compliance with national requirements, the maximum permitted draught;

(*e*) For other ships, 75 per cent of the moulded depth amidships as defined in regulation 2(2).

These calculations have to be in accordance with the generalities of the Convention, in which the different parameters established by the same must be verified, after verifying the restrictions, definitions and regulations corresponding to the rule 3 (annex I), the veracity of the corresponding values can be given.

Note: The corresponding calculations must be verified by more consistent methods than just relying on the information provided by the shipowner.Verificación del certificado de acuerdo al convenio

7. Verification of the certificate according to the agreement

The format of the certificate has to be in accordance with the stipulations of the convention (Annex II), and the information given must be verified according to all the information mentioned above.

ANNEX II

INTERNATIONAL TONNAGE CERTIFICATE (1969)

(Official seal)

Issued under the provisions of the International Convention on Tonnage Measurement of Ships, 1969, under the authority of the Government of .....
(full official designation of country)
for which the Convention came into force on .....19..
by .....
(full official designation of the competent person or organization recognized under the provisions of the International Convention on Tonnage Measurement of Ships, 1969.)

Name of Ship	Distinctive Number or Letters	Port of Registry	*Date

*Date on which the keel was laid or the ship was at a similar stage of construction (Article 2(6)), or date on which the ship underwent alterations or modifications of a major character (Article 3(2)(b)), as appropriate.

MAIN DIMENSIONS

Length (Article 2(8))	Breadth (Regulation 2(3))	Moulded Depth amidships to Upper Deck (Regulation 2(2))

THE TONNAGES OF THE SHIP ARE:

GROSS TONNAGE .....

NET TONNAGE .....

This is to certify that the tonnages of this ship have been determined in accordance with the provisions of the International Convention on Tonnage Measurement of Ships, 1969.

Issued at ....19..
(place of issue of certificate) (date of issue)

.....
(signature of official issuing the certificate)
and/or
(seal of issuing authority)

If signed, the following paragraph is to be added:
The undersigned declares that he is duly authorized by the said Government to issue this certificate.

.....
(Signature)

SPACES INCLUDED IN TONNAGE					
GROSS TONNAGE			NET TONNAGE		
Name of Space	Location	Length	Name of Space	Location	Length
Underdeck	-	-			
			NUMBER OF PASSENGERS (Regulation 4(1)) Number of passengers in cabins with not more than [illegible] berths ..... Number of other passengers		
EXCLUDED SPACES (Regulation 2(5)) An asterisk (*) should be added to those spaces listed above which comprise both enclosed and excluded spaces.			[illegible] DRAUGHT (Regulation 4(2))		
Date and place of original measurement					
Date and place of last previous remeasurement					
REMARKS:					

5.6 VERIFICATION

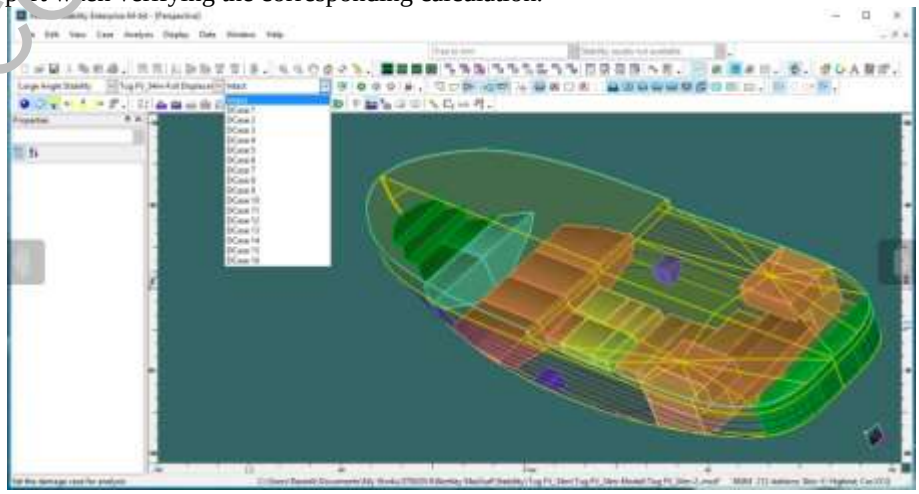
The following steps are stipulated when verifying the tonnage calculations of a vessel, in order to verify its accuracy.

- Step #1

  Export the PDF drawing (provided by the shipowner) corresponding to the AutoCad Program, which will allow us to take the measurements in a more precise and fast way.
  After exporting the plan, it must be scaled according to the generality of the ship.

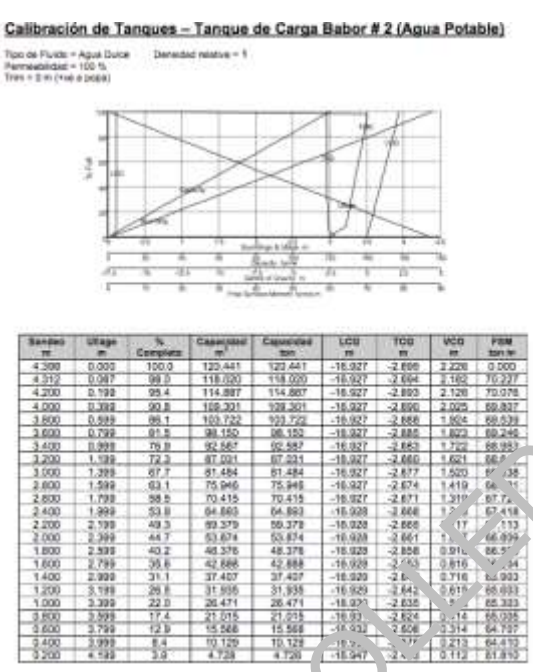
- Step #2

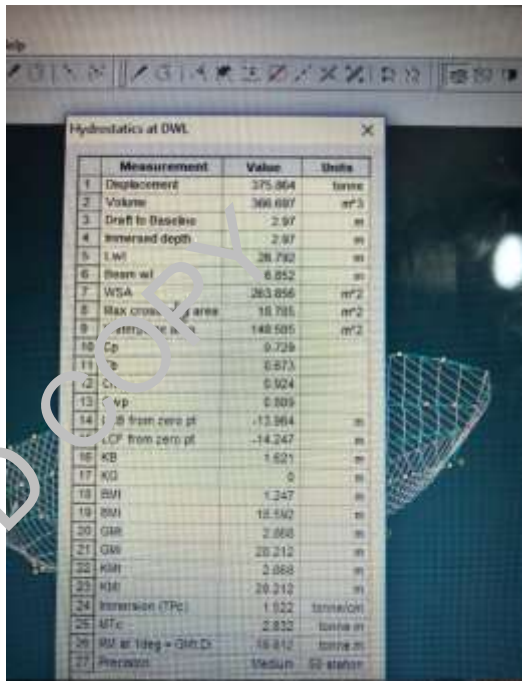
  After clarifying the measurements of the ship to its real dimensions, they must be exported to the MaxSurf naval program, which will allow us to verify the volumes of the lower part of the main deck, which represents the most complicated part when verifying the corresponding calculation.



- Step #3

  After modelling the ship in the Maxsurf program, the analysis of the reports delivered by the program is carried out in order to compare the data obtained.





The results obtained will allow us to know the corresponding volumes of all the parts of the ship in order to corroborate that the values given in the calculation of tonnage supplied by the ship owner are correct.

- Step # 4

  After obtaining the volume data (MaxSurf), proceed to perform the cycle stipulated in point 5 (Calculation) of this manual.

5.7 EXPLANATION

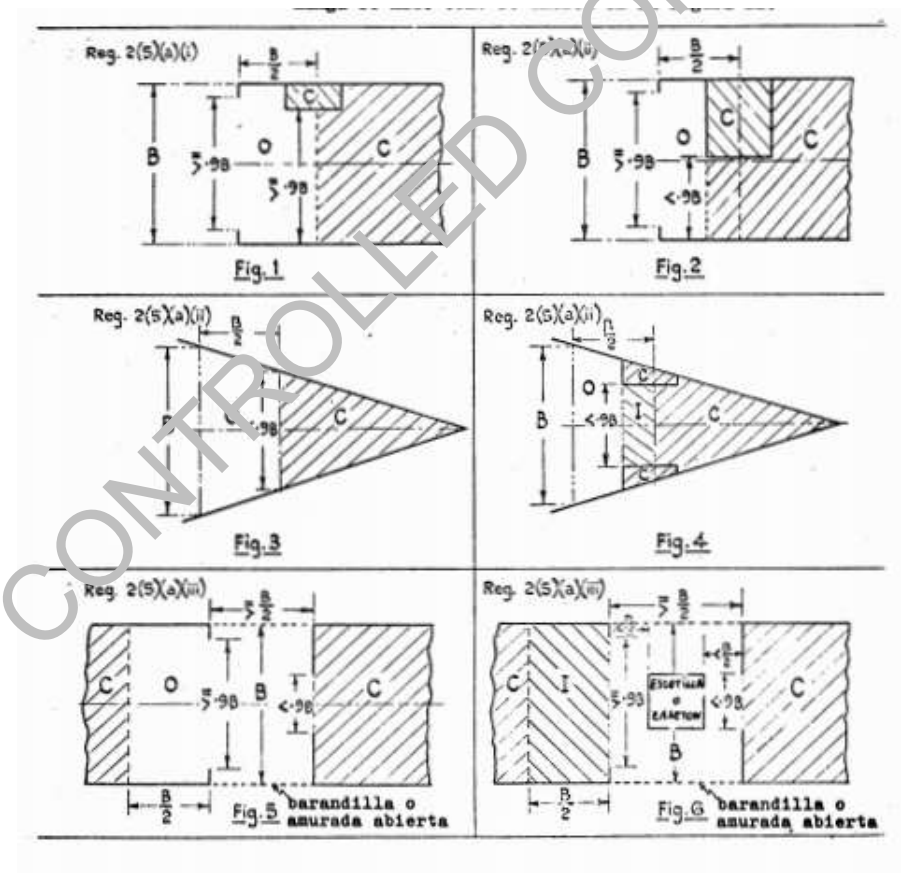
The principle of this point is to explain Annex I / regal 3 and 4 of the Convention which is used to verify the result obtained through the equations and restrictions shown in it.

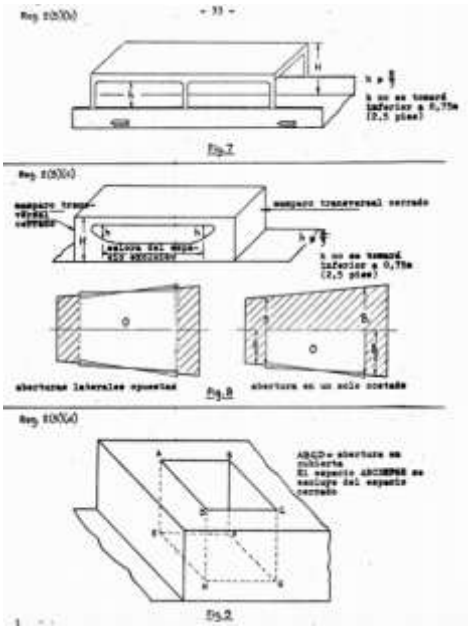
Rule 3

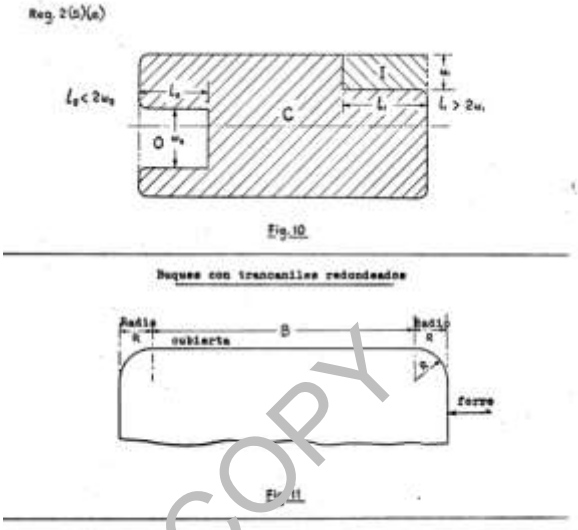
This gift tells us about the gross tonnage of the vessel, which we know is the volume of all accommodations such as; cargo holds, cabins, cabins, rooms, etc; except the excluded spaces (which are explained in Annex I, rule 1, point 5 .

Note: these excluded spaces have ways of being taken which are set out in Appendix 1 to the Convention.

Nomenclature: O = Excluded space
C = Closed Space
I = Space to be considered







Rule 4

This regala tells us about the gross tonnage of the vessel, which we know is the volume of all accommodations such as; cargo holds; excluded (which are explained in Annex I, rule 1, point 7 .
Note: It is important to emphasize that the cargo spaces have to be the ones stipulated for that activity, the volume of the capacity that includes: oil tanks, fuel (for the use of the boat), provisions, etc. is not included.

- N= refers to all persons who are considered passengers of the vessel with exceptions such as: children, crew members, or persons providing continuous or established service to the vessel.

- The factors or restrictions set out in Annex I / Regulation 4 point i (must be respected when checking the calculation)

- The factors or restrictions set out in Annex I/Rule 4 point ii (must be respected when checking the calculation)

- The factors or restrictions set out in Annex I / Regulation 4 point iii (must be respected when comparing the calculation), this point states that the net tonnage cannot be less than one third of the gross tonnage (0.3Gt=Nt), For example, if a ship has a gross tonnage of 1000 tons, when calculating the net tonnage of 200 tons, the certificate will include the minimum established by the agreement, which is 300 tons (0.3Gt=Nt); however, the net tonnage must be calculated.

5.8 PROCEDURE FOR CERTIFICATION OF INTERNATIONAL TONNAGE CERTIFICATE

Surveyor

5.8.1 Adjusts the certification for International Tonnage Certificate to the Procedure for the Survey and Interim Certification P-RS-01 and will include the specific instructions of this instructive.

5.8.2 Issues an interim certificate ITC-IC whose validity in no case will exceed five (5) months counted from the date of concluding the survey for the issuance of International Tonnage Certificate and satisfies the requirements of the ITC-69 Convention and its amendments,

otherwise will proceed with item 5.1.5 if there is not available tonnage calculation and shall not issue any interim certificate.

5.8.3 Make sure to complete the form ITC-SR to confirm type of survey if initial or change of name, flag or ship's particulars.

Technical Director

5.8.4 Coordinate with concerned Maritime Administration, the endorsement of a statutory International Tonnage Certificate ITC, whose validity will not expiry to all ITC-69 surveys that satisfies the general procedures and what is indicated in this instructive.

Surveyor

5.8.5 Complies with the established in the Procedure for the Survey and Interim Certification P-RS-01-01 concerning the notification via fax or email to Technical Department of the issued interim certificate.

5.9 PROCEDURE FOR TONNAGE CALCULATION

Surveyor

In case of calculate the tonnage is necessary the following documents:

5.9.1 Copy of General Arrangement Plan
5.9.2 Line plan
5.9.3 Capacity plan (if have)

This document will be evaluated and approved by a Naval Architect / Head office.

5.10 PROCEDURE FOR INCREASE DEADWEIGHT / DRAFT

Surveyor

5.10.1 In case of increase deadweight / draft is necessary approved the following documents:

5.10.1.1 Stability booklet
5.10.1.2 Freeboard calculation
5.10.1.3 ITC certificate
5.10.1.4 LL certificate
5.10.1.5 Tonnage calculation
5.10.1.6 Grain booklet

This document will be evaluated and approved by a Naval Architect / Head office.

5.11 PROCEDURE FOR CHANGE OF TONNAGE

Surveyor

5.11.1 In case of change the tonnage is necessary approved the following documents:

5.11.1.1 General arrangement plan
5.11.1.2 Capacity plan
5.11.1.3 Freeboard calculation
5.11.1.4 Tonnage calculation

This document will be evaluated and approved by a Naval Architect / Head office.

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 Copy of ITC-69 Tonnage Calculations, ship's plans and drawing, previous ITC-69 certificate.
6.6 Interim Certificate ITC-IC
6.7 Check List for processing endorsement by Maritime Administration ITC-SR
6.8 Control of Documentation
6.9 Statutory International Tonnage Certificate, ITC/PA.

7.0 CRITERIA FOR EVALUATION

The Control of Documentation form will be used to verify and evaluate the procedures and stages that have been executed pursuant to the established requirements.

7.1 ACCORDANT PROCEDURE

When the survey and Certification procedure has been fulfilled completely, the Control of Documentation form will be filled together with all the respective documentation in the vessel file.

7.2 NOT ACCORDANT PROCEDURE

When the survey and Certification procedure does not fulfil some of the demanded requirements, the documentation that has been received and the Control of Documentation form, will be maintained on standby until requirements are fulfill, according to the Review Procedure, Full Term Certificate and Endorsement P-RS-02.

8.0 RELATED DOCUMENTATION

8.1 P-RS-01 Procedure for the Survey and Interim Certification
8.2 P-RS-02 Review Procedure, Full Term Certificate and Endorsement
8.3 Documents of External Support (IMO, ILO, Administrations)

9.0 REFERENCE

9.1 P-RS-01 Procedure for the Survey and Interim Certification
9.2 P-RS-02 Review Procedure, Full Term Certificate and Endorsement