INSTRUCTIVE FOR THE SURVEY AND ISSUANCE OF THE INTERNATIONAL LOAD LINES CERTIFICATE.

	POSITION	DATE	SIGNATURE
PREPARED BY			
REVISED BY			
APPROVED BY			

1.0 TITLE

INSTRUCTIVE FOR THE SURVEY AND ISSUANCE OF THE INTERNATIONAL LOAD LINES 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 International Load Lines 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 Load Lines 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 Load Lines 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 **Stand by**, to be waiting and ready to do something.

4.3 **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.

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

4.5 **ILL-66/88 International Convention on Load Lines**, 1966 as modified by the 1988 Protocol and its amendments.

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

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

4.8 APPLICABLE REGULATIONS

4.8.1 The surveys of Load Lines will be carried out to ships according to the Article 4 of the ILL-66/88 Convention and its amendments, except for those ships indicated in Article 5.

4.8.2 The surveys of Load Lines will be carried out to determine that the ship complies with the applicable Requirements of ILL-66/88 Convention and its amendments.

4.8.3 Initial Surveys for the Load Lines will be carried out according to Article 14(1)(a).

4.8.4 Renewal Surveys for the Load Lines will be carried out according to Article 14(1)(b)

4.8.5 Annual Surveys for the Load Lines will be carried out according to Article 14(1)(c).

4.8.6 To the Surveys of Load Lines (initial or renewal) that reflects compliance with the requirements of ILL-66/88 and its amendments, NASHA will issue an International Load Lines Certificate according to the Article 16.

4.8.7 The validity of the statutory International Load Lines Certificate is in accordance to the Article 19.

4.8.7.1 The validity of the Statutory International Load Lines Certificate will be five (5) years.

4.9 TYPES OF SURVEYS

4.9.1 Initial survey, first survey carried out by NASHA for the issuance of International Load Lines Certificate.

4.9.2 Surveys for renewal, should be carried out without exception at the expiration of the statutory International Load Lines Certificate.

4.9.3 Annual surveys, are carried out within the period of validity of the statutory International Load Lines Certificate to verify that: alterations have not been made to the hull or superstructures which would affect the calculations determining the position of the load lines; also to verify that the fittings and appliances for the protection of openings, guard rails, freeing ports and means of access to crew's quarters are maintained in an effective condition; as well as the freeboard marks are correctly and permanently indicated. Such inspection must be carried out in the period between three months before or three months after the anniversary date of the statutory International Load Lines Certificate, the one which must be endorsed by the surveyor after having completed satisfactorily the survey.

4.10 TYPE AND VALIDITY OF CERTIFICATES:

4.10.1 Interim Certificate, with maximum validity of five (5) months counted from the date of initial or renewal survey, it is issued by the surveyor to ship whose survey of Load Lines to his criteria, complies with all the requirements.

4.10.2 Conditional Certificate: (Short Term), is issued by the surveyor for no more than two (2) months upon proving in the survey carried out for the Load Lines, that the ship does not complies with some arrangements or requirements of the ILL-66/88 convention and its amendments, and not affecting the safety of its crew and the ship itself, and will proceeds according to the Procedure for Cases of Ships with Deficiencies P-RS-03.

4.10.3 Statutory International Load Lines Certificate (FULL-TERM), with a maximum validity according with items 4.8.7.1 of this instructive, is issued exclusively by the Head Office of NASHA, to ship whose inspection and survey demonstrates a satisfactory result.

4.11 **SCOPE OF APPLICATION:**
The content of this instructive will be applied to all ships of 24 meter length and above and ship with 150 gross tonnage and above on international, national or coastal voyages.

5.0 ACTIVITIES

5.1 PROCEDURE OF SURVEY FOR INTERNATIONAL LOAD LINES CERTIFICATE

5.1.1 GENERAL

Review documentation provided by NASHA Technical Staff as:

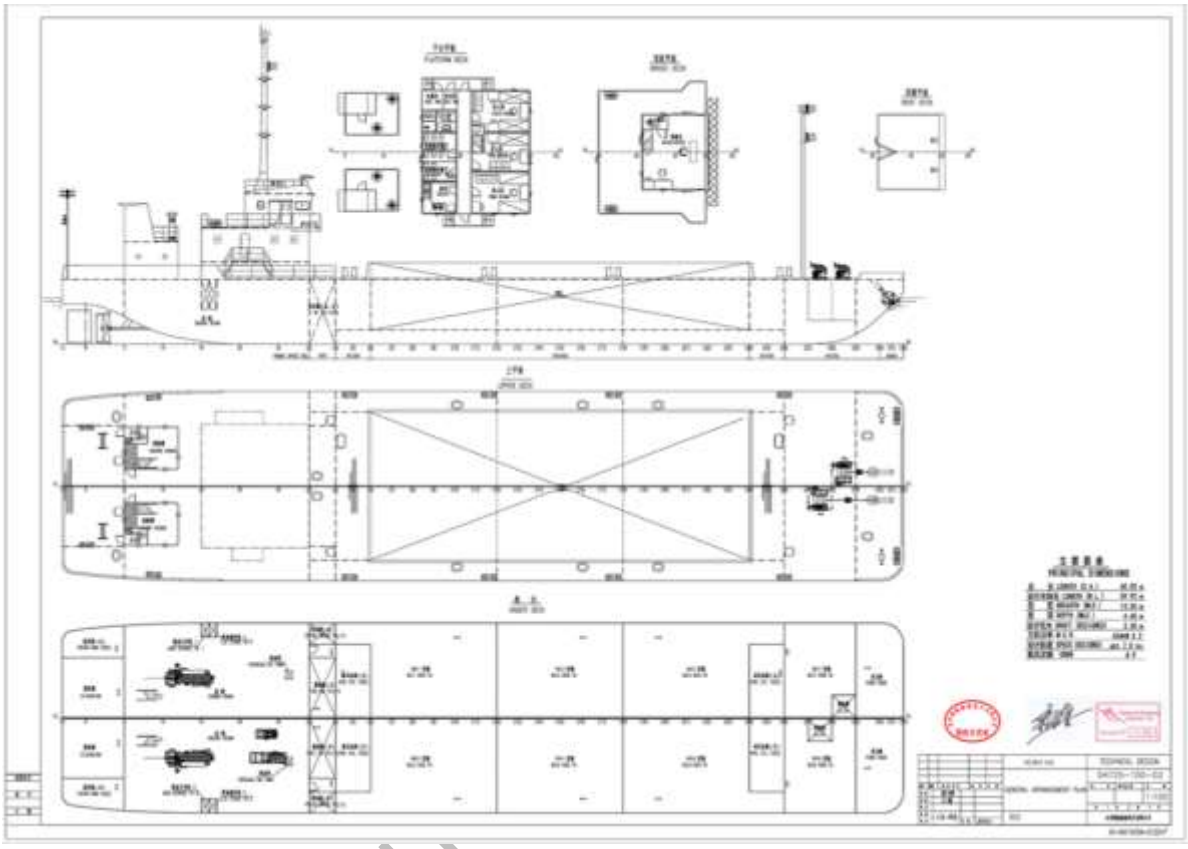
- Patent
- Pre-certification
- Inspector's Pate Checklist
- Respective naval documentation (plans, manuals and respective books)

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.

5.1.2 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
- International Convention on Load Line 1966

5.1.3 VERIFICATION OF THE PLAN



Points to check (Drawing):

- Verify the generalities of the ship which can be obtained from the checklist filled out by the inspector with the respective competence (length, beam, prop, etc.)
- Consistency of the views (consistency of the view from above, with lashings)
- Verify the length and location of the different accommodations which have to be congruent with those established in the certificate.
- Scale of the plan.
- Type of load, accommodations, superstructure, bulkheads, forecastle, engine room.
- Format of the plan which has to be in accordance with the norms mentioned in point 2 (Applied norms when revising or making a naval plan)
- Last revision of the corresponding plan.
- Verify if there are no structural modifications, which are not reflected in it, which will be taken from the checklist provided by the inspector with the relevant competence.

Points to check (Loading Line):

- Check the generalities of the ship: length, beam, draught, depth, prop, displacement, length of registration, length between perpendiculars.
- Check the type of floor of the ship (if it has wood,)
- Check the length and height of the superstructure, forecastle.

5.1.4 REVISION OF THE CALCULATIONS

When reviewing the calculations provided by the shipowner in accordance with the 1966 International Convention on Load Lines, the shipowner must comply with the generalities, restrictions and applicability established by the Convention.

FREEBOARD AND LOAD LINE MARKS

VESSEL´S NAME: M/V TRADER EXPRESS III

VESSEL´S TYPE: B

Information to be provided (LOAD LINE 66/88)

Breadth:	12,19	[Mts.]	Taked to plan.
Depth:	4,57	[Mts.]	Taked to plan.
Depth with deck plate	4,5827	[Mts.]	Taked to plan.
Project Moulded Depth	3,8845	[Mts.]	This depth is taken as minimun project depth.
Δ:	1875	[M3.]	Salt Water Displacement (at 85% of project moulded depth).
Lpp:	56,09	[Mts.]	
Lenght:	57,15	[Mts.]	Rule 3.1
E1:	15,68	[Mts.]	Effective Length on superstructures.(vessels with L< 100 Mts). Rule 29
Deck stringer thickness	12,7	[mm.]	Taked to plan.
Coeficiente de Block (Cb)	0,693		
L/15	3,81	[Mts.]	Tipo: 1

MOULDED DEPTH TO UPPER DECK

FB:	536	According with table 28.2 / Rule 28.

Superstructures

Superstructure	Length [Mts.]	Heigths(h) Rule 33/Table 33.1 [Mts.]	Enclosed Length (S) Rule 34-1	Effective Length (E)
Fore Castle				
Deck House	15,68	1,8	15,68	15,68
Poop	0	0	0	0
		TOTAL Σ	15,68	15,68

CORRECTIONS

Correction for Vessels with L < 100 Mts.		
Rule 29		
7.5 (100 - L) (0.35 - E1/L);		
Length:	24,31	[mm.]
Tipo	1	

Correction by Block Coefficient	
Rule 30	
Cb:	1,01
Tipo	1

Correction for Depth		
Rule 31		
Correction:	92,772	[mm.]
Tipo R	1	
	0	

Correction for Superstructure			
Reduction due complete superstructure 1L	375	[mm.]	(Rule 37)
% Covered ΣS/L	0,274	[%]	
% Covered ΣE/L	0,274	[%]	
% Reduction	9,8	[%]	(Table 37.1)
Deduction	36,75	[mm.]	

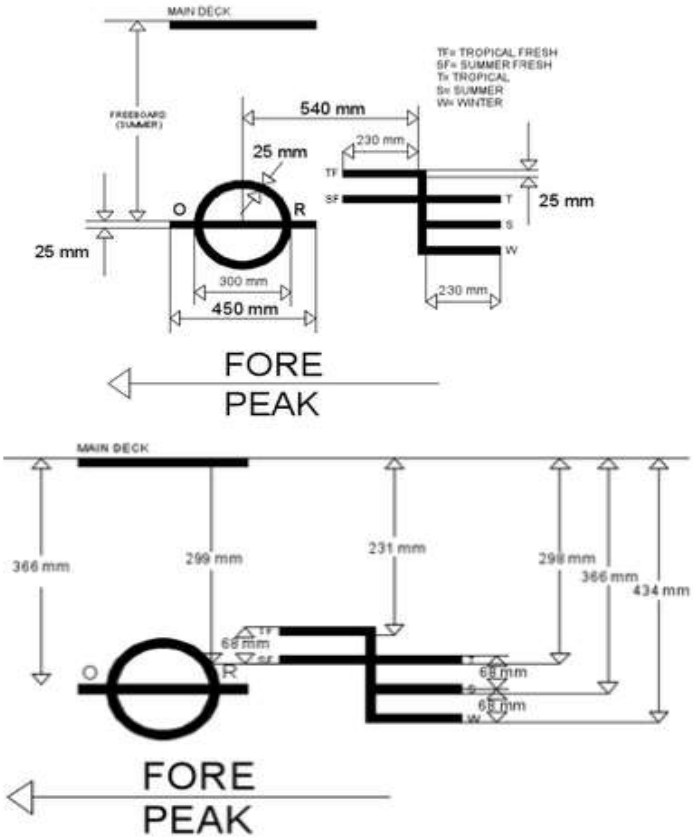
SHEER CORRECTION

SECTION	Standart Ordinate [mm]	Factor	Product	Existing Ordinate [mm]	Factor	Product
Fore Perpendicular	420	1	420	475	1	475
1/6 From F.P	137	3	411	211	3	633
1/3 From F.P	45	3	135	53	3	159
Amidship	0	1	0	0	1	0
Sub Total		**Σ_1**	**966**		**Σ_2**	**1267**
Amidship	0	1	0	0	1	0
1/6 From A.P	9	3	27	106	3	318
1/3 From A.P	85	3	255	422	3	1266
After Perpendicular	207	1	207	950	1	950
Sub Total		**Σ_3**	489		**Σ_4**	2534
Grand Total		**$\Sigma_5 = \Sigma_1+\Sigma_3$**	**1455**		**$\Sigma_6 = \Sigma_2+\Sigma_4$**	**3801**

[0.75-(Σs/2L)]	0,613
S=(y/3) / (L´ / L)	9,51
[((Σs - Σs)/16)-S] · [0.75-(Σs/2L]	
Correction Value	84,0

RESULTS VALUES IN MM.		
From Freeboard Table 28.2	536	[mm.]
Correction For Length	24,31	[mm.]
Sub Total	560,31	[mm.]
Freeboard included Block Coefficient Correction	565,6	[mm.]
Correction For Depth	92,8	[mm.]
Deduction For Superstructure	-36,75	[mm.]
Correction For Sheer	84,0	[mm.]
Sub Total	705,7	[mm.]
Correction for Scantling	3877,0	[mm.]
FREEBOARD VALUES		
Tropical Fresh	558	[mm.]
Summer Fresh	632	[mm.]
Tropical	625	[mm.]
Summer	706	[mm.]
Winter	786	[mm.]
Winter North Atlantic		[mm.]

DEDUCTION FOR FRESH WATER		
Displacement at Summer Freeboard	1988,6	[ton]
Tons per cm Immersion at Summer Lwl T1	6,74	[ton]/cm
Deduction Value	74	[mm.]
Draft: T at Summer Draft	3877	[mm.]
Differences of Tropical and Winter freeboard	81	[mm.]



The Plimsoll disc must be verified and recorded by the technical personnel who carried out the corresponding calculation. A very important point is that it must be considered with the data shown in the calculation and the proportions must be in accordance with regulation 5 of this agreement.

Example of the load line calculation provided by the shipowner to the corresponding company (NASHA), this must contain sufficient information to guarantee that it was performed in the correct manner according to the guidelines established by the International Convention on Load Line 1966.

The following guidelines should be checked in the document:

- Boat General (Rule 2 / Application and Rule 3 / Definitions)
- Corresponding Modules (draft, registration length, length between perpendiculars, etc.)
- The calculation provided by the shipowner shall be verified according to chapter III of the 1966 International Convention on Load Lines, which shall be comprised from rule 27 to rule 40.

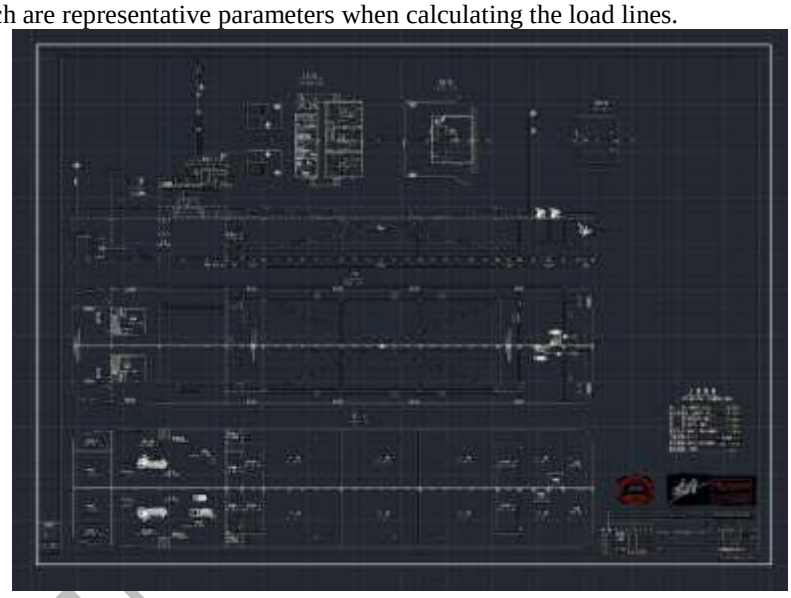
5.1.5 VERIFICATION

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

- Step #1

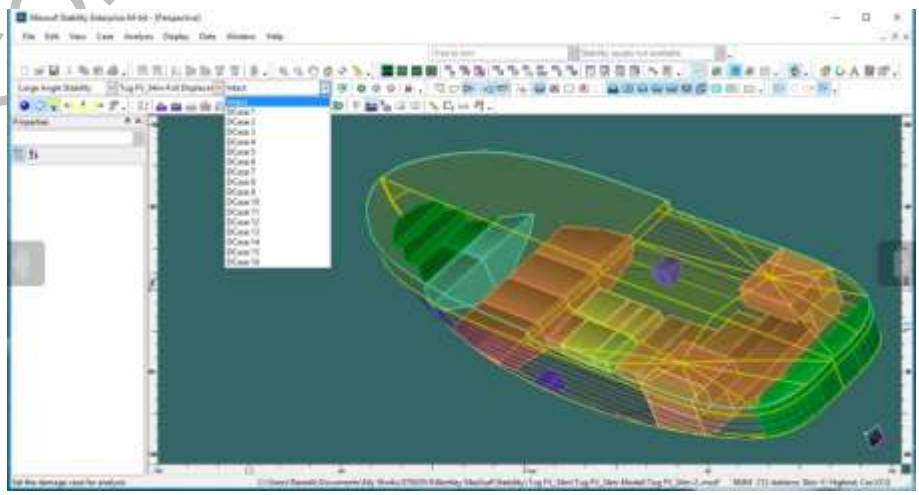
Export the PDF drawing (provided by the shipowner) corresponding to the AutoCad Program, which will allow us to take the measurements in a more precise and fast way.
After exporting the plan, it must be scaled according to the generality of the ship.

This will allow us to verify the registration length, length between perpendiculars, beam, distance and height of the superstructure, which are representative parameters when calculating the load lines.



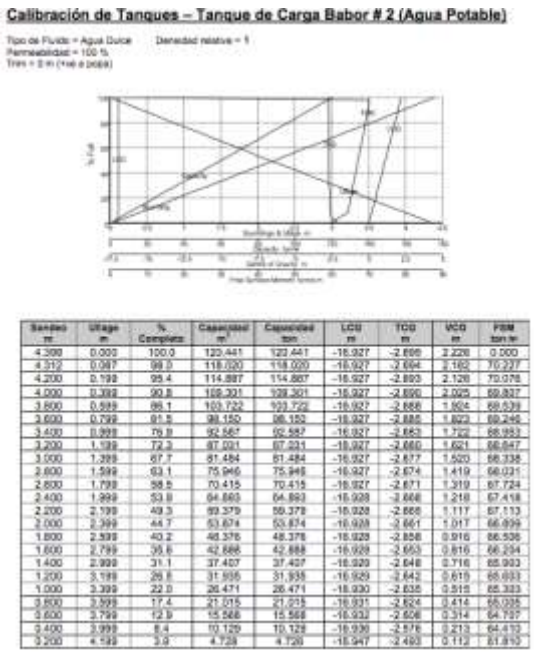
- Step #2

After clarifying the ship's measurements to its real dimensions, they must be exported to the MaxSurf naval program.



- Step #3

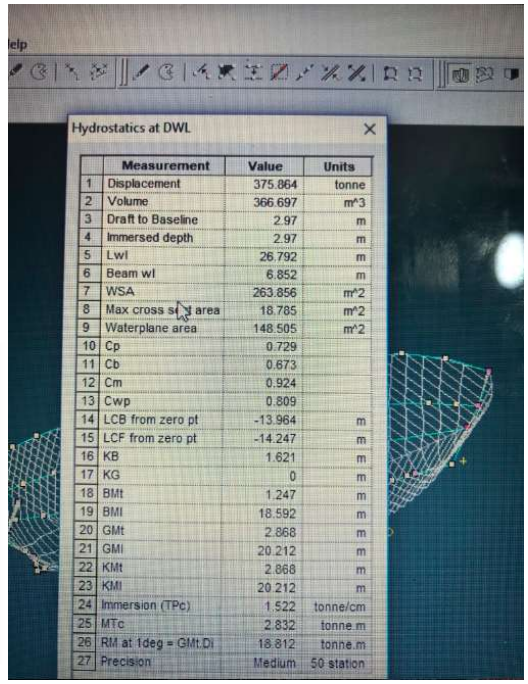
After modelling the ship in the Maxsurf program, the analysis of the reports delivered by the program is carried out in order to compare the data obtained.



Calibración de Tanques – Tanque de Carga Babor # 2 (Agua Potable)

Tipo de Fluido = Agua Dulce Densidad relativa = 1
Permeabilidad = 100 %
Trim = 0 m (+ve a popa)

Sondeo m	Ullage m	% Completo	Capacidad m^3	Capacidad ton	LCG m	TCG m	VCG m	FSM ton m
4.388	0.000	100.0	120.441	123.441	-16.927	-2.696	2.226	0.000
4.312	0.047	98.5	118.020	118.020	-16.927	-2.694	2.182	70.227
4.200	0.198	95.4	114.887	114.887	-16.927	-2.693	2.128	70.078
4.000	0.388	90.8	109.301	109.301	-16.927	-2.690	2.025	69.837
3.800	0.589	86.1	103.722	103.722	-16.927	-2.688	1.924	69.539
3.600	0.799	81.5	98.152	98.152	-16.927	-2.685	1.823	69.246
3.400	0.999	76.9	92.587	92.587	-16.927	-2.683	1.722	68.993
3.200	1.199	72.3	87.031	87.031	-16.927	-2.680	1.621	68.647
3.000	1.399	67.7	81.484	81.484	-16.927	-2.677	1.520	68.338
2.800	1.599	63.1	75.946	75.946	-16.927	-2.674	1.419	68.031
2.600	1.799	58.5	70.415	70.415	-16.927	-2.671	1.319	67.724
2.400	1.999	53.9	64.893	64.893	-16.928	-2.668	1.218	67.418
2.200	2.199	49.3	59.379	59.379	-16.928	-2.666	1.117	67.113
2.000	2.399	44.7	53.874	53.874	-16.928	-2.661	1.017	66.809
1.800	2.599	40.2	48.376	48.376	-16.929	-2.658	0.916	66.506
1.600	2.799	35.6	42.888	42.888	-16.929	-2.653	0.816	66.204
1.400	2.999	31.1	37.407	37.407	-16.929	-2.648	0.716	65.903
1.200	3.199	26.5	31.935	31.935	-16.929	-2.642	0.615	65.603
1.000	3.399	22.0	26.471	26.471	-16.930	-2.635	0.515	65.303
0.800	3.599	17.4	21.015	21.015	-16.931	-2.624	0.414	65.005
0.600	3.799	12.9	15.568	15.568	-16.932	-2.608	0.314	64.707
0.400	3.999	8.4	10.129	10.129	-16.936	-2.576	0.213	64.410
0.200	4.199	3.9	4.728	4.728	-16.947	-2.493	0.112	61.810



Hydrostatics at DWL

	Measurement	Value	Units
1	Displacement	375.864	tonne
2	Volume	366.697	m^3
3	Draft to Baseline	2.97	m
4	Immersed depth	2.97	m
5	Lwl	26.792	m
6	Beam wl	6.852	m
7	WSA	263.856	m^2
8	Max cross sh area	18.785	m^2
9	Waterplane area	148.505	m^2
10	Cp	0.729	
11	Cb	0.673	
12	Cm	0.924	
13	Cwp	0.809	
14	LCB from zero pt	-13.964	m
15	LCF from zero pt	-14.247	m
16	KB	1.621	m
17	KG	0	m
18	BMt	1.247	m
19	BML	18.592	m
20	GMt	2.868	m
21	GML	20.212	m
22	KMt	2.868	m
23	KML	20.212	m
24	Immersion (TPc)	1.522	tonne/cm
25	MTc	2.832	tonne.m
26	RM at 1deg = GMt.Di	18.812	tonne.m
27	Precision	Medium	50 station

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.

5.1.6 EXPLANATION

The explanation presented in the manual of each rule is based on the author's interpretation in a summarized way, which will help the technician when interpreting the corresponding rule of the load line agreement.
Note: It is recommended that the 1966 International Load Line Agreement be checked at all times.

<u>Rule 27</u>

We are presented with the type of boat "A" and "B"

- A type "A" ship is one designed to carry only liquid cargo in bulk, and in which the cargo tanks have only small access openings closed by lids of steel or other equivalent material.

- Type B vessels are all vessels which do not meet the conditions indicated for type "A" vessels

In the case that the vessel is type B, the increase in the free on board must be verified, which must be in accordance with the information provided; this increase is tabulated according to the length of the vessel.

Length of ship (metres)	Freeboard increase (millimetres)	Length of ship (metres)	Freeboard increase (millimetres)	Length of ship (metres)	Freeboard increase (millimetres)
108 and below	50	139	175	170	290
109	52	140	181	171	292
110	55	141	186	172	294
111	57	142	191	173	297
112	59	143	196	174	299
113	62	144	201	175	301
114	64	145	206	176	304
115	68	146	210	177	306
116	70	147	215	178	308
117	73	148	219	179	311
118	76	149	224	180	313
119	80	150	228	181	315
120	84	151	232	182	318
121	87	152	236	183	320
122	91	153	240	184	322
123	95	154	244	185	325
124	99	155	247	186	327
125	103	156	251	187	329
126	108	157	254	188	332
127	112	158	258	189	334
128	116	159	261	190	336
129	121	160	264	191	339
130	126	161	267	192	341
131	131	162	270	193	343
132	136	163	272	194	346
133	142	164	275	195	348
134	147	165	278	196	350
135	153	166	280	197	353
136	159	167	283	198	355
137	164	168	285	199	357
138	170	169	287	200	358

<u>Rule 28</u>

The tabular freeboard is shown, which must have all the ship's dimensions depending on the type "A" and "B", which will depend on the length of the ship.

Note: This freeboard is defined as an ideal reference for the ship, which has no correction of any kind.

Freeboard Table for Type 'A' Ships

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
24	200	60	573	96	1074
25	208	61	587	97	1089
26	217	62	600	98	1105
27	225	63	613	99	1120
28	233	64	626	100	1135
29	242	65	639	101	1151
30	250	66	653	102	1166
31	258	67	666	103	1181
32	267	68	680	104	1196
33	275	69	693	105	1212
34	283	70	706	106	1228
35	292	71	720	107	1244
36	300	72	733	108	1260
37	308	73	746	109	1276
38	316	74	760	110	1293
39	325	75	773	111	1309
40	334	76	786	112	1326
41	344	77	800	113	1342
42	354	78	814	114	1359
43	364	79	828	115	1376
44	374	80	841	116	1392
45	385	81	855	117	1409
46	396	82	869	118	1426
47	408	83	883	119	1442
48	420	84	897	120	1459
49	432	85	911	121	1476
50	443	86	926	122	1494
51	455	87	940	123	1511
52	467	88	955	124	1528
53	478	89	969	125	1546
54	490	90	984	126	1563
55	503	91	999	127	1580
56	516	92	1014	128	1598
57	530	93	1029	129	1615
58	544	94	1044	130	1632
59	559	95	1059	131	1650

Table B

Freeboard Table for Type 'B' Ships

Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)	Length of ship (metres)	Freeboard (millimetres)
24	200	48	420	72	754
25	208	49	432	73	769
26	217	50	443	74	784
27	225	51	455	75	800
28	233	52	467	76	816
29	242	53	478	77	833
30	250	54	490	78	850
31	258	55	503	79	868
32	267	56	516	80	887
33	275	57	530	81	905
34	283	58	544	82	923
35	292	59	559	83	942
36	300	60	573	84	960
37	308	61	587	85	978
38	316	62	601	86	996
39	325	63	615	87	1015
40	334	64	629	88	1034
41	344	65	644	89	1054
42	354	66	659	90	1075
43	364	67	674	91	1096
44	374	68	689	92	1116
45	385	69	705	93	1135
46	396	70	721	94	1154
47	408	71	738	95	1172

<u>Rule 29</u>

Freeboard correction for busses less than 100 m in length
Note: This freeboard correction will be made to type "B" boats, with a length of less than 100 m.
Equation : 7,5 (100 – L) (0,35 – E/L) millimetres

- A very important parameter is the E coefficient (effective length of the superstructure, which is explained in rule 35 of the manual and the convention)

Rule 31

In this rule we are shown the correction of the block coefficient, which will have as reference 0.68 (as we know the block coefficient is an adimencianl value that refers to the shape of the boat, the closer to 1 is the coefficient its shape will be similar to a cube)
Note: For the verification of the block coefficient we will use the help of the Naval MaxSurf program which allows us to obtain this data in a precise way.

Equation: $(C_b + 0{,}68)/1{,}36$

- This factor will be multiplied if the block coefficient is greater than 0.68 (block coefficient).

Rule 31
This point refers to the correction per prop which must be multiplied, as long as the prop exceeds this ratio L/15, (L= length of the boat).

Rule 32
When the actual prop of the vessel is greater or less than the height of the deck line, it shall be added to or subtracted from the ship's harness respectively.
Note: As we know the prop is defined as the distance measured from the keel to the deck, in the case that the deck is not completely straight (curved downwards or upwards) this difference must be added to or subtracted from the prop established by definition.

Rule 33
This point refers to the normal height of the superstructure, which will be a function of the length of the boat.

Standard Height (in metres)

L (metres)	Raised Quarter Deck	All other Superstructures
30 or less	0,90	1,80
75	1,20	1,80
125 or more	1,80	2,30

Rule 34
This point refers to how the longevity of the superstructure should be taken.
Note: this length must be taken by separating the super structure and the forecastle (in such a case that the ship has one).

Rule 35
This point refers to the effective length of the superstructure, which is restricted by the type of superstructure the ship has

- Super structure of normal height removed from the sides of the ship.
- Super structure which has a width that is equal to the beam in the given reference point.

Rule 37
Correction of the fringe on board by the effect of the corrspondent super structure.
Note: this point is dictated by the respective vessel type, but a very important point is that these calculations must be made with the effective length of the superstructure.

Percentage of Deduction for Type "A" ships

	Total Effective Length of Superstructures and Trunks										
	0	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	1.0 L
Percentage of deduction for all types of superstructures	0	7	14	21	31	41	52	63	75,3	87,7	100

Percentage of Deduction for Type "B" ships

	Line	Total Effective Length of Superstructures and Trunks										
		0	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	1.0 L
Ships with forecastle and without detached bridge	I	0	5	10	15	23,5	32	46	63	75,3	87,7	100
Ships with forecastle and detached bridge	II	0	6,3	12,7	19	27,5	36	46	63	75,3	87,7	100

Rule 38

This point refers to the correction by the boat's wreck. A very relevant point is that it must be placed in a tabular way (table shown in this rule) and in a real way which must be presented by a mathematical model, for which MaxSurf (structural module) will be used.

Next, the tables are shown (Theoretical map)

	Station	Ordinate (in mm)	Factor
Forward half	Amidships	0	1
	1/3 L from F.P	5,6 (L/3 + 10)	3
	1/6 L from F.P	22,2 (L/3 + 10)	3
	Forward Perpendicular	50 (L/3 + 10)	1

	Station	Ordinate (in mm)	Factor
After half	After Perpendicular	25 (L/3 + 10)	1
	1/6 L from A.P.	11,1 (L/3 + 10)	3
	1/3 L from A.P.	2,8 (L/3 + 10)	3
	Amidships	0	1

Rule 39

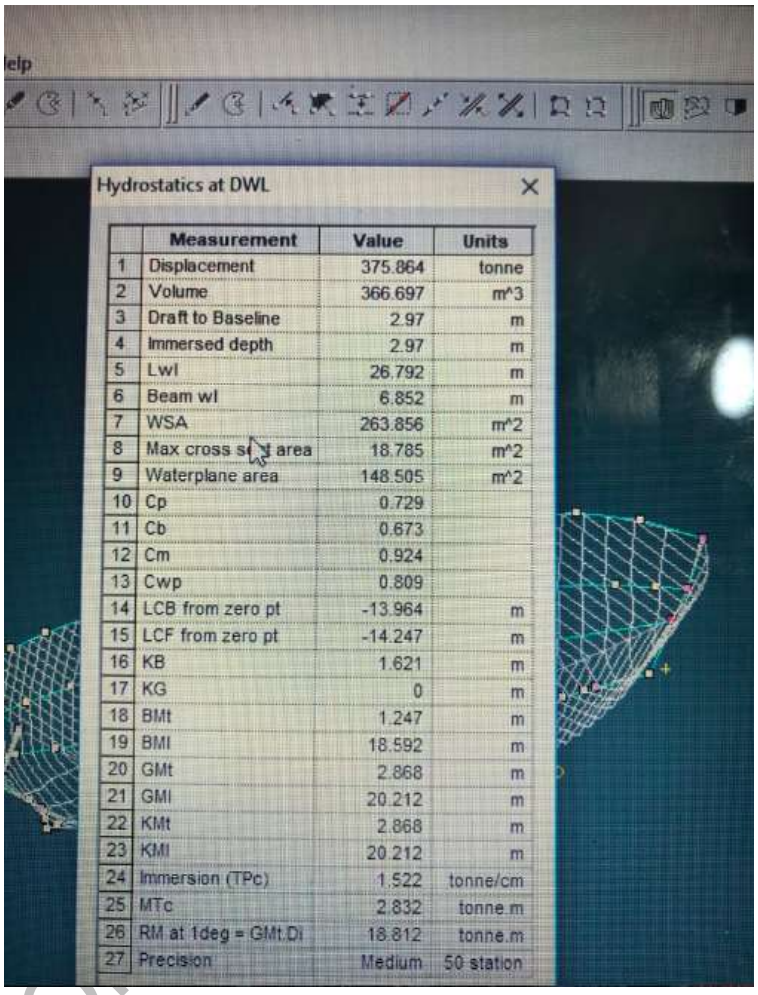
This point refers to the minimum height of the bow as a function of the length, and the respective block coefficient

Note: This check must be performed with the help of the following programs.

- Autocad
- MaxSurf

Rule 40

At this point we show the minimum summer freeboard that we have to obtain which is the arithmetic sum of all the corrections mentioned above, a very important point is that to obtain the minimum freeboard must be obtained by data obtained at draught (summer freeboard), to obtain the same Maxsurf will be used as a means of analysis.



Hydrostatics at DWL

	Measurement	Value	Units
1	Displacement	375.864	tonne
2	Volume	366.697	m^3
3	Draft to Baseline	2.97	m
4	Immersed depth	2.97	m
5	Lwl	26.792	m
6	Beam wl	6.852	m
7	WSA	263.856	m^2
8	Max cross sect area	18.785	m^2
9	Waterplane area	148.505	m^2
10	Cp	0.729	
11	Cb	0.673	
12	Cm	0.924	
13	Cwp	0.809	
14	LCB from zero pt	-13.964	m
15	LCF from zero pt	-14.247	m
16	KB	1.621	m
17	KG	0	m
18	BMt	1.247	m
19	BMl	18.592	m
20	GMt	2.868	m
21	GMl	20.212	m
22	KMt	2.868	m
23	KMl	20.212	m
24	Immersion (TPc)	1.522	tonne/cm
25	MTc	2.832	tonne.m
26	RM at 1deg = GMt.Di	18.812	tonne.m
27	Precision	Medium	50 station

5.2 PROCEDURE FOR CERTIFICATION OF INTERNATIONAL LOAD LINES

Surveyor

5.2.1 Adjusts the certification of Load Lines to the Procedure for the Survey and Interim Certification P-RS-01 and will include the specific instructions of this instructive.

5.2.2 Issues an interim certificate LL-IC whose validity in no case will exceed five (5) months counted from the date of concluding the initial or renewal.
Load Lines survey and satisfy the requirements of the ILL-66/88 Convention and its amendments on the contrary will proceed with item 5.2.3.

5.2.3 Issues a conditional certificate LL-IC (Short Term) whose validity will not exceed two (2) months from the date of the survey of Load Lines to ships with deficiency remarks that do not affect the safety of the ship and according with the Procedure for Ships with Deficiencies P-RS-03.

Technical Director

5.2.4 Contacts to the ship owner/operator of the Ship when notified by the surveyor that the ship was found with deficiencies that do not affect the safety of the same, with the purpose to inform the port in which is possible to coordinate a further visit to verify correction of the indicated deficiencies.

Surveyor

5.2.5 Only upon receiving authorization from NASHA Technical Director proceeds when applied item 5.2.3 to issue an interim certificate LL-IC, with validity of an additional period to complete the five (5) months from the survey date if the noted deficiencies were rectified.

Technical Director

5.2.6 Coordinates with the concerned Maritime Administration the possibility for extending the validity of the LL-IC (short term) a maximum of two (2) additional months if the ship owner/operator/Captain of the Ship with deficiencies, requests additional time by justified reasons.

5.2.7 Issues a International Load Lines Certificate LL, whose validity will not exceed the established period in items 4.8.7.1 of this instructive to all Load Lines surveys that satisfies the general procedures and what is indicated in this instructive.

Surveyor

5.2.8 Endorses the International Load Lines Certificate LL in the section Annual Survey to a satisfactory annual Load Line Survey.

5.2.9 Endorses the International Load Lines Certificate LL, in the appropriate section when applying Articles 19(8)(c), 19(3), 19(4), 19(5), 19(6), 19(8)

5.2.10 Complies with the Procedure for the Survey and Interim Certification P-RS-01 concerning the notification via fax or e-mail to Technical Department of the issued interim certificate or endorsement of the full term International Load Lines Certificate.

5.2.11 All the information of the Load Line survey will be evaluate by a Naval Architect and approved by head office.

5.3 PROCEDURE FOR FREEBOARD CALCULATION

Surveyor

5.3.1 In case of calculate the freeboard is necessary the following documents:

5.3.1 Copy of General Arrangement Plan
5.3.2 Hydrostatic Tables

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

5.3.2 In case the freeboard calculation was done by the Naval Architect approved by National Shipping Adjusters, the freeboard calculation will be approved immediately by the head office.

5.4 PROCEDURE FOR INCREASE DEADWEIGHT / DRAFT

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

5.4.1.1 Stability booklet
5.4.1.2 Freeboard calculation
5.4.1.3 ITC certificate
5.4.1.4 LL certificate
5.4.1.5 Tonnage calculation
5.4.1.6 Grain booklet

This document will be evaluated 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 Reports and Records of surveys for Load Lines LL-SR, LL-RA
6.6 Interim Certificate LL-IC
6.7 Control of Documentation
6.8 Statutory International Load Lines Certificate LL/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 fulfill 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 P-RS-03 Procedure for Cases of Ships with Deficiencies
8.4 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
9.3 P-RS-03 Procedure for Cases of Ships with Deficiencies