



SUB-COMMITTEE ON STABILITY AND  
LOAD LINES AND ON FISHING  
VESSELS SAFETY - 29th session  
Agenda item 10

IMO

Tonnage Convention 1969  
single decker  
excluded spaces  
open spaces  
stepped upper deck  
small spaces  
Passages  
cranes

IMPLEMENTATION AND INTERPRETATION  
OF THE 1969 TONNAGE CONVENTION

Submitted by the Federal Republic of Germany

1 Interpretations

The International Convention on Tonnage Measurement of Ships, 1969 has been in force more than one year. The experiences of the Federal Republic of Germany with the measurement of new ships and the calculation of the tonnages as well as inquiries of some shipyards on interpretation of the Convention seem to make it necessary to bring forward to IMO some of these questions aiming for harmonization in the interest for a uniform application in the contracting countries.

2 Alterations and modifications (Article 3(2)(b))

In spite of the interpretations given in TM/Circ.28 it seems to be necessary to discuss this item again.

Up to now we have remeasured existing ships according to the new tonnage rules:

- if the ship was lengthened
- if the upper deck was raised
- if the upper deck hatches were enlarged.

Here at any rate the changing of the hull of the ship led to a substantial extension of the former gross tonnage so there was no doubt in the interpretations of Article 3(2)(b). (See Figure 1, Sketches A and B.)

However there are enquiries about the lengthening of a single decker (Oslo-Tonnage Certificate Mod. I) with a simultaneous conversion to a ship with a tonnage mark (Oslo-Tonnage Certificate, Mod. IB) with no changing of the result of the measurement, for example 999 BRT. Is this a substantial variation? There are a lot of doubts as to the interpretations of the Convention, because the existing gross tonnage is not substantially changed. (See Figure 1, Sketches C, D, E.)

Which value should be regarded as "substantial changing" of gross tonnage should also be discussed. It could be 1%, 10% or 20% of the former gross tonnage.

Although every alteration or modification must be individually considered nevertheless there should be a guideline in this matter.

### 3 International Tonnage Certificate (1969)

The Certificate shows on the front page general information of the ship as well as the gross and net tonnages.

On the back all those spaces the volumes of which are enclosed in the gross tonnage should be listed as well as the spaces whose volumes belong to the cargo spaces. Additional spaces which are exempted should be added or marked with an asterisk.

As shown in Figure 2 this information as well as the volumes of included spaces may be different and consequently the result of the tonnage calculation based on different volumes is different too. Because of this it would be desirable to define the information to be given in this part of the Certificate. On the one hand this would be a guidance to the authority issuing the Certificate, on the other hand it will be better information of the actual situation of a certain ship to those to whom the Certificate will be submitted later on. An example of how the Federal Republic of Germany would proceed is given in Figure 3.

The Federal Republic of Germany would propose also to discuss which spaces or parts of spaces should be listed under "excluded spaces" and which of them only should be marked with an asterisk in the above-mentioned list.

In addition to this it would be of interest to the Federal Republic of Germany to know under which condition different spaces should be listed or otherwise could be concentrated under one item.

Figure 4 shows some sketches of erections and their possible terms.

### 4 Open spaces

Annex 1 of the Convention and the supplementary figures of Appendix 1 give detailed advice on which spaces should be considered as open spaces. However, it seems to be necessary to give an interpretation of what is meant by "the space is fitted with shelves or other means for securing cargo or stores", (Regulation 2(5)). Is the meaning of "other means for securing cargo"

that the existence of e.g. lashing eyes or container guides/container securing equipment or winches (of any condition) in such an open space - according to the conditions of this paragraph (5) - makes such an open space to an enclosed space? (See Figures 5 and 6)

Furthermore it is necessary to clarify whether spaces in erections as shown in Figure 7 are to be regarded as excluded spaces according to Regulation 2(5.2)(a)(ii) or as recesses according to Regulation 2(5)(e).

Figure 8 shows an "open" ship. The maindeck is suitable to store cargo e.g. container. Can this space be ignored as a cargo space?

Figure 9 shows a part of a ro/ro ship with a stern ramp. The inclined ramp to the upper deck within the erection is "open to sea". However, a container or suchlike can be stored here as well. Is this space nevertheless an "open space" under the conditions of Regulation 2(5)?

#### 5 Stepped upper deck

The question of a stepped upper deck was discussed in STAB XXVI/WP.6 but postponed at that time with respect to a parallel discussion about freeboard and load line mark.

Steps in the upper deck are without doubt of different significance with respect to stability and load lines as to tonnage measurement. Nevertheless it should be clarified under which conditions a step could be accepted for tonnage measurement.

The proposal made at that time reads:

"A step should not be less than 2.40 m in length or 4 frame spaces and should be located between the perpendiculars."

#### 6 Small spaces

The Sub-Committee at its twenty-second session agreed that spaces less than  $1 \text{ m}^3$  should not be considered for reasons of simplification. (See also TM.5/Circ.1, interpretation of Regulation 6, paragraph 3)

In erections there are a lot of small "recesses" for windows, etc. that are spaces "open to the sea". Mostly, however, less than  $1 \text{ m}^3$ . To simplify the calculation the Federal Republic of Germany would prefer to ignore these "recesses" as well as similar volumes attached outside of the boundary

of such erections like companion hatches, air trunks, etc. (See Figure 10) Should this procedure make it necessary to mark with an asterisk the corresponding part on page 2 of the Tonnage Certificate?

Signal masts and the like often have different cross sectional areas (See Figure 11). The lower part has more than  $1 \text{ m}^2$ , the upper part less than  $1 \text{ m}^2$ . How is the volume of the total mast to be treated?

#### 7 Recesses

As shown in Figure 3 deckhouses and funnels are often located separately; platforms and stairs may be located between them. However, with a small distance to the adjoining funnel.

This small distance should be sufficient to exempt the spaces below the platform in any case. (See Figure 12)

#### 8 Mobile cranes

Masts and other cargo handling gear were ignored in tonnage measurement before the 1969 Tonnage Convention came into force. On the other hand large cranes on upper deck as well as mobile cranes were included in the gross tonnage unless these spaces or parts of them could be excluded.

It should be clearly stated under the provisions of the 1969 Tonnage Convention whether those spaces, especially mobile cranes, belong to the total moulded volume. (See Figure 13)

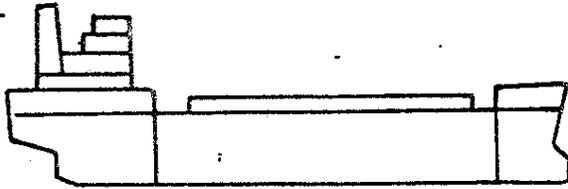
#### 9 Volume of cargo spaces

Often the volume of a cargo space is reduced by box girders or other closed foundations sometimes only accessible by manholes or other small openings as shown in Figure 14. Are these volumes to be considered as volumes belonging to the volume of the cargo space  $V_c$ ?

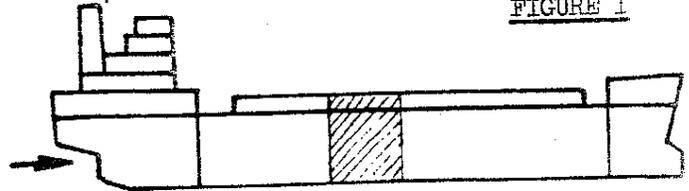
Bundesamt für Schiffsvermessung

FIGURE 1

A.

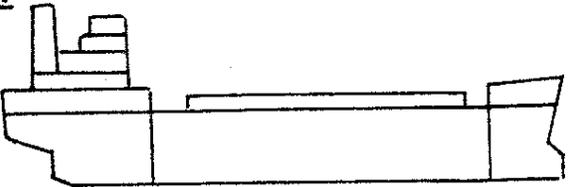


Singledecker 999 BRT

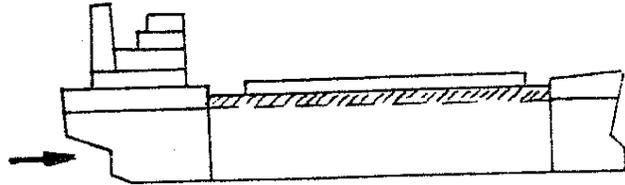


after lengthening  
Singledecker 1100 BRT

B.

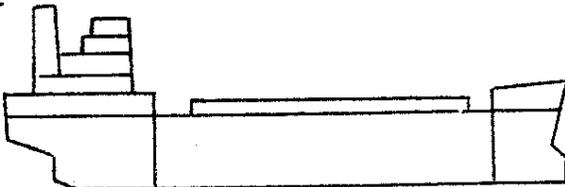


Singledecker 999 BRT

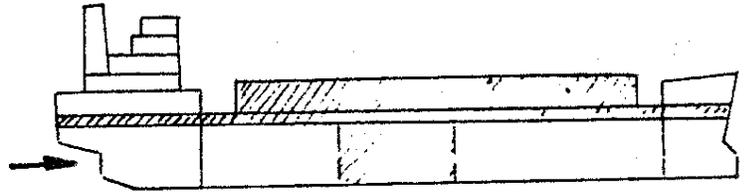


after raising of upper deck  
Singledecker 1100 BRT

C.

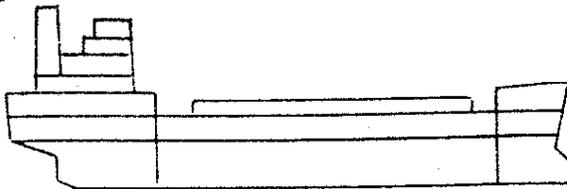


Singledecker 999 BRT  
- Tonnage Certificate "Oslo"-Mod. I -

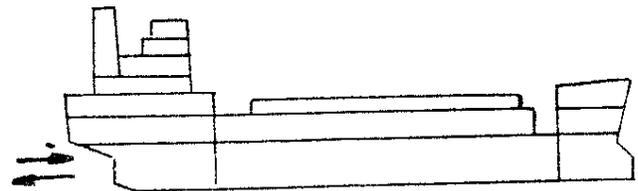


after lengthening of the ship, inserting of  
a tweedeck and enlargement of the hatch,  
remeasurement as "Ship with tonnage mark",  
-Tonnage Certificate "Oslo"-Mod. IB -  
999 BRT

D.

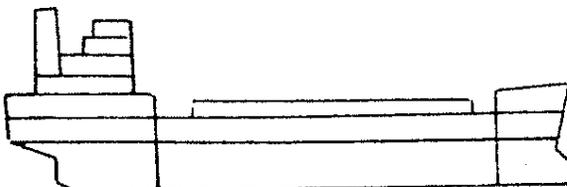


"Ship with tonnage mark" 499 BRT  
- Tonnage Certificate "Oslo"-Mod. IB

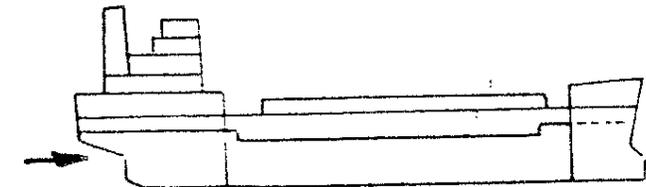


Rebuilding to a Singledecker 499 BRT  
-Tonnage Certificate "Oslo"-Mod. I-

E.



"Ship with tonnage mark" 499 BRT  
according to "Oslo"-Rules,



arrangement of steps fore & aft,  
"Ship with tonnage mark" 499 BRT  
according to "Oslo"-Rules. Art. 57 III 5

FIGURE 2

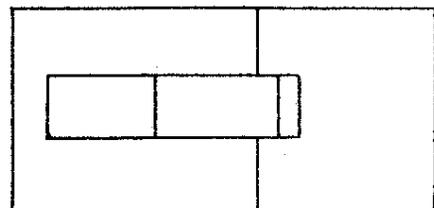
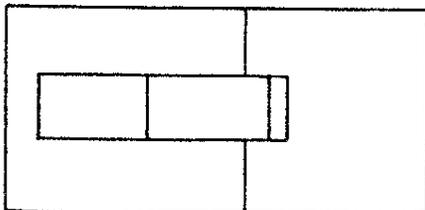
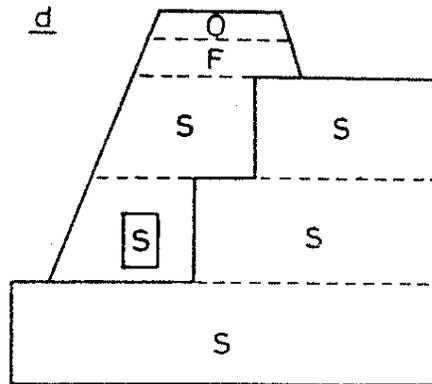
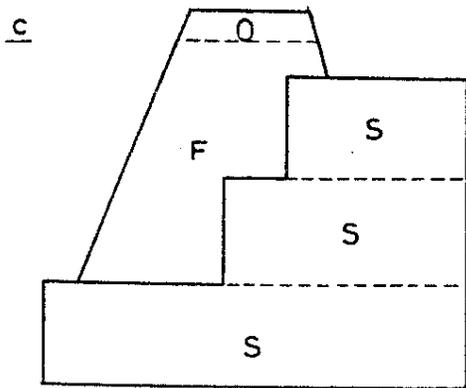
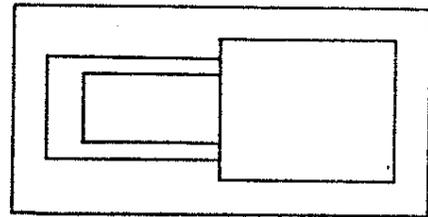
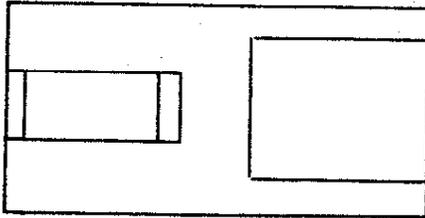
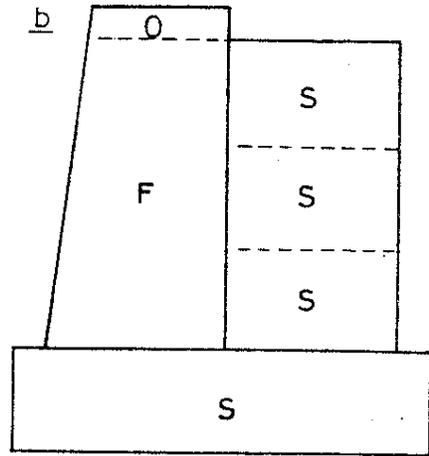
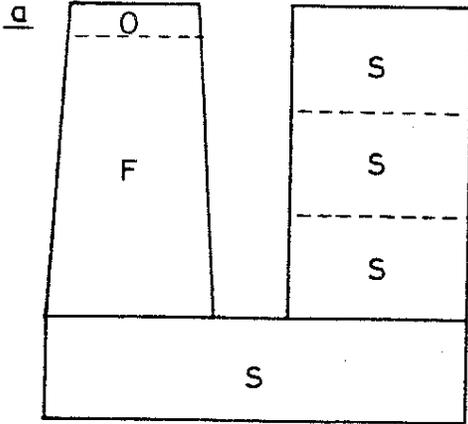
International Convention on Tonnage Measurement of Ships, 1969  
 - Comparison of Tonnage Certificates of Sister ships  
 issued by different authorities -

			A	B
Length	- Article	2 (8)	235,63 m	235,63 m
Breadth	- Regulation	2 (3)	32,22 m	32,22 m
Moulded Depth	- Regulation	2 (2)	20,50 m	20,50 m
Moulded Draught	- Regulation	4 (2)	14,31 m	14,28 m
	Gross Tonnage		44 910	44 478
	Net Tonnage		23 681	23 069

Gross Tonnage	Length m	Volume A m <sup>3</sup>	Volume B m <sup>3</sup>	Net Tonnage	Length m	Volume A m <sup>3</sup>	Volume B m <sup>3</sup>
Underdeck	241,70	137 536,46	137 613,49	Cargo hold 1	21,38	9 461,16	9 410,47
Forecastle	18,05	996,38	932,59	- " - 2	18,90	9 770,82	9 789,92
Roundh. 1st T	37,03	1 701,10	1 683,44	- " - 3	18,90	9 875,91	9 903,27
- " - 2nd T	17,73	935,56	932,88	- " - 4	18,90	9 875,91	9 901,08
- " - 2nd T	10,91	353,10	347,08	- " - 5	18,37	9 590,31	9 693,85
- " - 3rd T	6,74	185,33	857,57	Slop tank	4,20	2 196,41	2 206,73
- " - 3rd T	17,73	853,32	183,02	Cargo hold 6	18,37	9 590,31	9 692,76
- " - 4. T	17,73	853,32	857,57	- " - 7	18,90	9 875,91	9 902,20
- " - 5. T	17,73	853,32	857,57	- " - 8	18,90	9 810,51	9 801,91
- " - 6. T	13,91	317,32	331,47	- " - 9	20,32	10 111,96	10 091,18
- " - 6. T	3,80	22,80	22,34	Hatches	9 x	1 906,02	2 006,95
Mast	1,30	34,04	-	Companion hatch	19 x	-	7,03
Funnel	6,74	393,14	-		0,68		
Hatches + Covers	9x12,57	2 985,66	2 006,95				
- " -	1x 1,18	1,40	-			92 005,23	92 407,35
- " -	1x 1,66	2,45	7,03				
Companion-hatches	19x0,68		7,03				
- " -	1x 0,60		0,23				
- " -	1x 0,74		0,77				
- " -	1x 1,00		0,91				
- " -	1x 1,02		0,94				
- " -	1x 1,00		0,57				
- " -	1x 1,46		0,57				
		148 024,70	146 636,99				

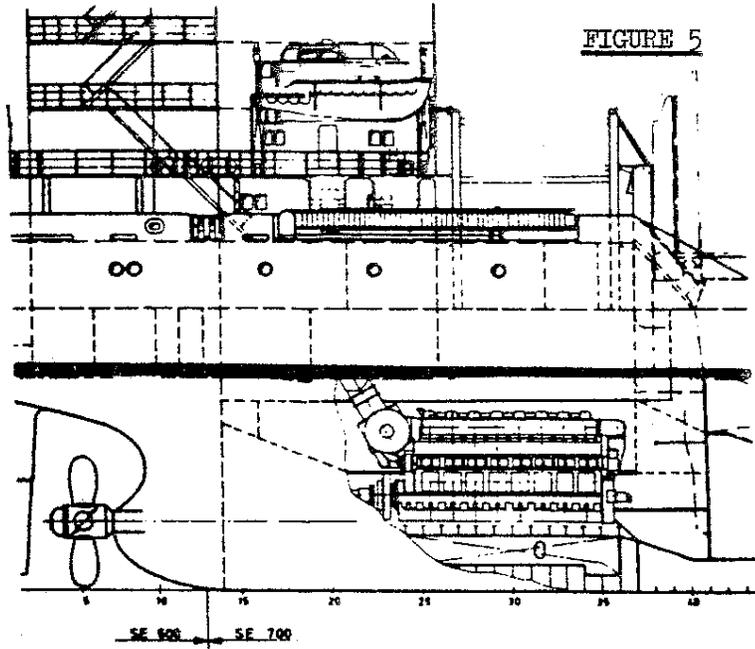
BRUTTORAUMZAHL GROSS TONNAGE			NETTORAUMZAHL NET TONNAGE		
Bezeichnung des Raumes Name of Space	Lage Location	Länge Length	Bezeichnung des Raumes Name of Space	Lage Location	Länge Length
Unterdeck Back/Forecastle	Spt./Fr. 83-fwd.	(m) 21,95	Laderäume/ No. 1	Spt./Fr. 183-194	(m) 8,88
Trunk	48-183	112,62	No. 2	145-183	30,78
Deckshaus/1.-4.D*	17-48	23,25	No. 3	105-145	32,40
Deck house/5.-6.D*	23-48	18,75	No. 4	87-105	17,82
Luke Nr. 1-8/ Hatch No. 1-8	siehe Netto/ see Net Tonnage		No. 5	48-87	31,51
Store Luke/ Store hatch	202-204	1,32	Ladeluke/ Cargo hatch		
"	24-27 P	2,58	No. 1	184-192	6,49
Proviantluke/ Provision hatch	20-22 S	1,51	No. 2	166-182	13,00
Lukendeckel/ Hatch covers	Oberdeck/ upper deck		No. 3	148-164	13,00
3 Krane/Cranes			No. 4	124-140	13,00
Schornstein/ Funnel	26-36	7,50	No. 5	106-122	13,00
			No. 6	92-104	13,00
			No. 7	68-84	13,00
			No. 8	30-66	31,00
<b>AUSGESONDERTE RÄUME</b> EXCLUDED SPACES [Regel 2 (5)/Regulation 2 (5)] Schwimmbad 3. Deck/Swimming pool 3rd tier Nischen für Aufgang Spt. 38, 4., 5., 6. Deck Recesses frame 38, 4th, 5th, 6th tier  Räume, die zum Teil ausgesondert sind, sollen in der oben- stehenden Aufstellung mit einem Stern (*) gekennzeichnet werden. An asterisk (*) should be added to those spaces listed above which comprise both enclosed and excluded spaces.			<b>ANZAHL DER FAHRGÄSTE</b> NUMBER OF PASSENGERS [Regel 4 (1)/Regulation 4 (1)]  Keine/None Anzahl der Fahrgäste in Kabinen mit nicht mehr als 8 Betten <u>Eine/One</u> Number of passengers in cabins with not more than 8 berths  Anzahl der sonstigen Fahrgäste <u>Keine/None</u> Number of other passengers  <b>TIEFGANG</b> MOULDED DRAUGHT [Regel 4 (2)/Regulation 4 (2)]  11,20 m		
Tag und Ort der ersten Vermessung <u>17. August 1983, Hamburg</u> Date and place of original measurement					
Tag und Ort der letzten Nachvermessung _____ Date and place of last previous remeasurement					
<b>BEMERKUNGEN:</b> REMARKS:  Schiffsgattung <u>Containerschiff</u> Description of ship <u>Container ship</u>  Länge über Alles <u>174,02 m</u> Overall length  Name der Erbauer <u>Aktiengesellschaft</u> Name of builders  Bau-Nr. _____ Yard No <u>1416</u>					

FIGURE 4



S = Superstructure  
F = Funnel  
O = Open Space

FIGURE 5



POOPDECK

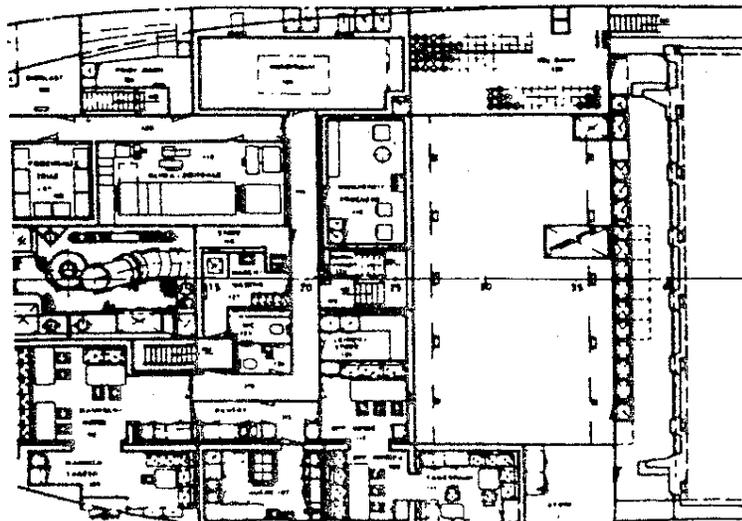
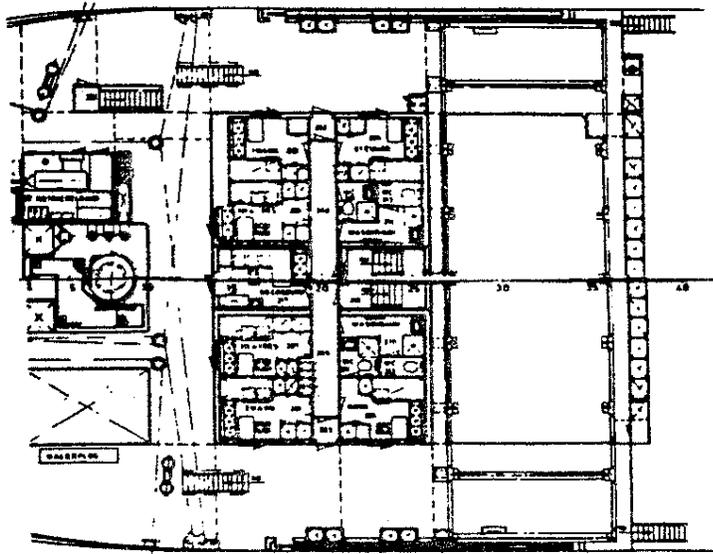


FIGURE 6

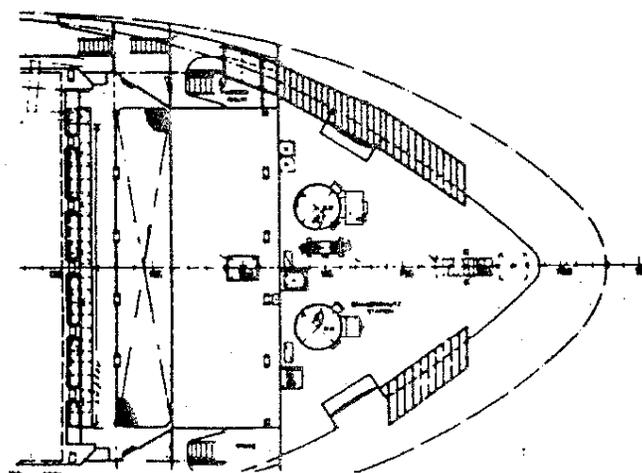
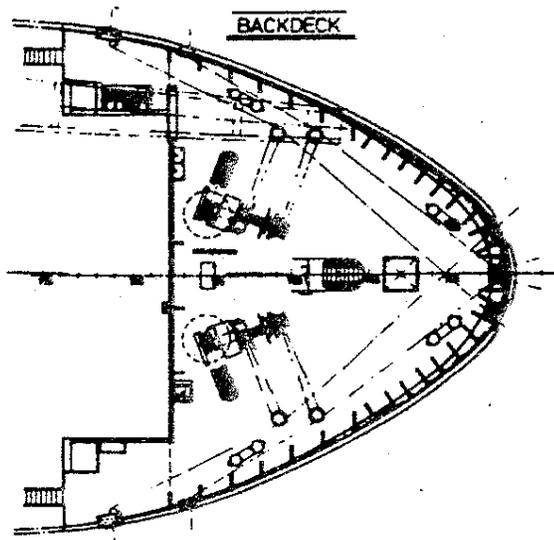
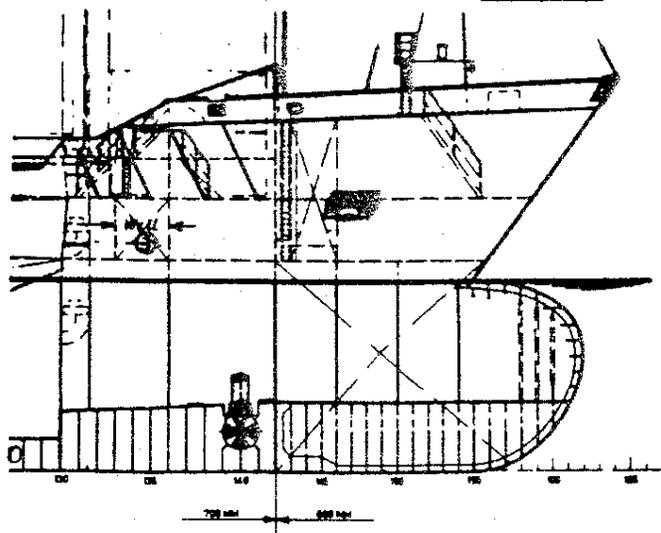


FIGURE 7

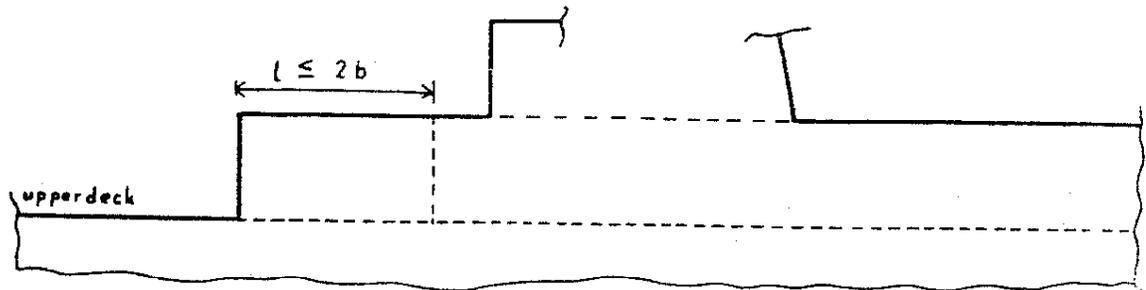
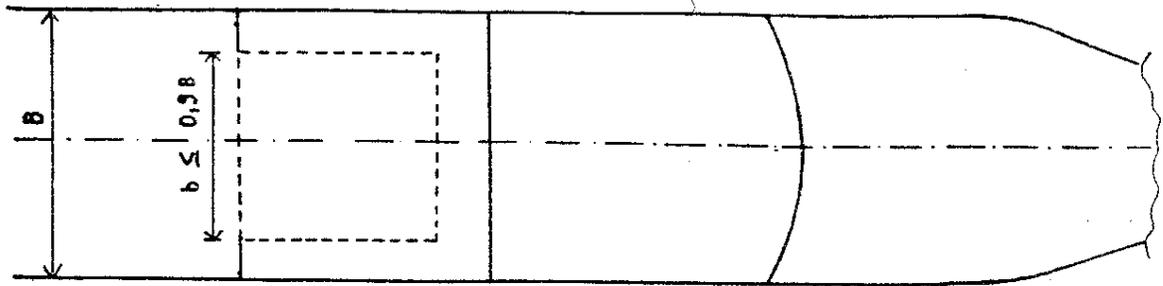


FIGURE 8

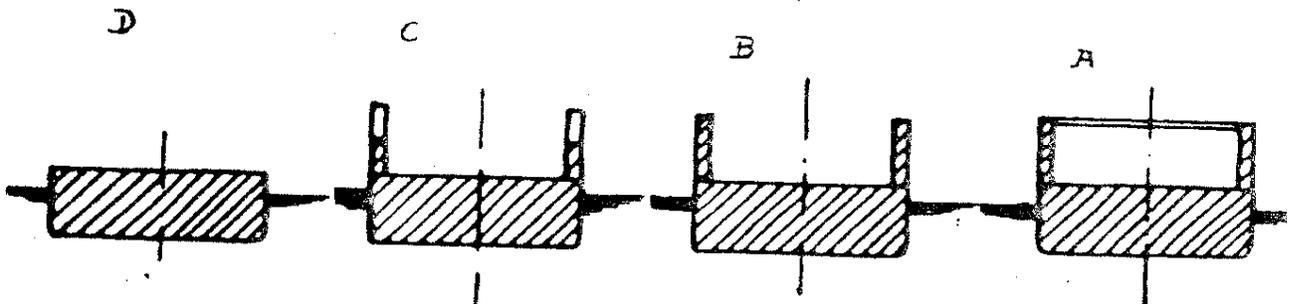
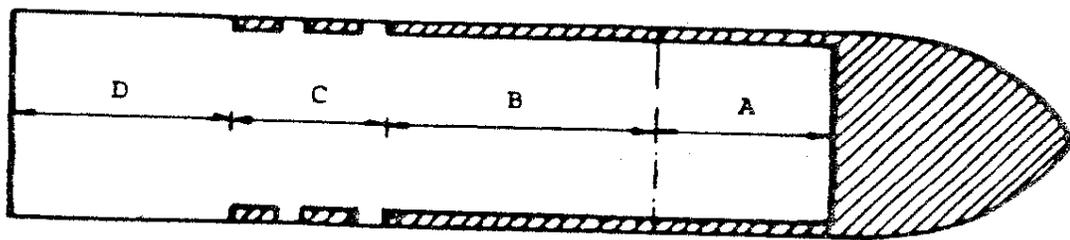
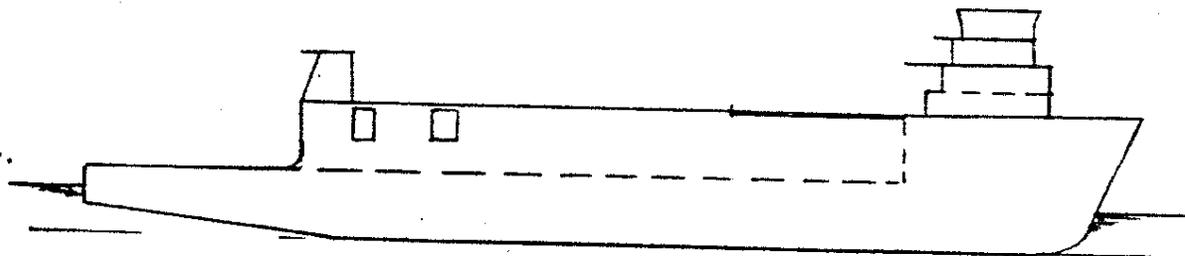


FIGURE 9

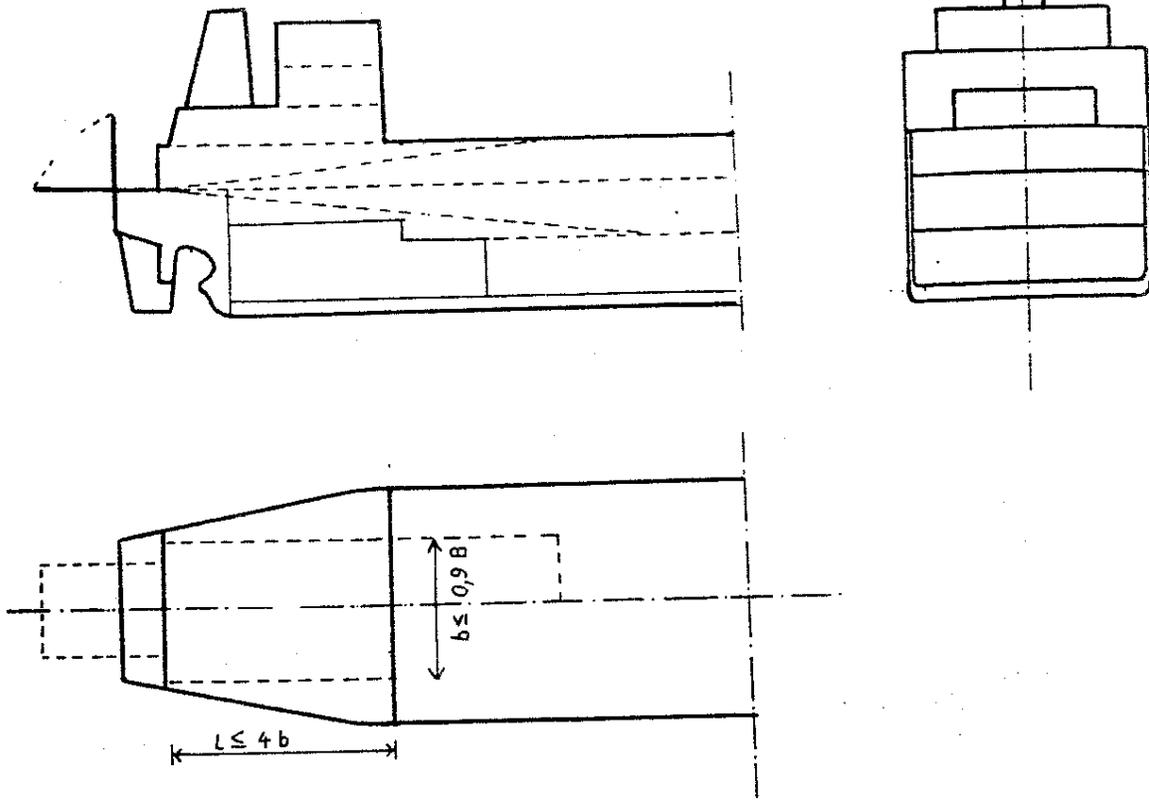


FIGURE 10

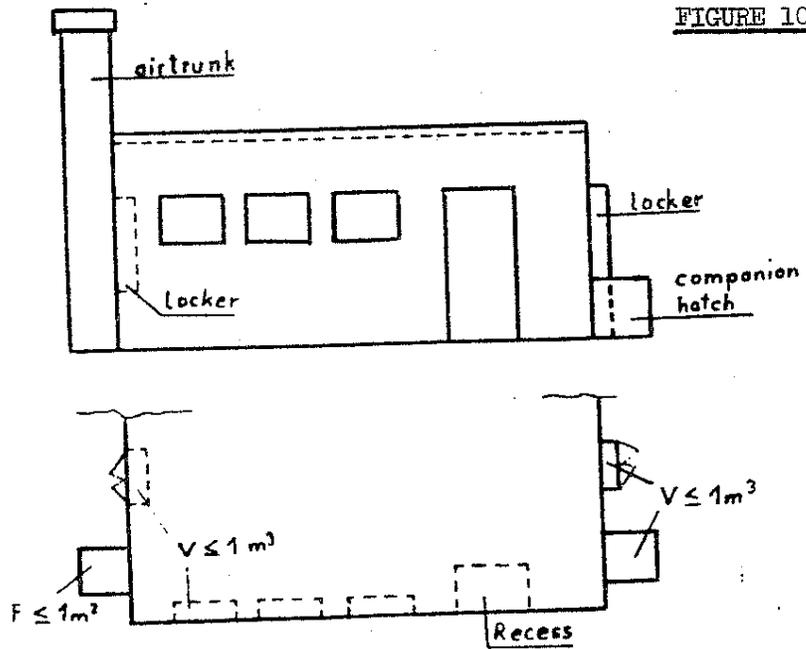


FIGURE 11

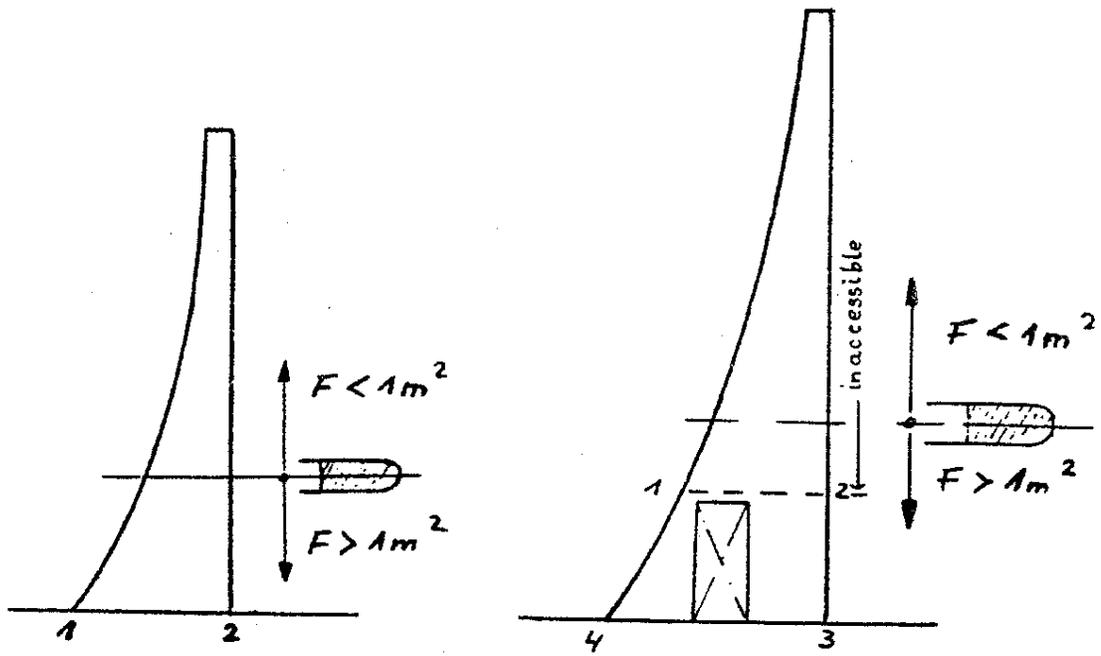


FIGURE 12

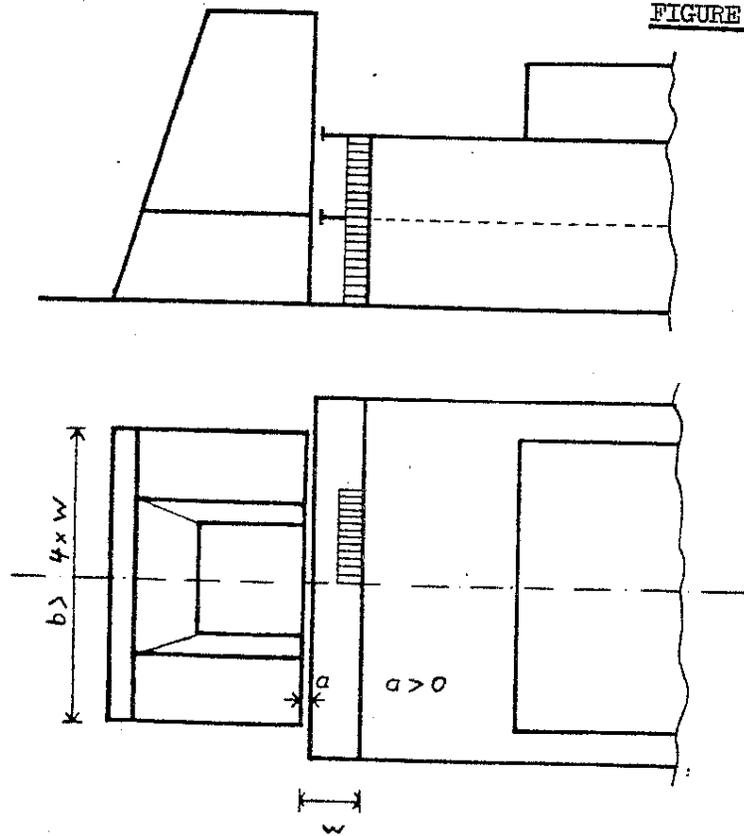


FIGURE 13

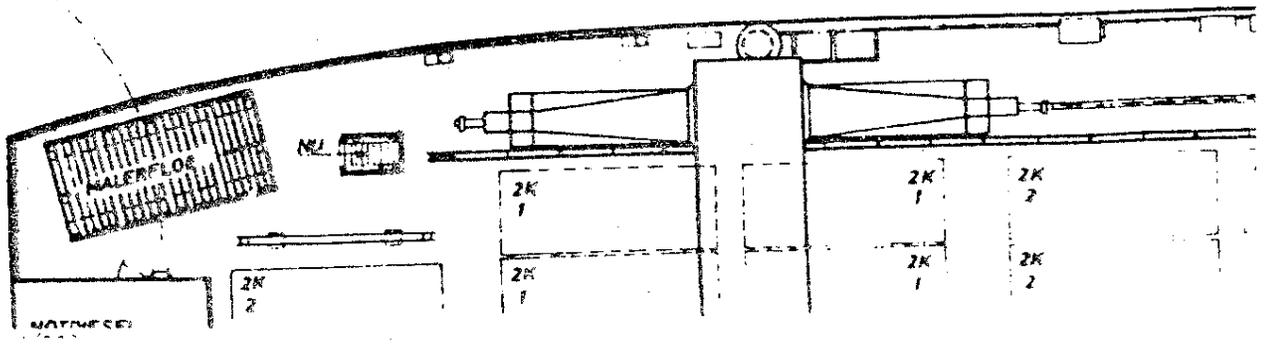
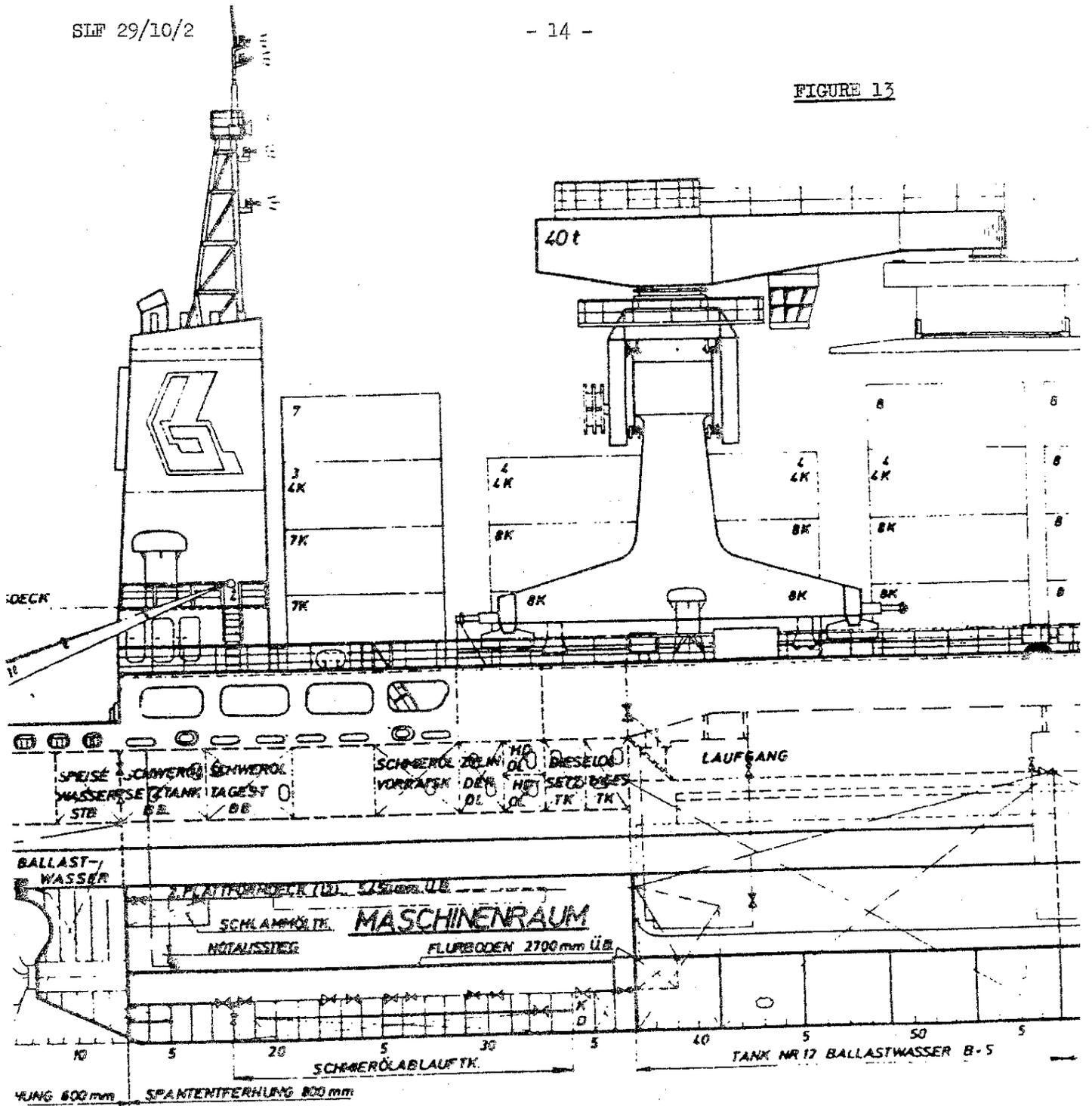
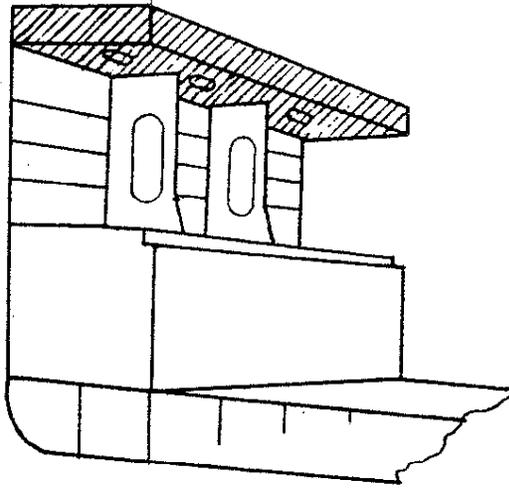


FIGURE 14

a



b

