

AG GE ND A

GL Generell

IACS/Rules/Conventions

Neubau

Beschichtung/Korrosion

Containerschiffe

Condition Assessment Surveys (CAP)

Bulker

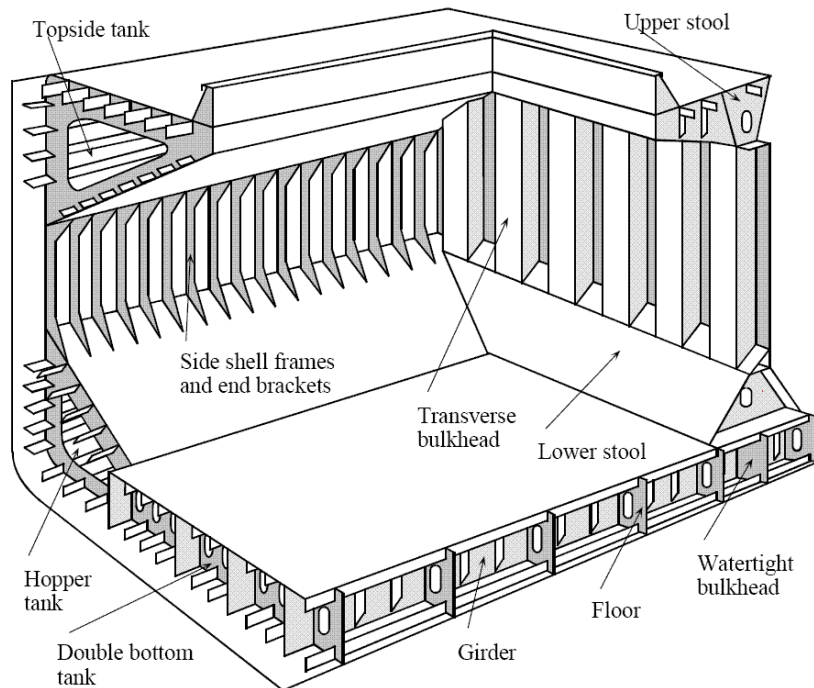
Besichtigungen

Schäden/Reparaturen

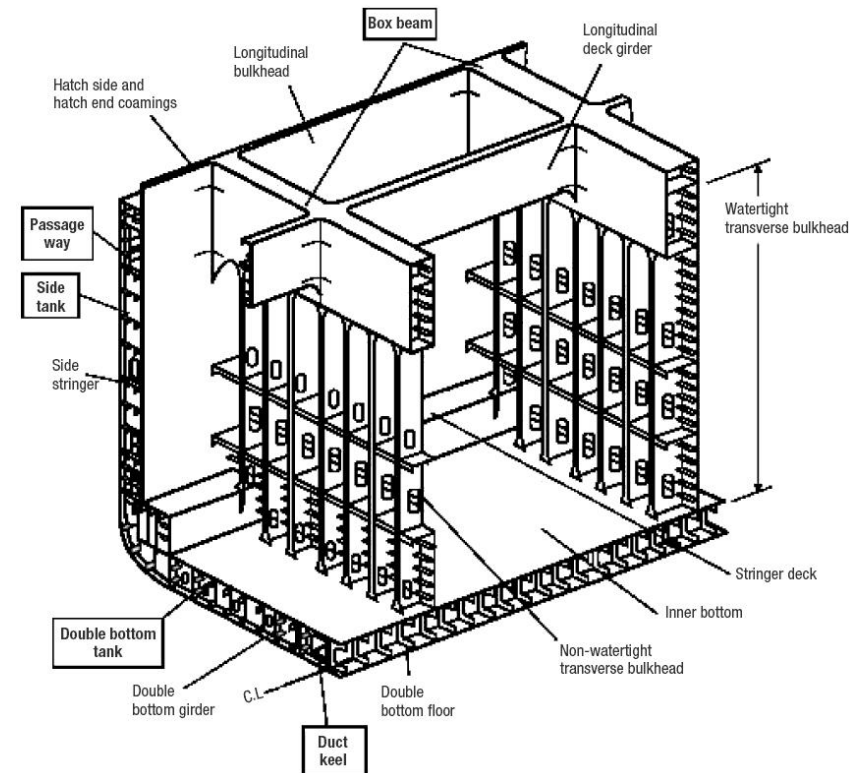
Emergency Response

Nomenklatur

single skin bulk carrier



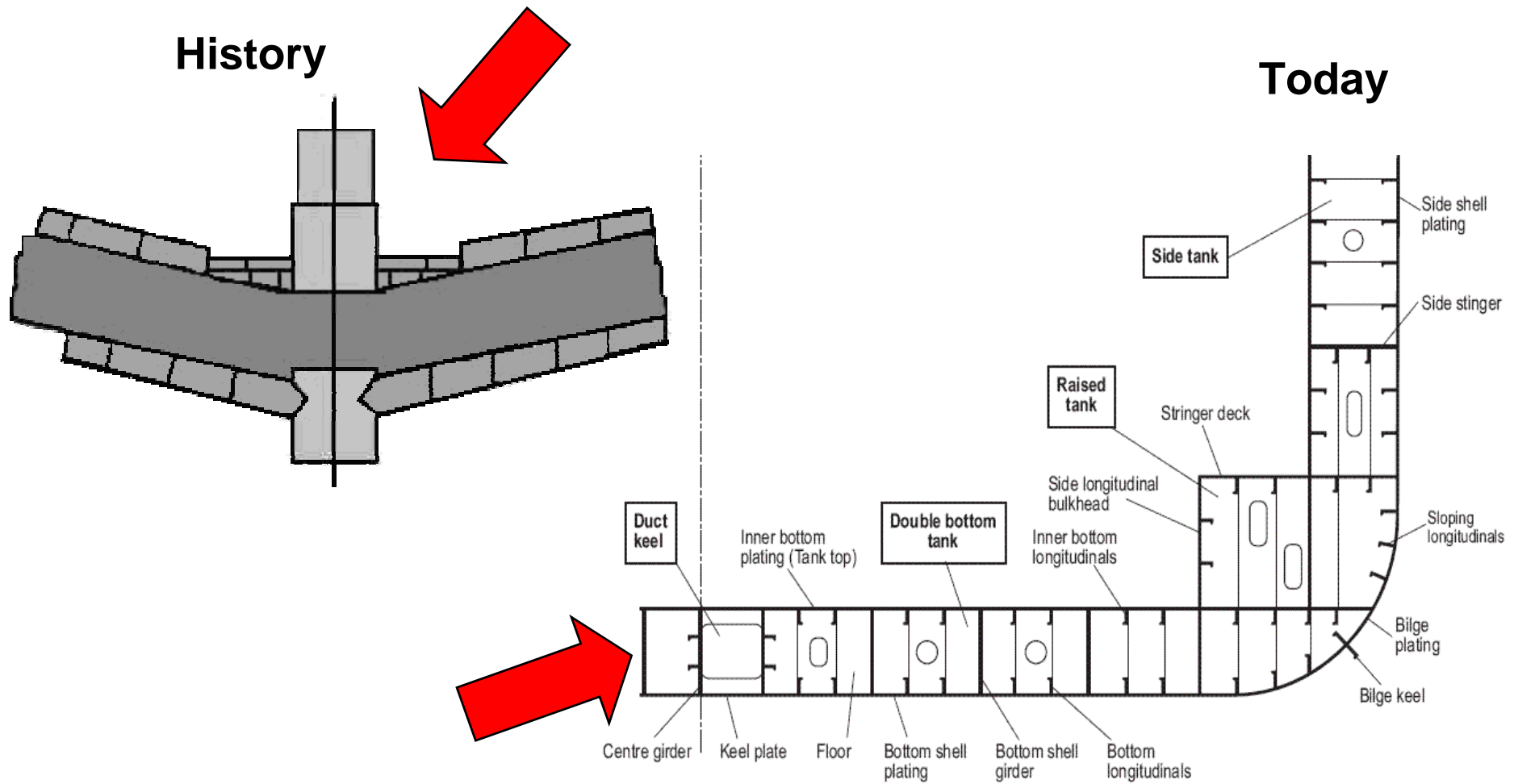
container carrier



Hull Glossary im Internet

http://www.iacsdata.org.uk/document/public/Publications/Guidelines_and_recommendations/PDF/REC_82_pdf221.pdf

Das Kielschwein



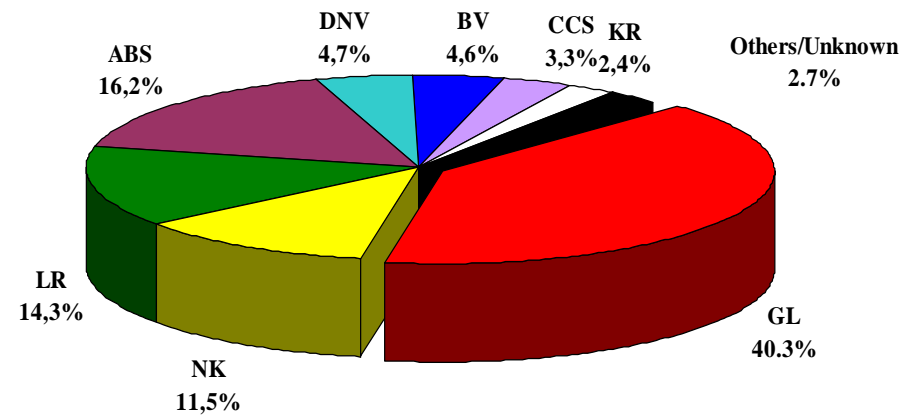
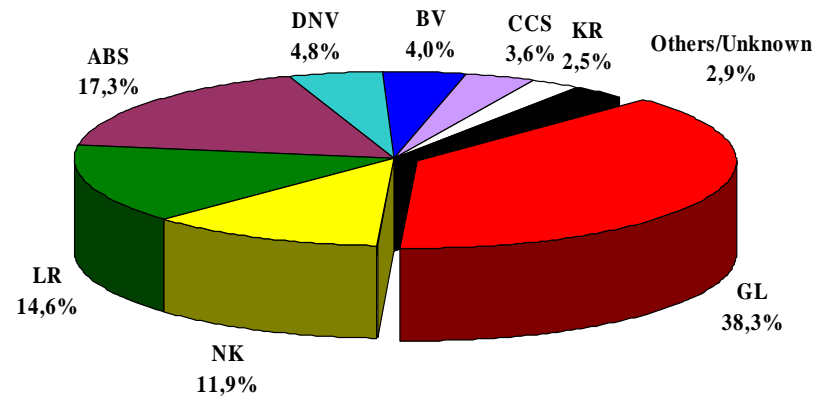
6200 TEU Container Ship (Maersk-Costamare) - 16 abreast on deck



World Fleet of pure Container Ships as of 2007-01-15

2006-01-16 (Total: 96.243.000 GT)

2007-01-15 (Total: 110.677.000 GT)

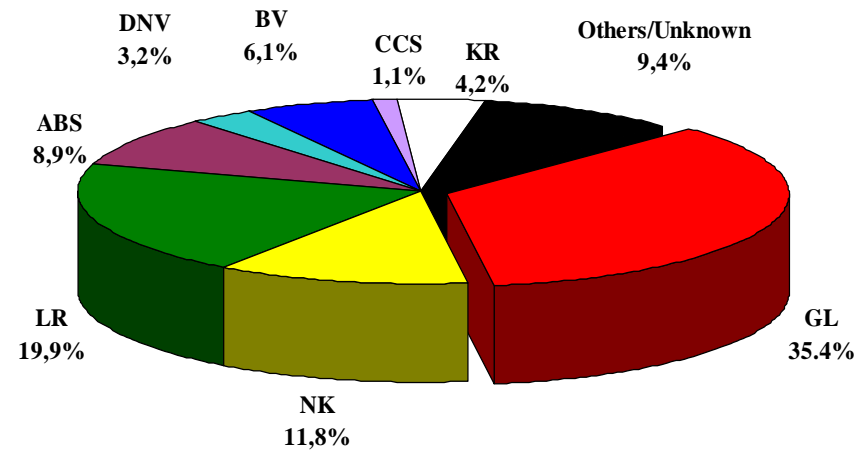
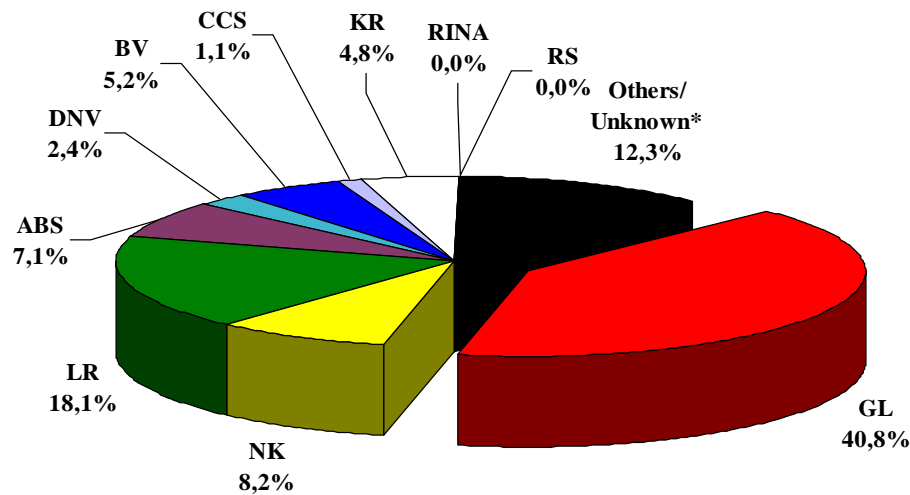


Ships of 300 GT and over as of mid of January 2006 / 2007 Source: ISL Fleet Database

Order book of pure Container Ships as of 2007-01-15

2006-01-16 (Total: 45.641.000 GT)

2007-01-15 (Total: 47.214.000 GT)



Ships of 300 GT and over as of mid of January 2006 / 2007 Source: ISL Fleet Database

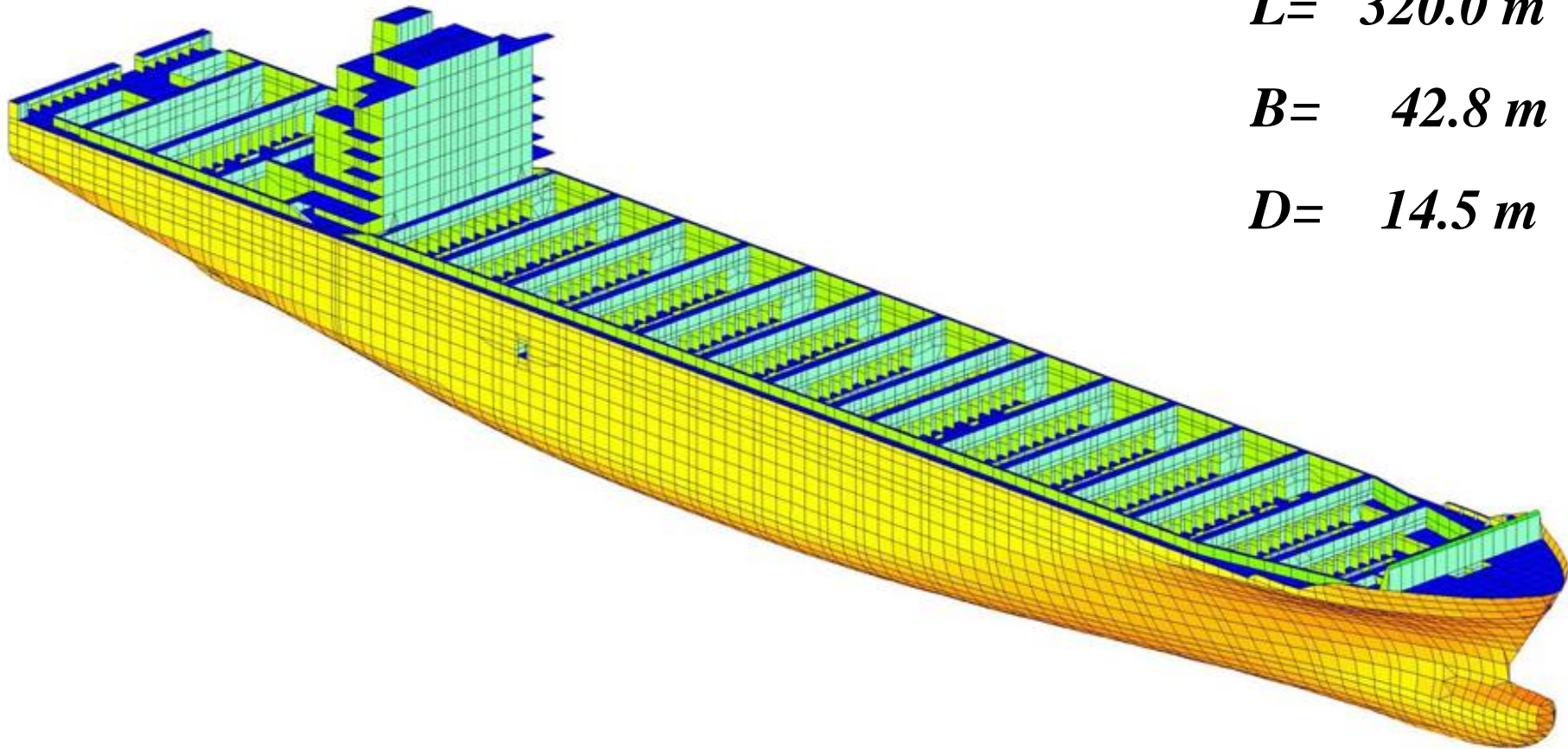
7500 TEU CLASS CONTAINER CARRIER

HHI for HAPAG LLOYD

L= 320.0 m

B= 42.8 m

D= 14.5 m

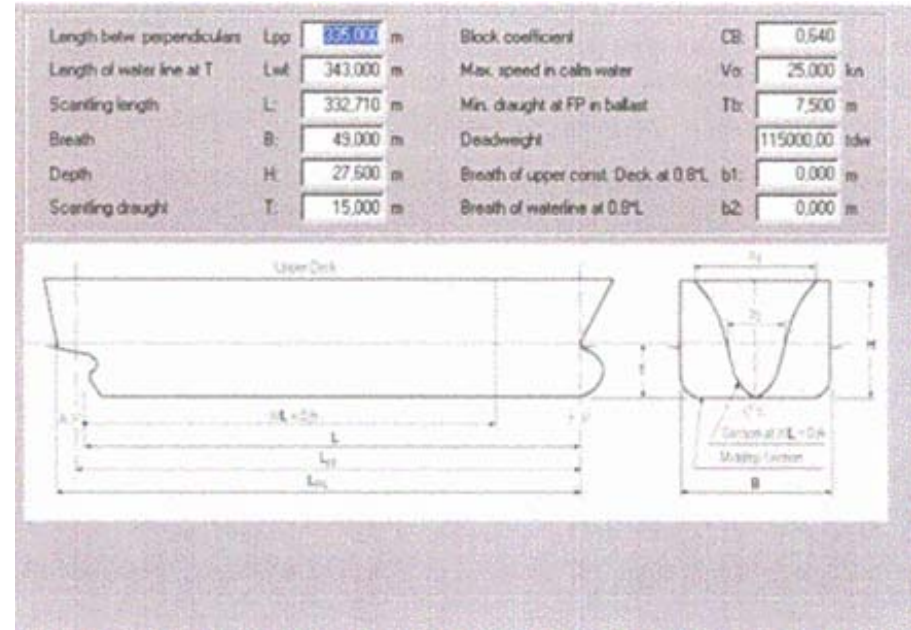


7500 TEU CLASS CONTAINER CARRIER

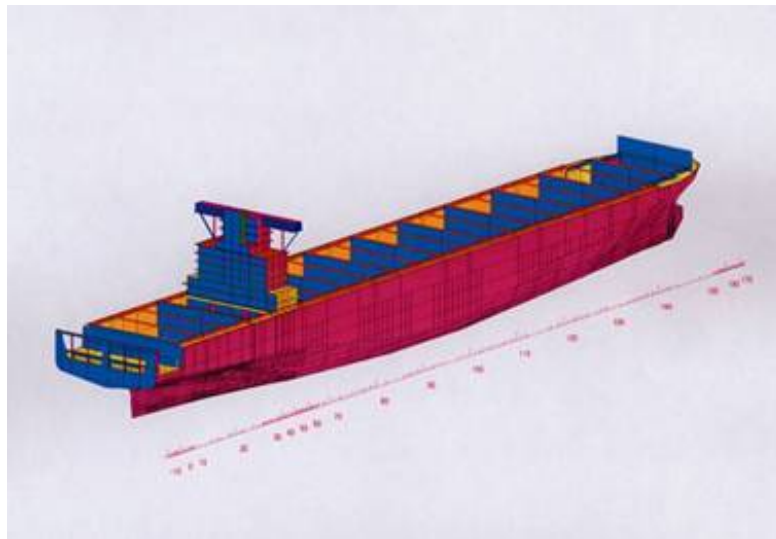
Hamburg Express



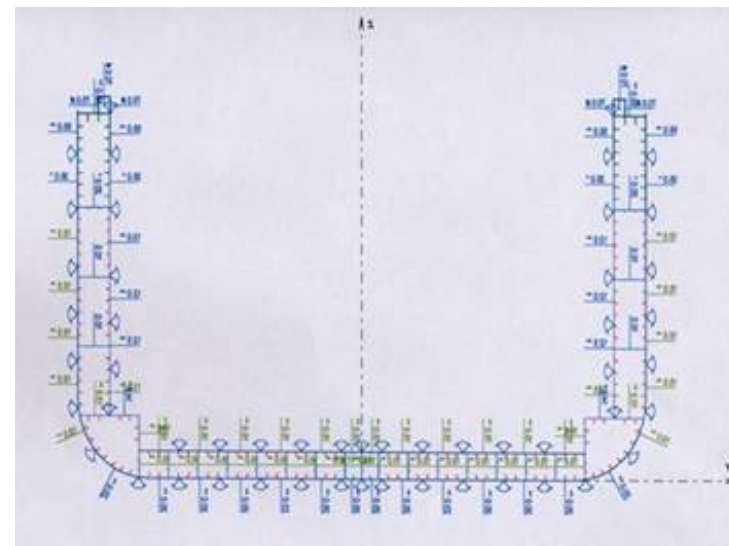
Design Study for 10000 TEU ULCC



POSEIDON Product Data



Geometry Model

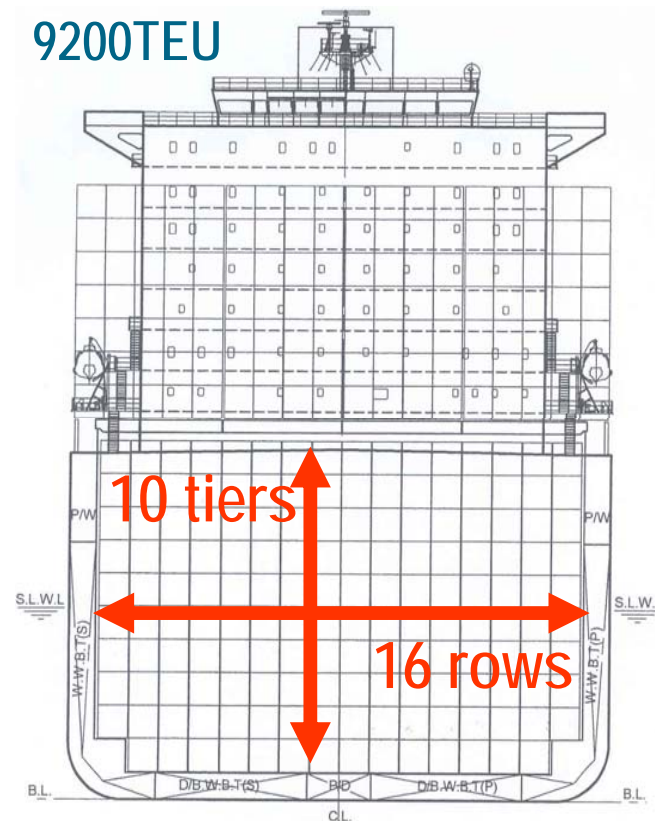
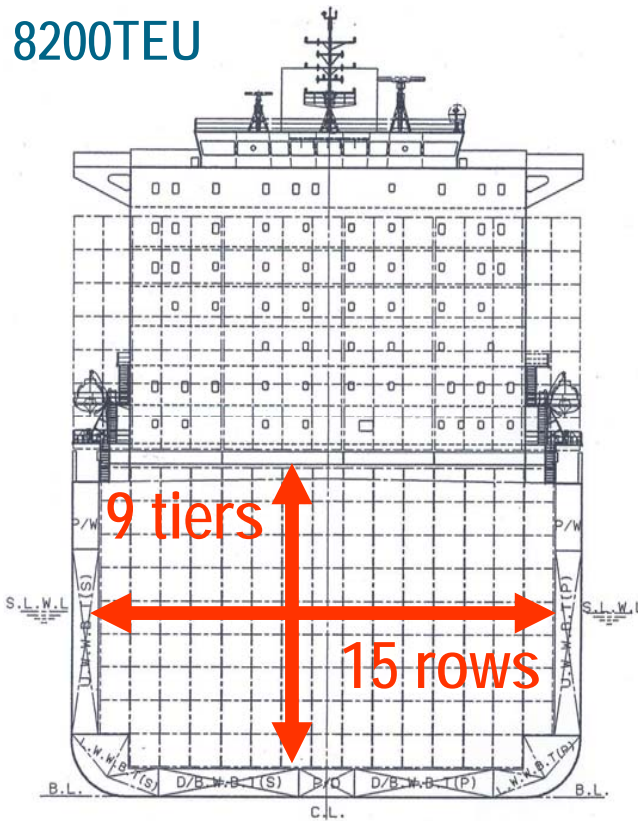


Midship Section

Size Development of Container Ships

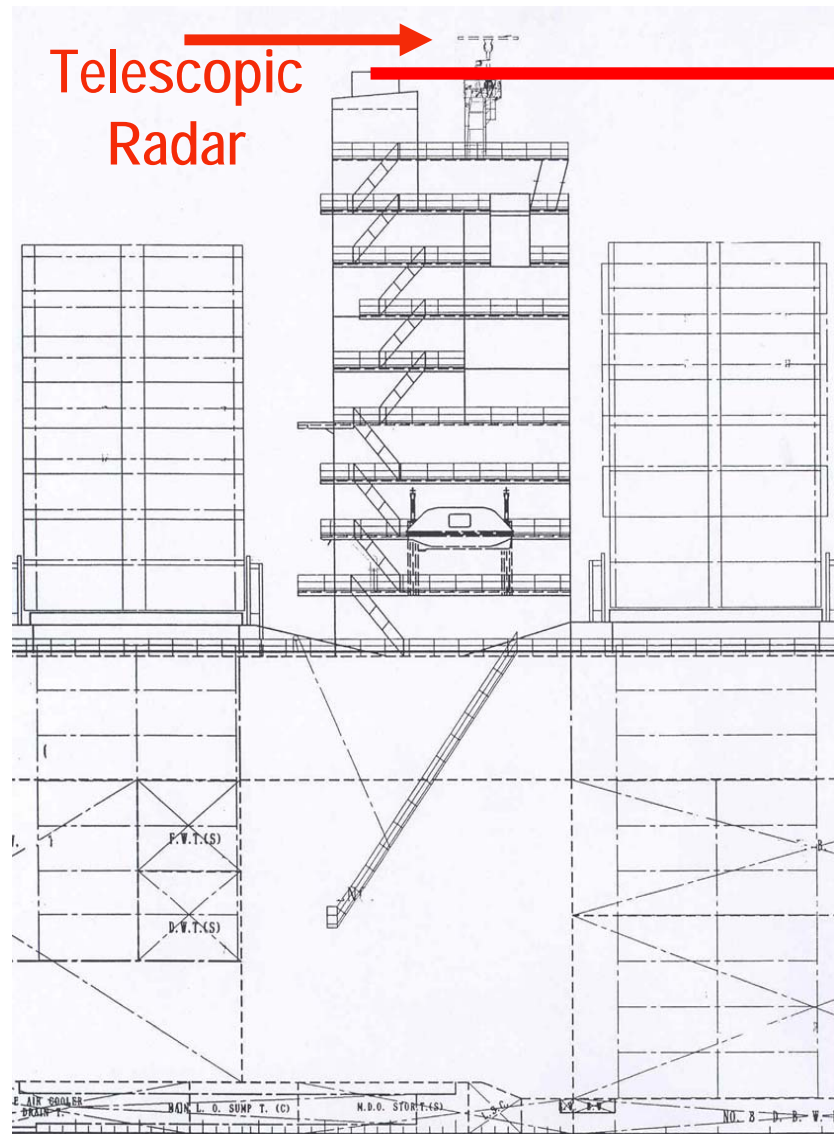


Principal Dimensions of 8200/9200 TEU Vessels



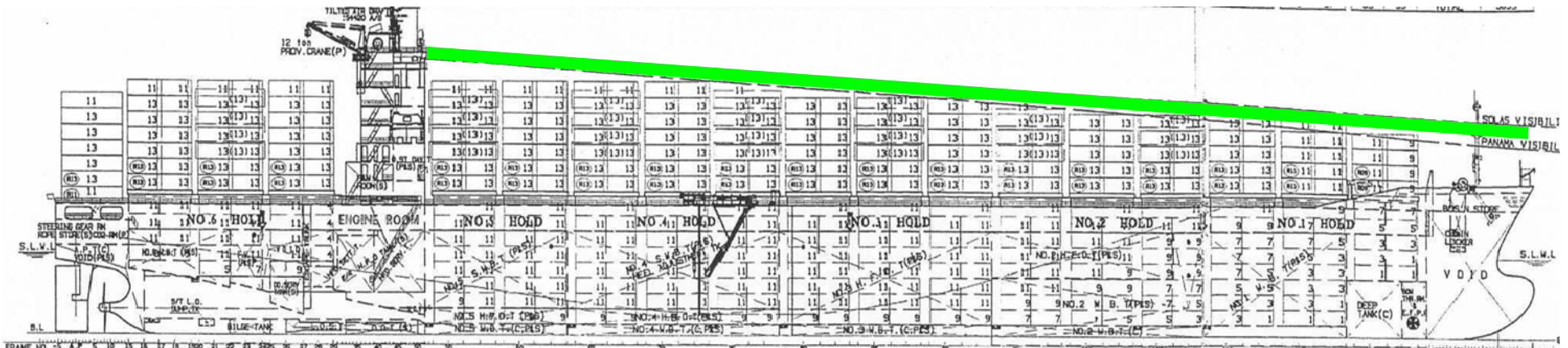
Size	LBP	Breadth	Depth	T scantling
8200 TEU	319,00 m	42,8 m	24,6 m	14,5 m
9200 TEU	321,00 m	45,6 m	27,2 m	15,0 m

Air Draught of a 9200TEU Container Ship



Ship draught	Air draught from water level
Design draught 13.0 m	53.0 m
Scantling draught 14.5 m	51.5 m
Actual draught 11.0 to 12.5 m	55.0 to 53.5 m

Close to 60% of Containers are stowed on Deck



How well can you see from the bridge?

Actual Dimensions of 9000 + TEU Container Ships

Size	10.230	9.900	9.200	9.400
L_{BP}	331,0 m		321,0 m	333,4 m
L_{oa}	347,0 m	349,0 m	336,7 m	349,1 m
B	46,0 m	45,6 m	45,6 m	42,8 m
H	27,2 m	27,2 m	27,2 m	27,3 m
T_{scant}	14,5 m		15,0 m	14,5 m
T_{design}	13,0 m		13,0 m	13,0 m
No_{zyl}	12	12	12	12

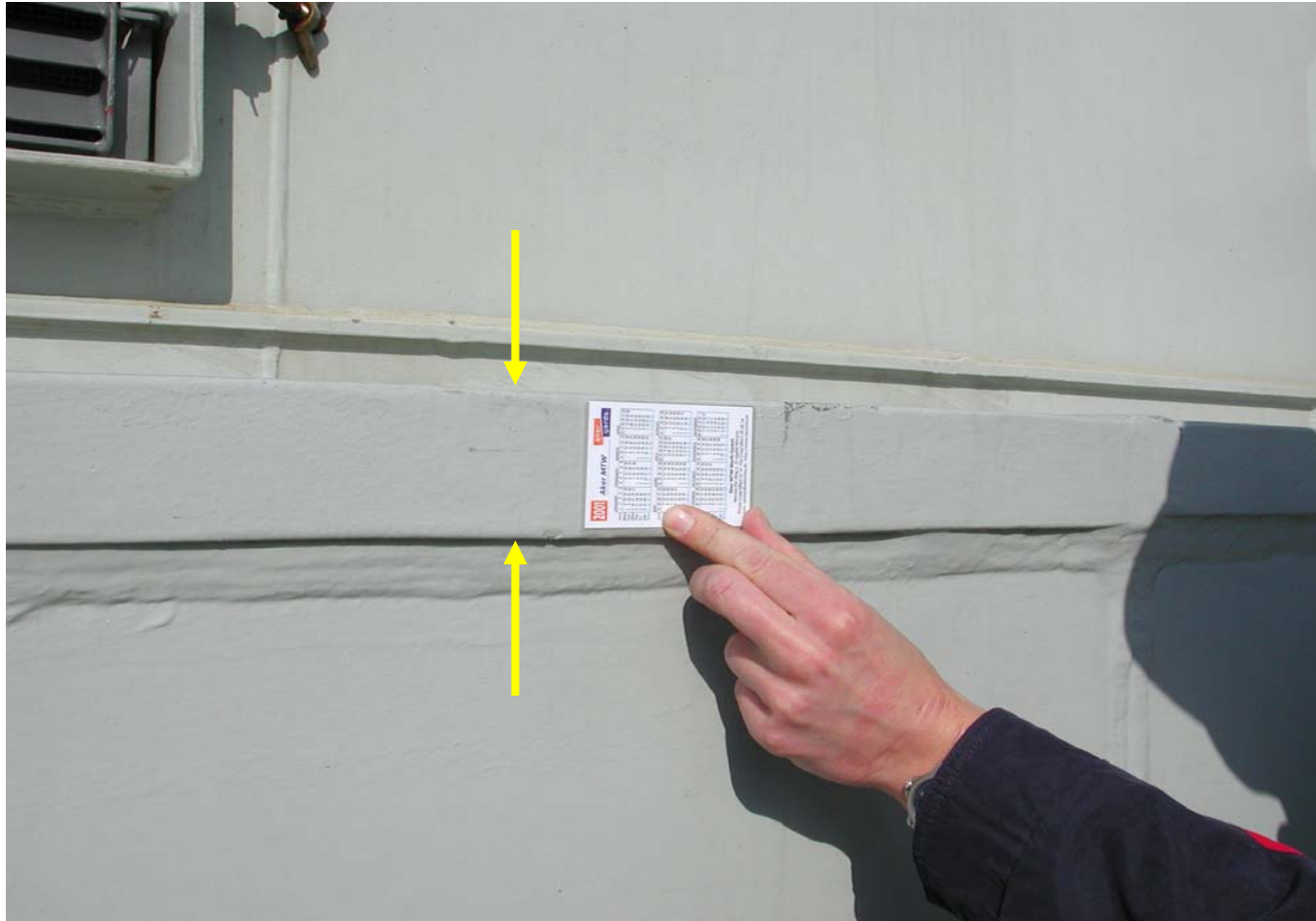
Reference Ship for Elbe/Weser Deepening

$L = 350\text{ m}; B = 46\text{ m}; T_s = 14,5\text{ m}$

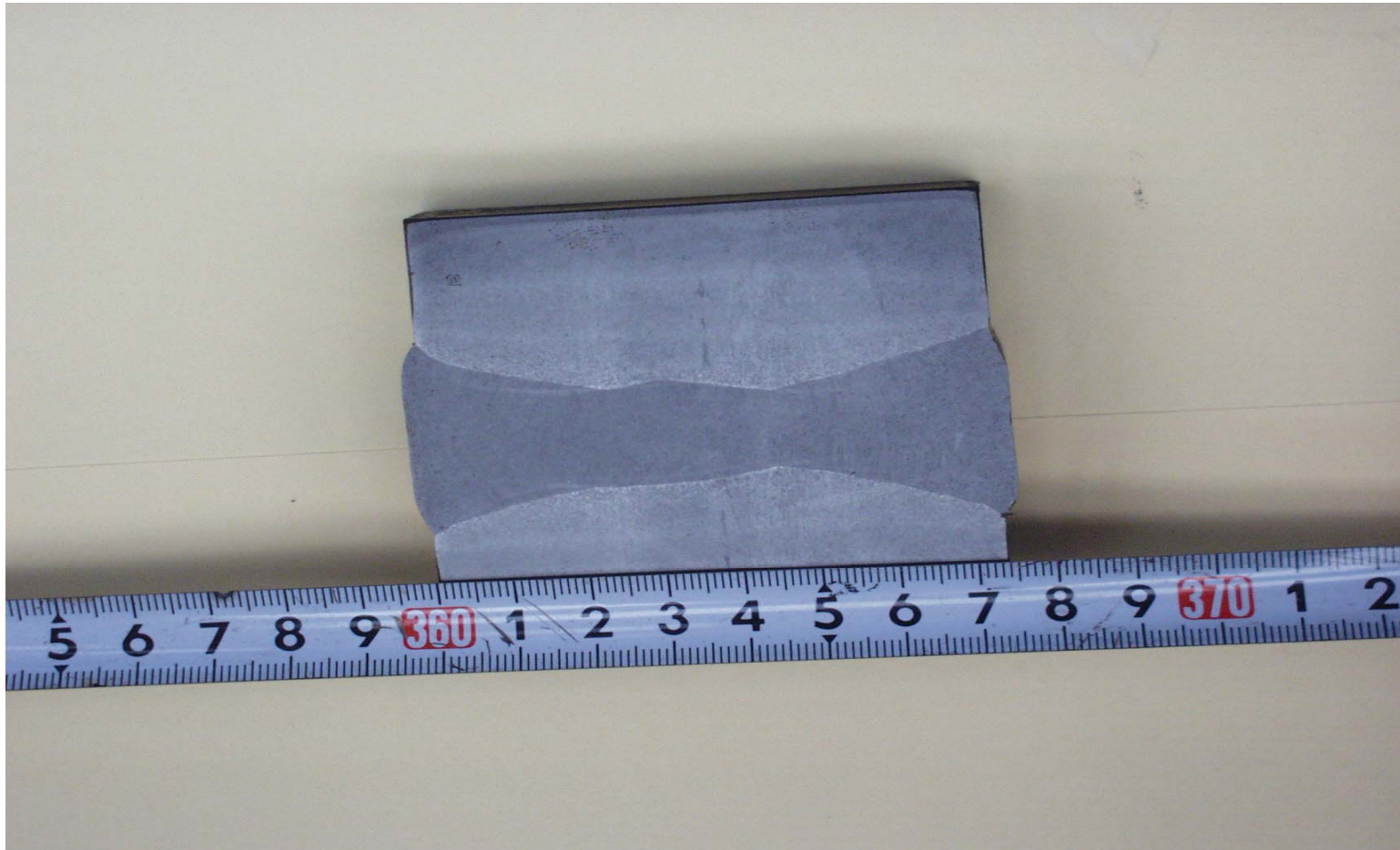
$T = 13,5\text{ m independent of tide}$



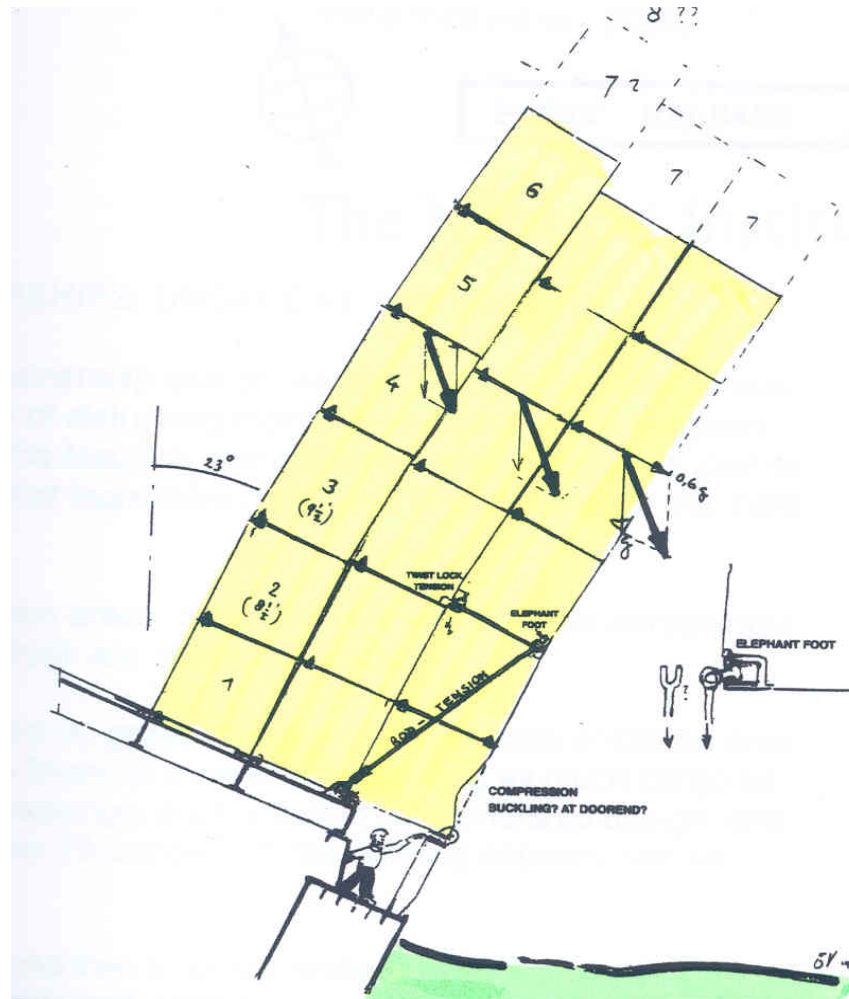
Maximum Plate Thickness up to 86 mm



Electro Gas Welding Sample



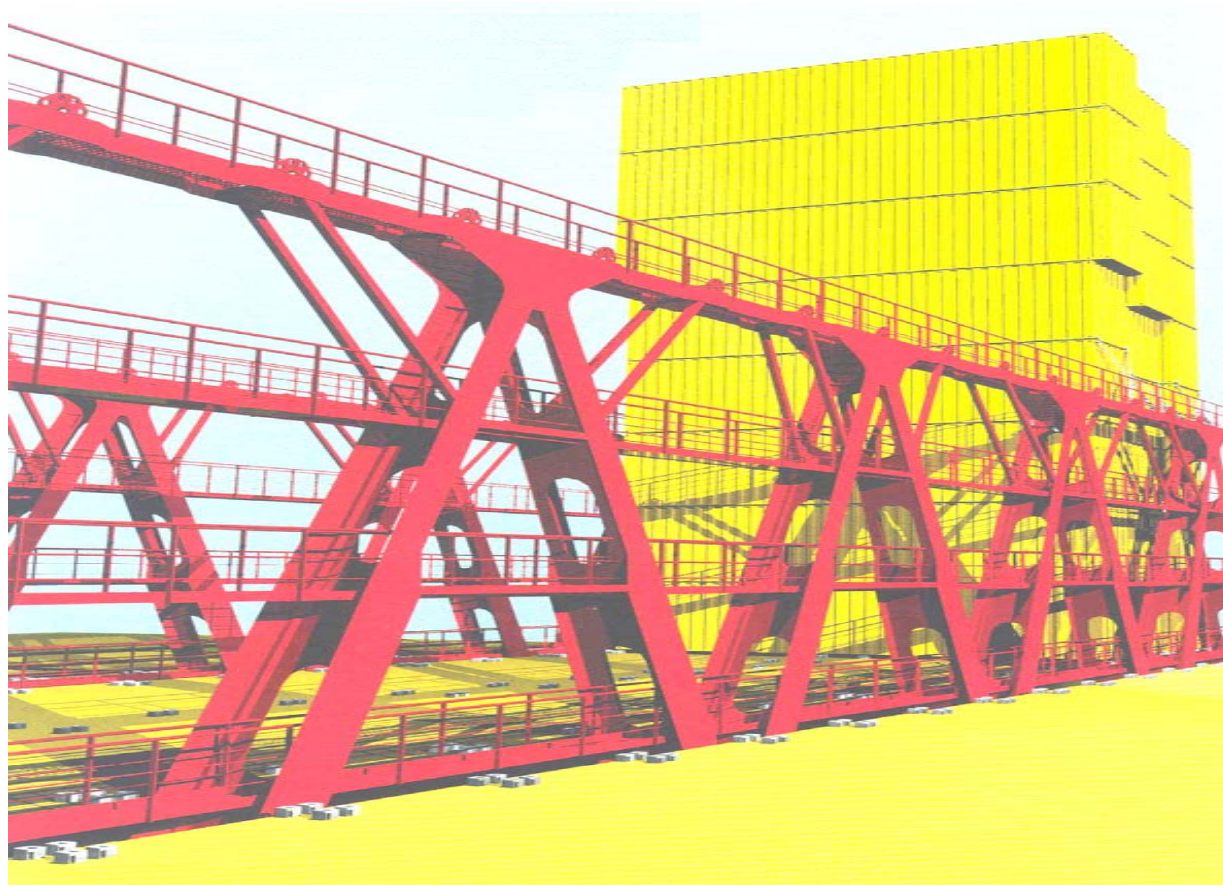
Container Stack Collapse in rolling



Lashing Bridge für 4 Tiers



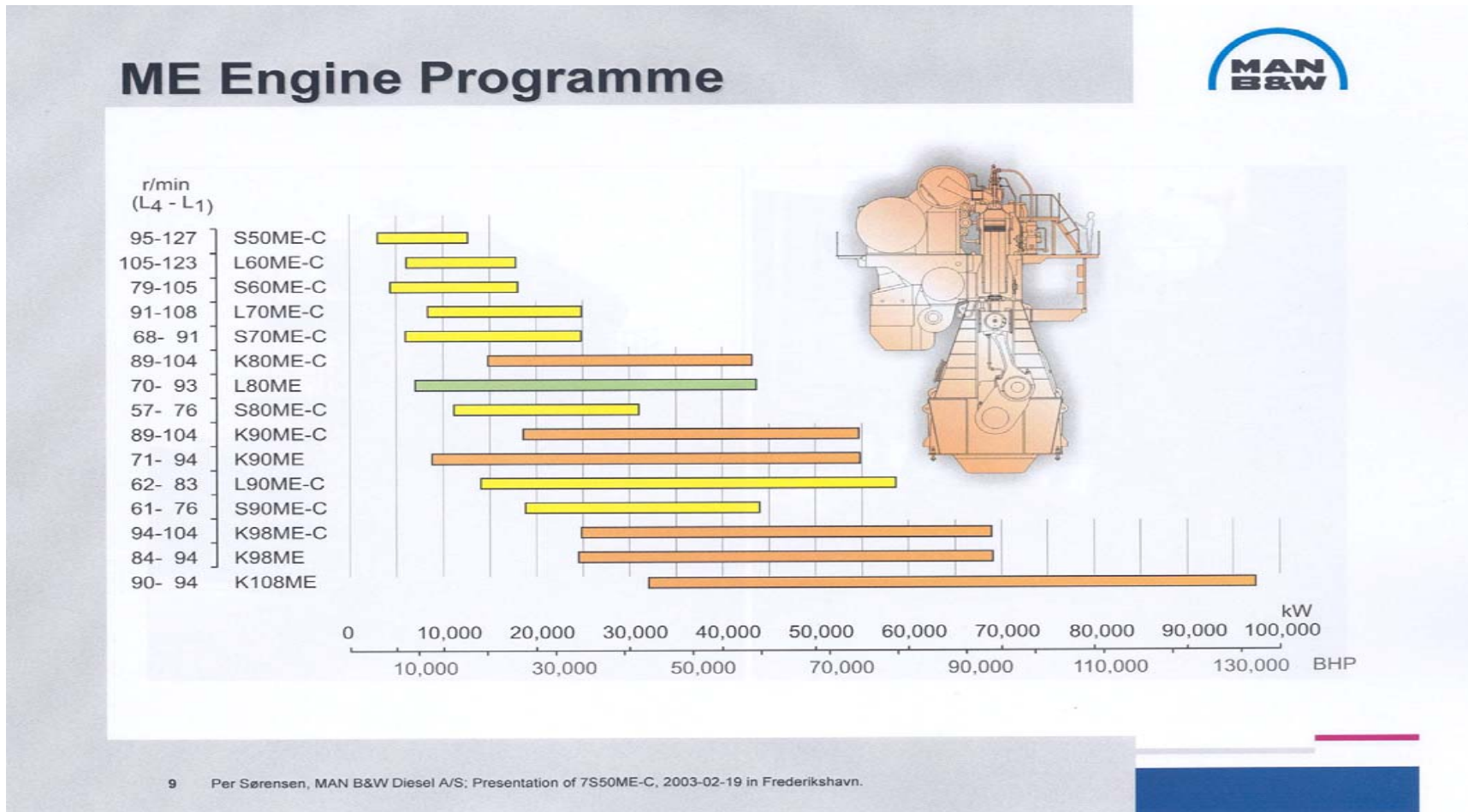
Lashing Bridge für 5 Tiers



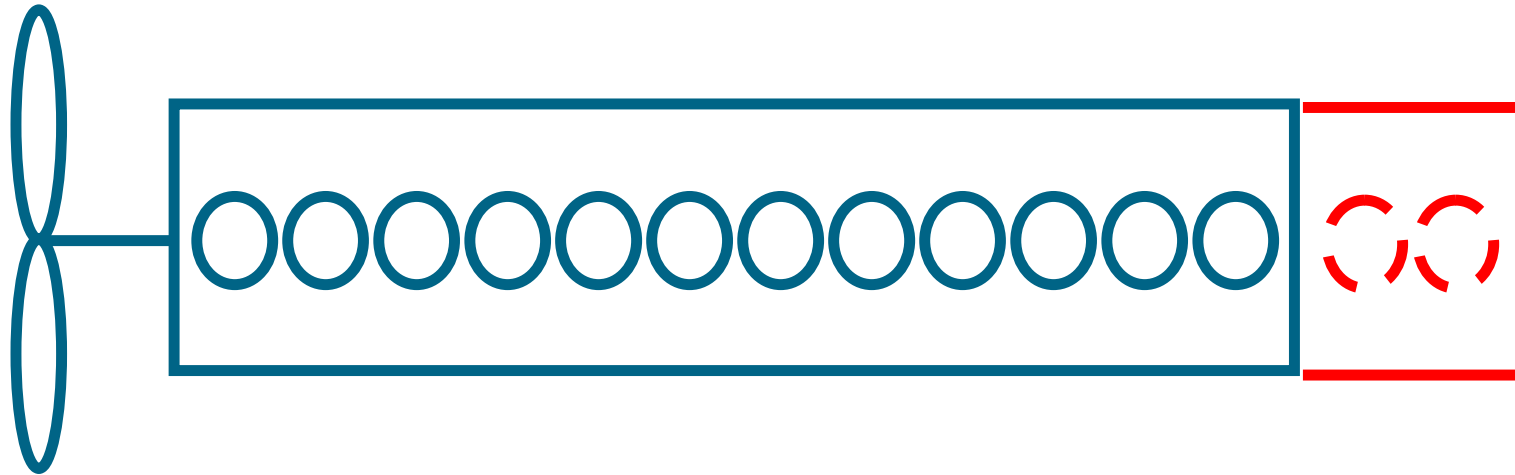
Present Limits of Propulsion Systems



Leistung Hauptmaschine



Large Main Engine



12 Cylinder

$P = 68.500 \text{ kW}$

$n = 104 \text{ min}^{-1}$

$m = 2150 \text{ t}$

$L = 24,6 \text{ m}$

14 Cylinder

$P = 80.000 \text{ kW}$

$n = 104 \text{ min}^{-1}$

$m = 2400 \text{ t}$

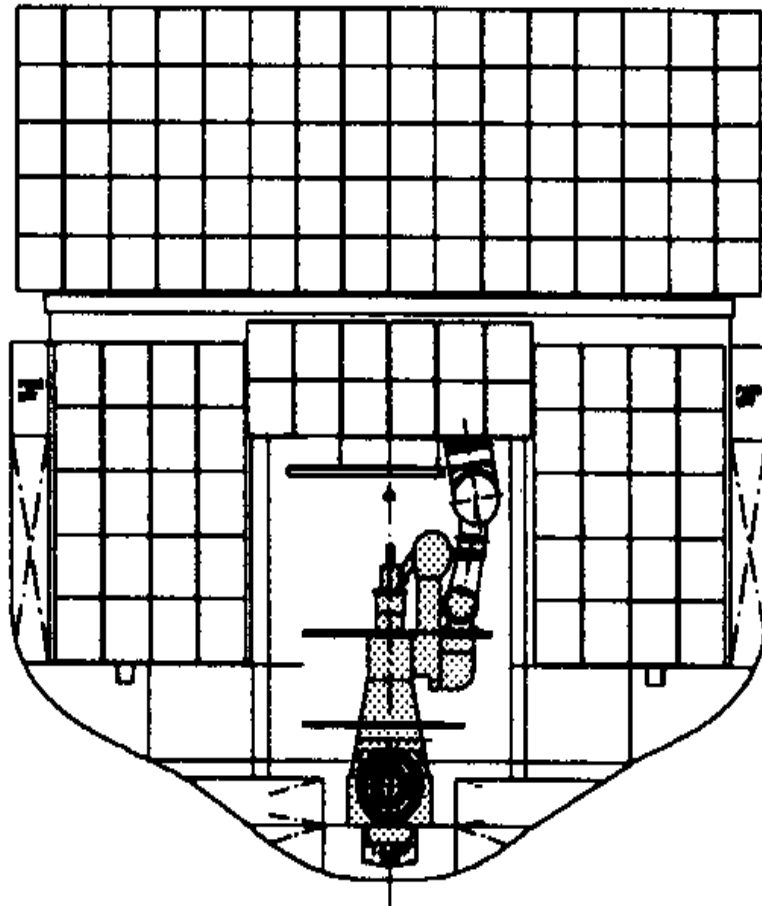
$L = 28 \text{ m}$

Current Maximum Propeller Dimensions

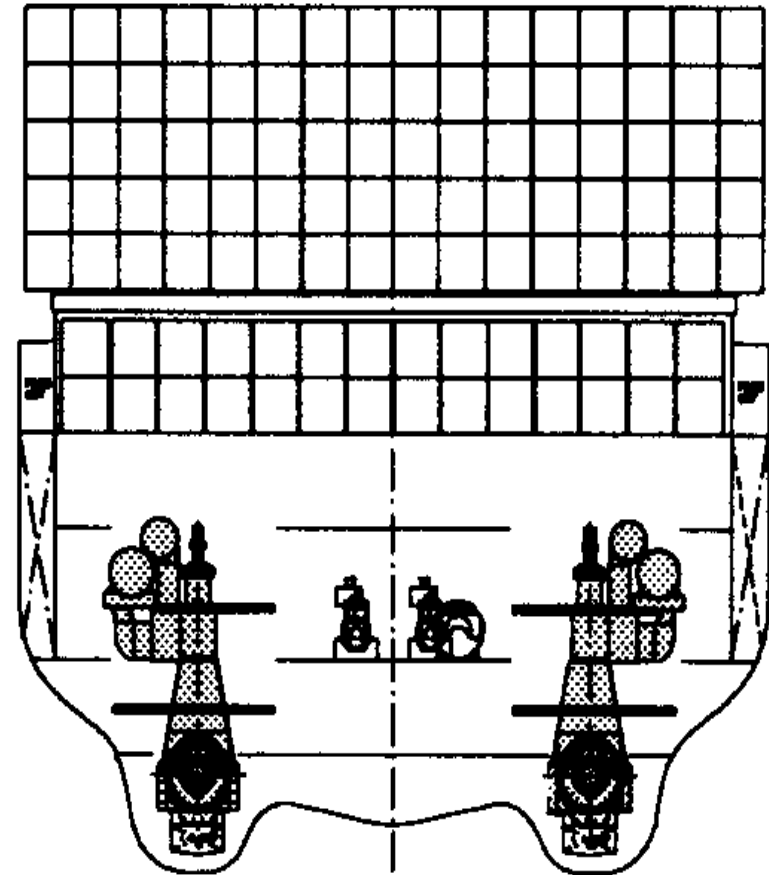
Diameter: 9,10 m Weight: 102 t Future: 135 t ?



Single or Twin Propeller Plant



14-cylinder engine



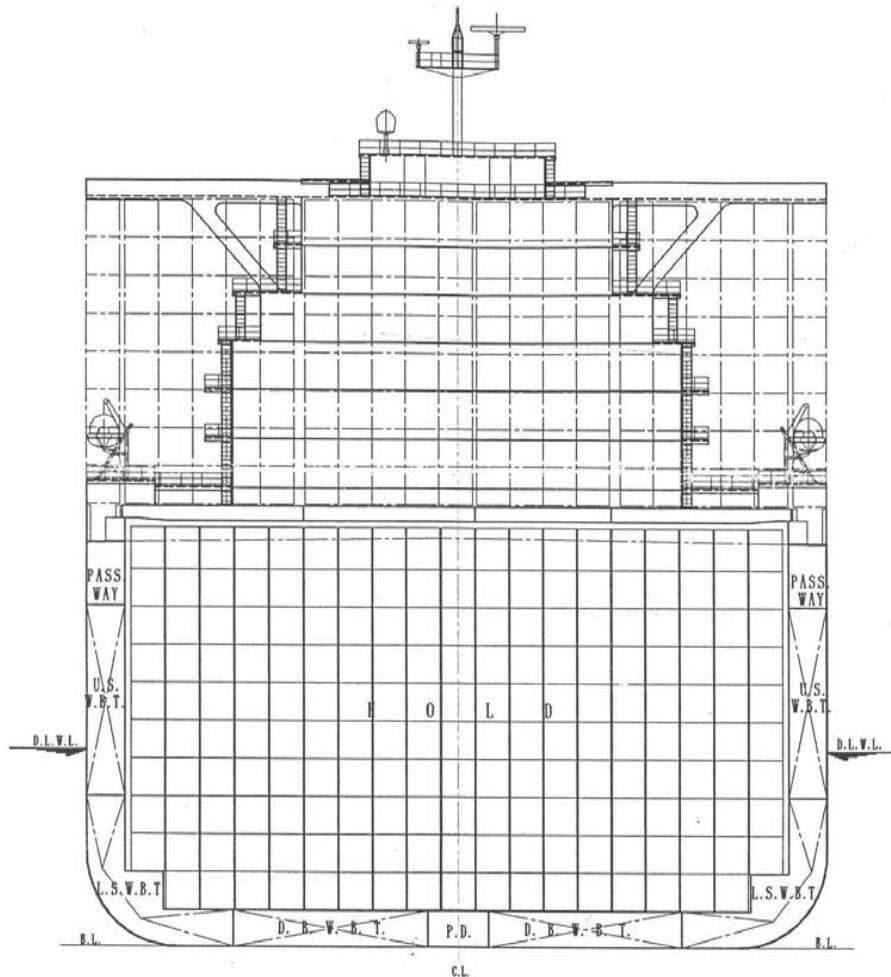
2 x 7 cylinder engine

Possible Dimensions of Future Container Carriers > 12000 TEU

L _{BP}	352 m	382 m	381 m	382 m
B	56,0 m	54,2 m	57,0 m	52,0 m
H	29,0 m	27,7 m	29,0 m	?
T _{scant}	15,0 m	15,0 m	14,7 m	16,0 m
Rows	20/22	19/21	18/22	?/20
Prop No	2	2	1/2	1

12.000 TEU Class Container Carrier

Midship Section

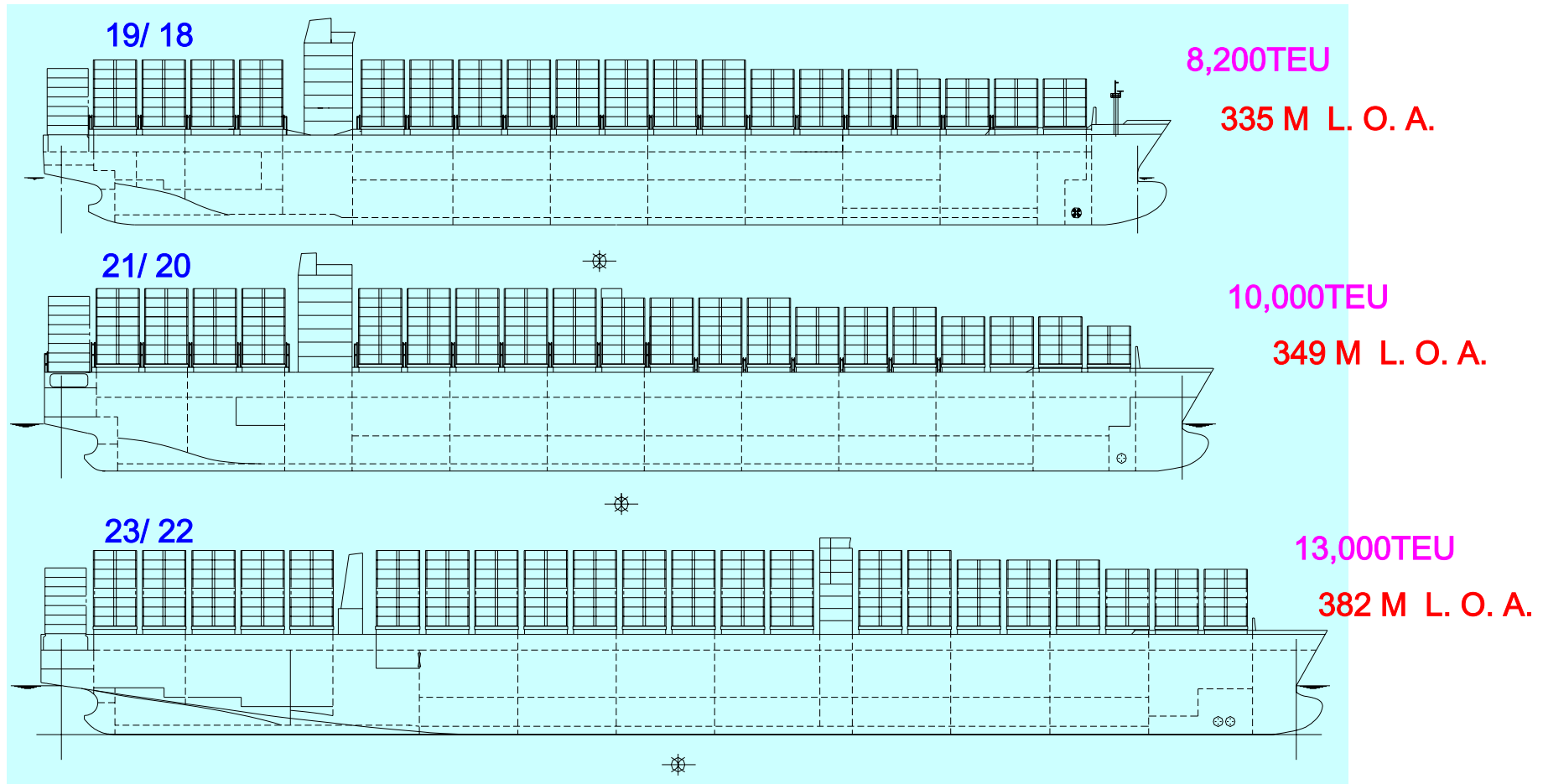


Principal Dimensions

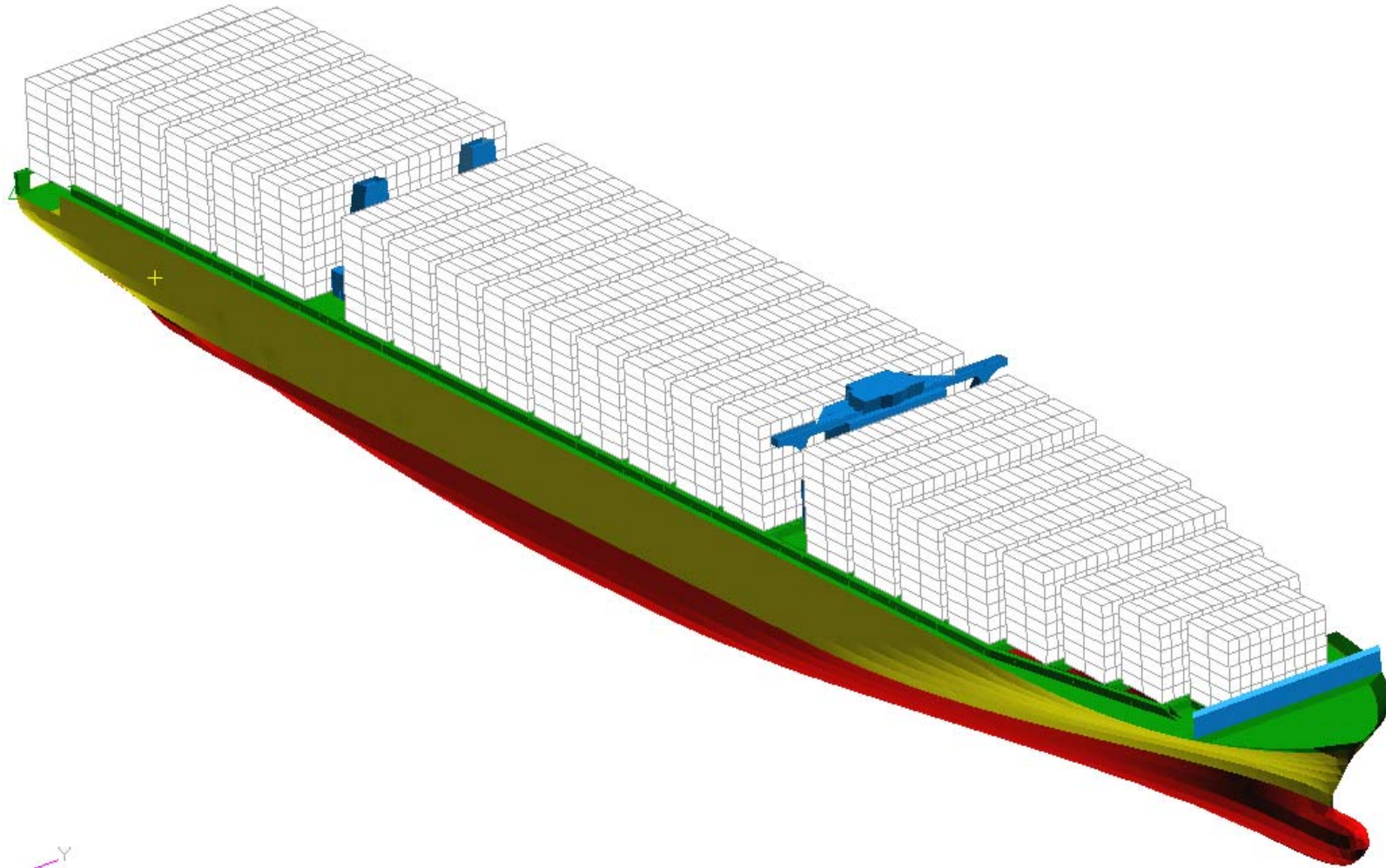
Length o.a. abt.	382 m
Length b.p.	366 m
Breadth	54.2 m
Depth	27.7 m
Draught (design)	13.5 m
Draught (scantling)	15.0 m

Comparison of Profiles (Post-Panamax)

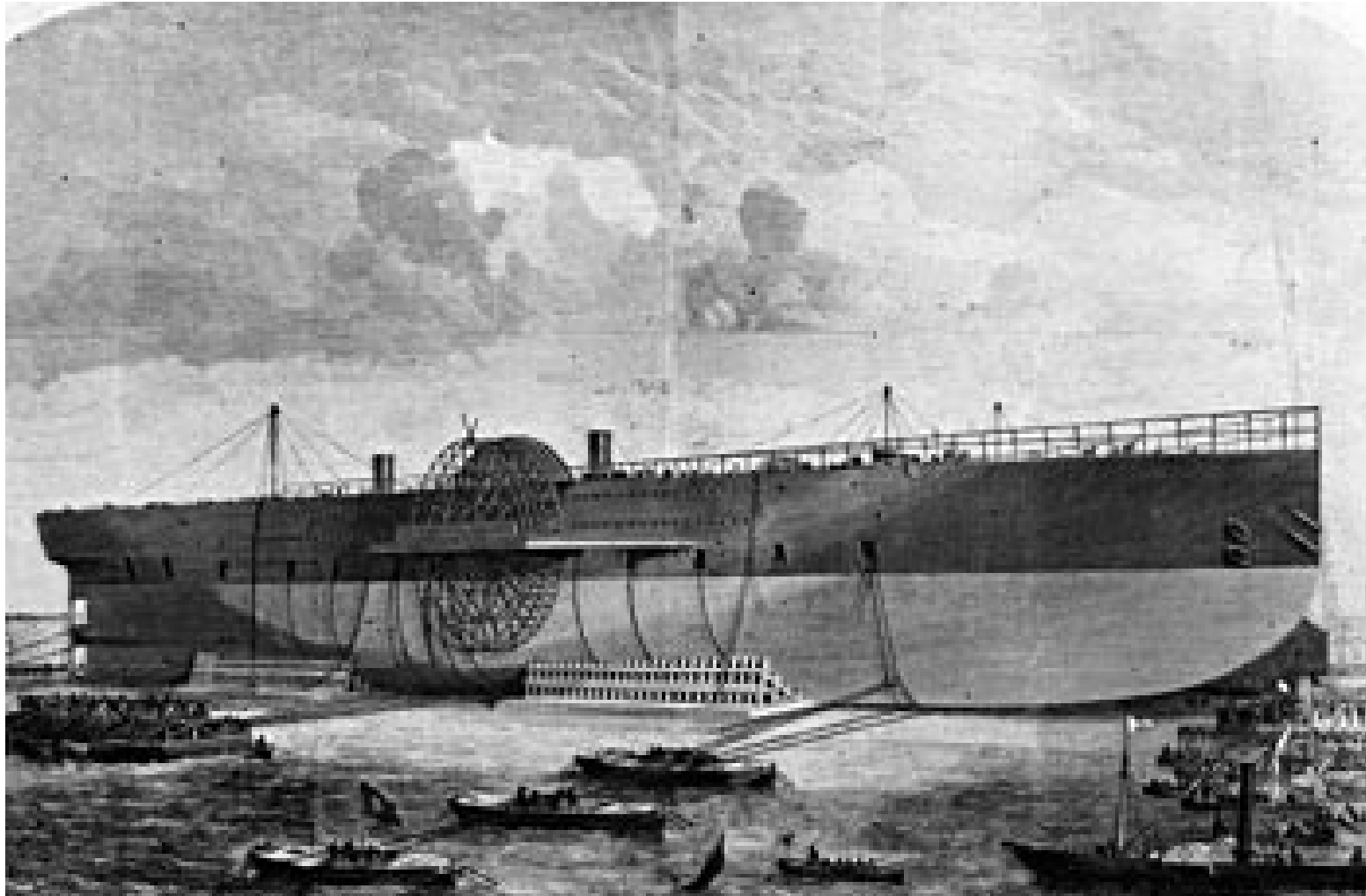
Bay Nos. (40') on deck / in hold



13.000 TEU Container Ship



Are there technical limits of the ship's size?



Largest Merchant Ship afloat
Jahre Viking 565.000 tdw
L = 424 m; B = 69 m; T = 24,6 m



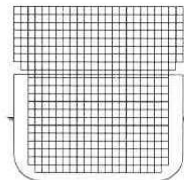
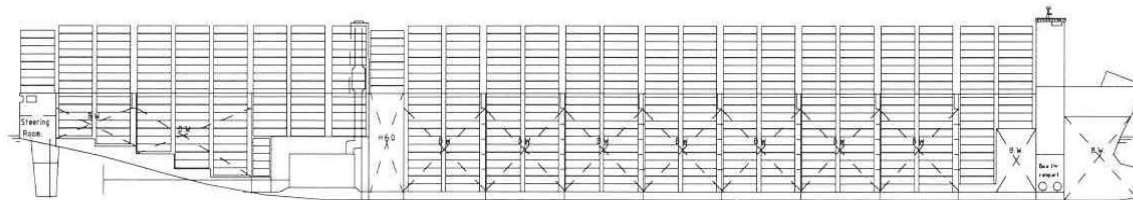
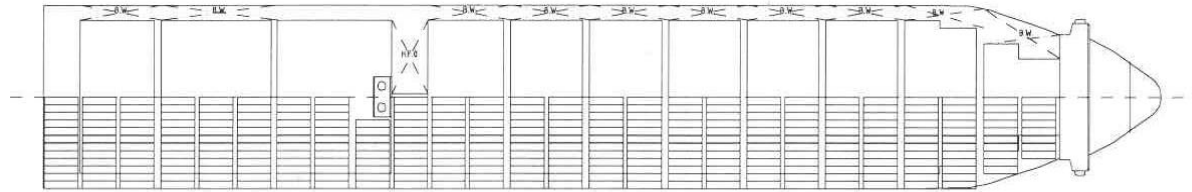
The 1.000.000 tdw Tanker

L = 492 m; B = 88 m; H = 45 m; T = 35 m



Malacca Max Container Ship

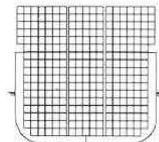
$L = 400\text{ m}; B = 60\text{ m}; H = 35\text{ m}; T = 21\text{ m}$



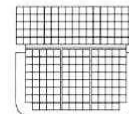
Midship section malakka-max



Midship section malakka empty



Midship section Suez-max



Maersk S-class

?



The End ?

Transportkosten Singapur/Rotterdam pro TEU

