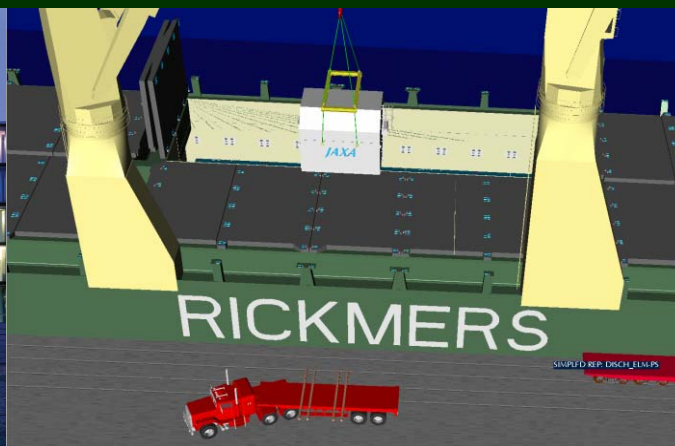




RICKMERS-LINIE



Introduction to Rickmers-Linie and Stowage and Securing of Project Cargoes



General information about Rickmers-Linie and Rickmers Group

Rickmers Milestones



1834 Shipyard founded in Bremerhaven

1859 Foundation of Rickmers Shipping Company

**1889 Three fields of business:
ricemills, shipping and shipbuilding**

1912 The company moved to Hamburg

**1920 Steamer SOPHIE RICKMERS restarted
traffic to the USA after WW I**



Rickmers Milestones



1948 The shipyard started production again after WW II

1951 SS MAI RICKMERS reopened liner service to China after World War II



1975 Rickmers-Linie and Hapag-Lloyd join forces in the service to Asia, later Rickmers-Linie becomes a subsidiary of Hapag-Lloyd

Rickmers Milestones



2009:
Rickmers 175 years

2000 Rickmers-Linie returned to family ownership, and started to expand and develop new concepts, a new fleet was ordered

2006 Opening of Rickmers (Japan) Inc.
Opening of Rickmers Ship-management (Singapore) Pte. Ltd.

2007 Opening of Rickmers (Korea) Inc.
in Seoul on 1 November

Rickmers-Linie in joint venture for
breakbulk terminal in Antwerp

Rickmers-Linie announces renewal
and expansion of fleet with
4 x 24,000 dwt,
6 x 19,000 dwt and
4 x 17,000 dwt vessels.



RICKMERS

Group Structure



RICKMERS GROUP

RICKMERS HOLDING

PACIFIC HOLDINGS

Shipowning

Liner Shipping

Services

Investments

Shipmanagement / Crewing

Rickmers Reederei

RICKMERS-LINIE

Expert Shipping

Rickmers Immobilien
(Real Estate)

Global Management (Cyprus)

Island Marine Services

**Rickmers-Linie
Belgium**

MCC Marine

ATLANTIC (80%)

POLARIS (Isle of Man)

Arctic Shipping

**Rickmers-Linie
America**

EVT

Rickmers Shipmanagement (Singapore)

Rickmers Japan

Harper Petersen
(50%)

Rickmers Marine Agency

Rickmers Korea

German Lashing
(17%)

The Fleet of Rickmers Group

70 Container Vessels

- + 8 Conbulker
- + 2 Bulk Carrier
- + 9 Multipurpose Vessels (Superflex)
- + 1 Car Carrier

= 90 Vessels in service

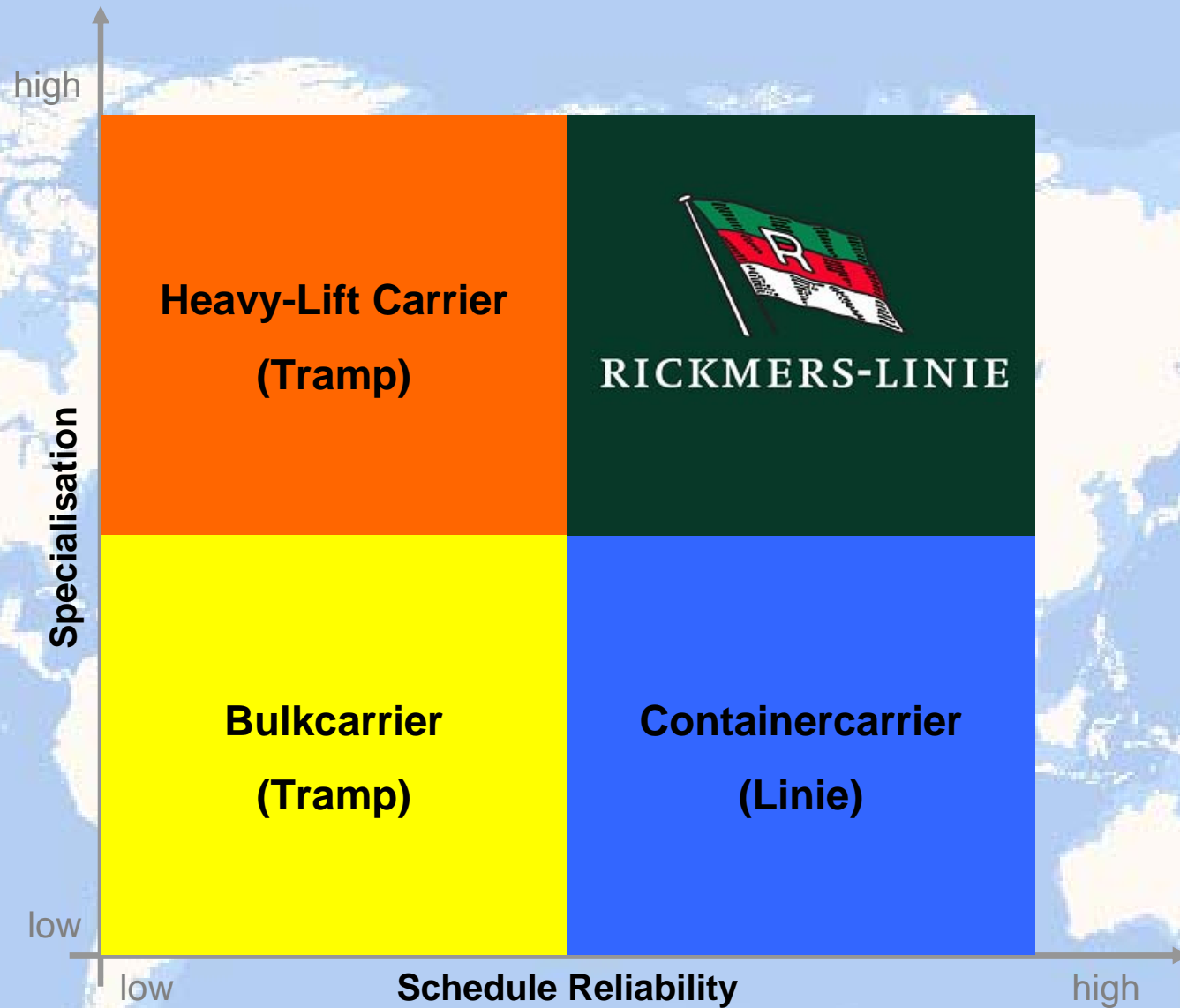
+ ca. 40 vessels on order/under construction

Including 8 x 13,100 TEU vessels

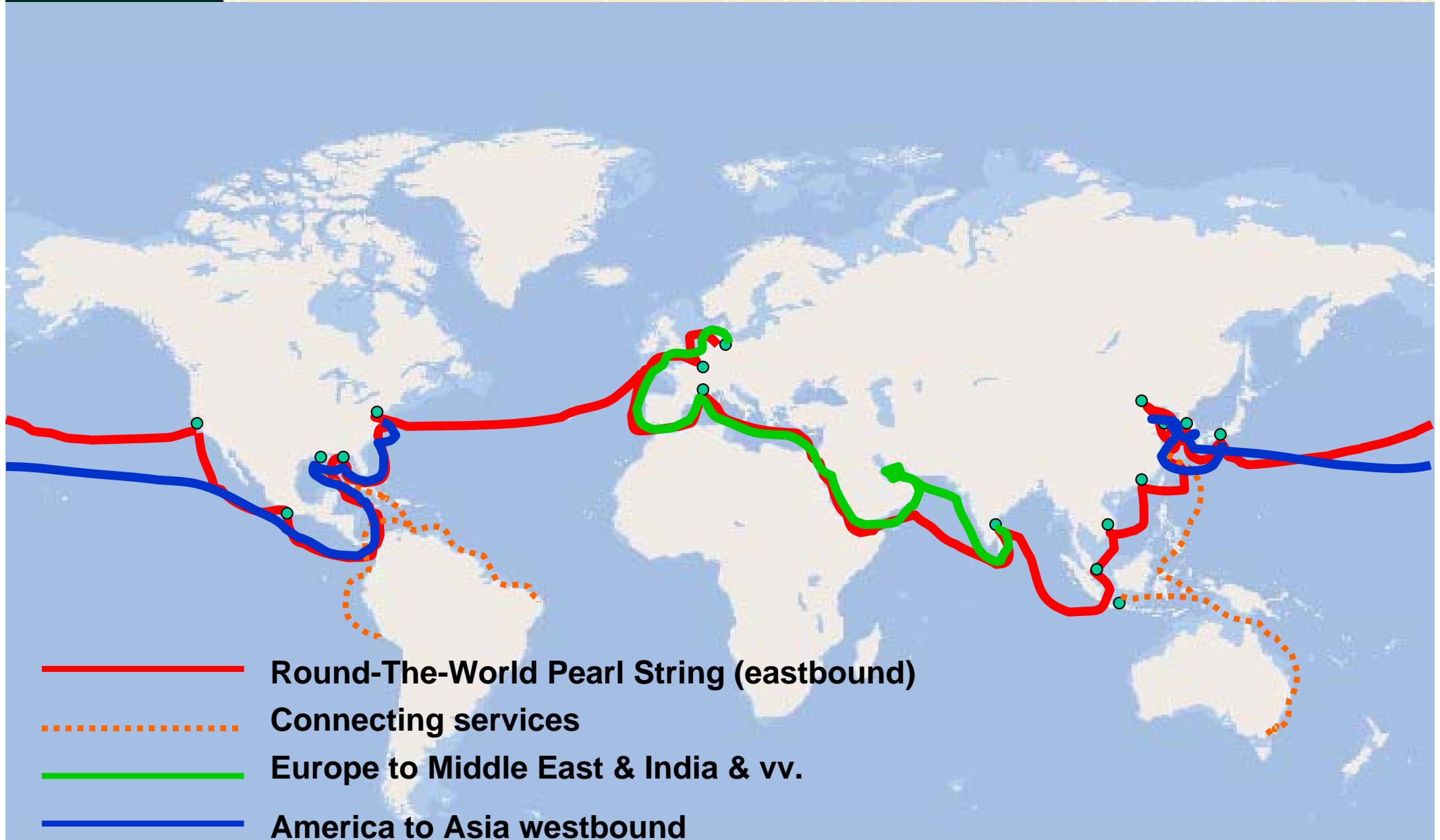
Rickmers-Linie in brief

- **more than 2.5 million FRT (2007)**
- **178 employees worldwide**
- **16 offices all over the world**
- **18 specialised vessels in permanent operation**
- **Four permanent liner services, connecting
the business areas of the world, and special sailings
on demand**

RL Position in the Market



Rickmers-Linie Route Network



The Superflex Heavy MPC Fleet

(nine vessels built 2002-2004 + tenth vessel built 2001)

RICKMERS HAMBURG

RICKMERS SHANGHAI

RICKMERS SINGAPORE

RICKMERS TOKYO

RICKMERS NEW ORLEANS

RICKMERS JAKARTA

RICKMERS SEOUL

RICKMERS ANTWERP

RICKMERS DALIAN

**** RICKMERS HOUSTON**

**30.000 dwt
2x 320 to cranes,
combinable to 640 to
19,5 knots
flexible tweendecks**

**** tenth vessel is a near sister with 200 tons lifting capacity, built 2001**



6 x 19,000 dwt Multipurpose vessels

Six vessels ordered from Tongfang, China
up to **480 tons** lifting capacity



19,000 dwt – 2 x 240 t crane combinable to lift 480 tons

Length 148 m – Breadth 23.4 m

Adjustable tweendecks – Speed 16 knots

4 x 17,000 dwt Multipurpose vessels

Four vessels ordered from Xinshun, China
up to **300 tons** lifting capacity



17,000 dwt – 2 x 150 ton crane combinable to lift 300 tons, plus one 80 tons crane

Length 144 m – Breadth 22.8 m

Speed 16 knots

4 x 24,000 dwt Multipurpose vessels

Four vessels ordered from Wuhu Xinlian, China
up to **700 tons** lifting capacity



24,000 dwt – 2 x 350 ton crane combinable to lift 700 tons, plus one 100 tons crane

Length 175 m – Breadth 26,5 m

Speed 18 knots

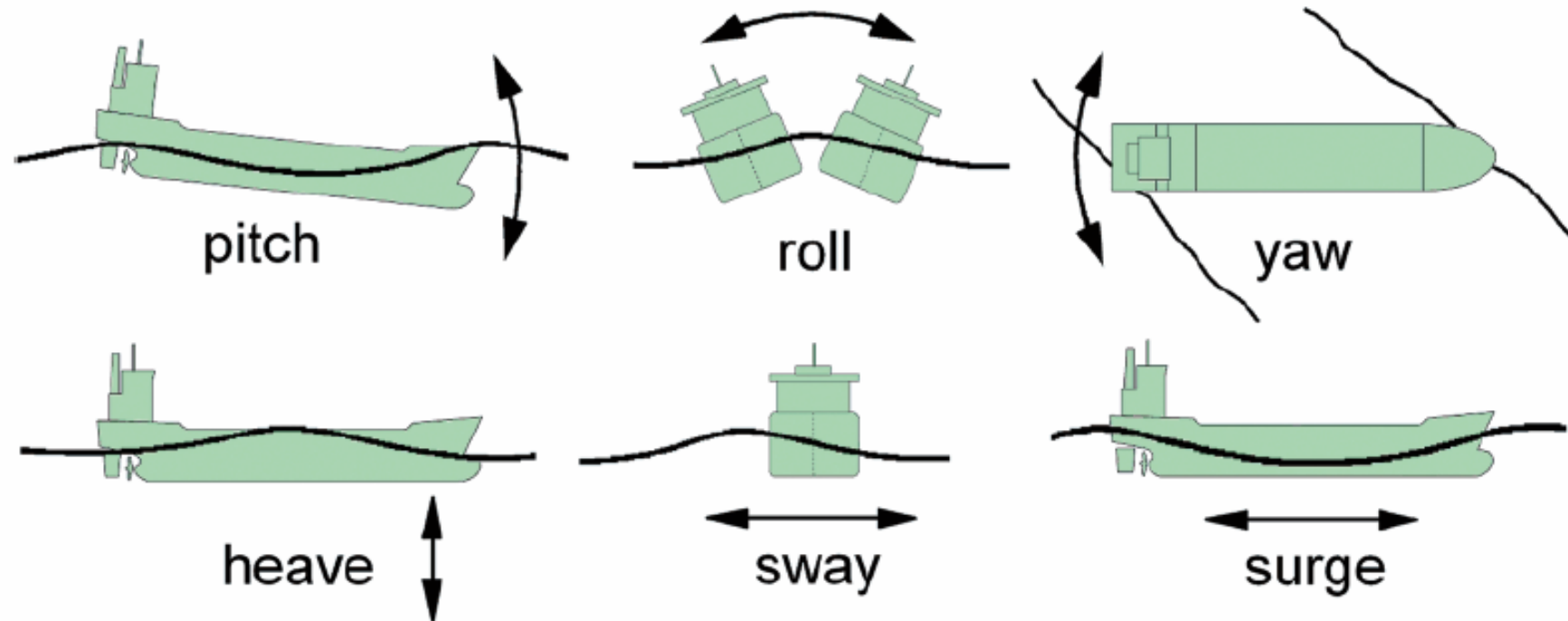
Stowage and Securing of Project Cargo



Opening



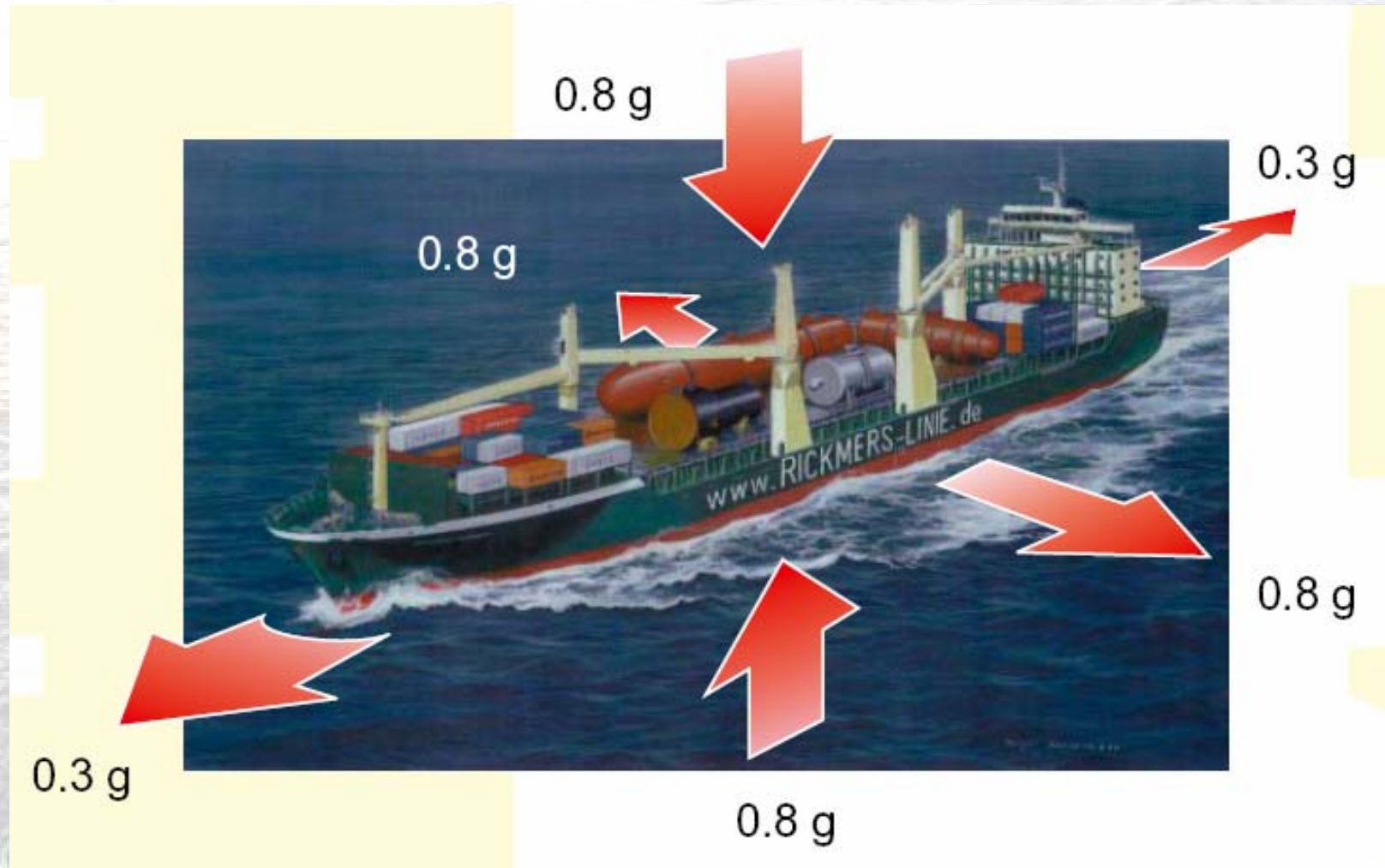
Physical Dynamics



© RICKMERS

Figure 1.2: Six freedoms of motion

Physical Dynamics



150ts x 0,8= 120ts → weight range 30 tons to 270 tons !!!

1.0 g approximate full break of a car

Safe Transport

➤ Lifting

➤ Bedding

➤ Lashing

➤ Ricosys

✓ Center of Gravity

✓ Lifting Angles

✓ Lifting Points/Areas

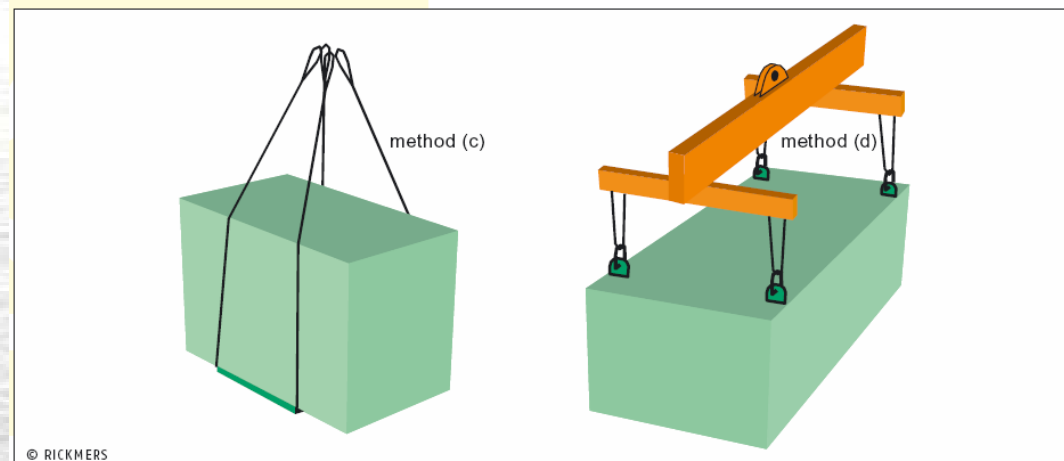


Figure 2.1.2: Lifting methods (c) and (d)

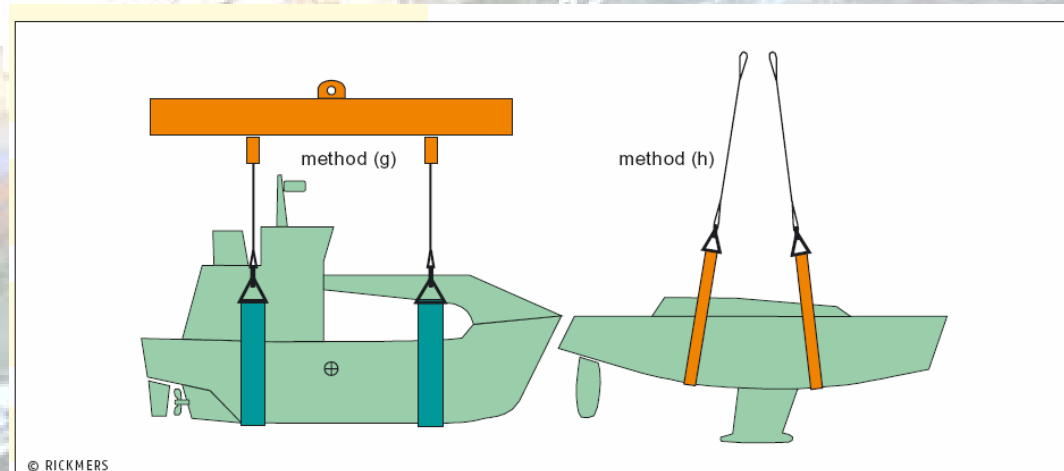


Figure 2.1.4: Lifting methods (g) and (h)

Bedding

PSL

Permissible Surface Load

Rickmers RTW Vessels

Tweendeck panels : 4 ts per sqm

Tanktop hold 2-4 : 22 ts per sqm

Tanktop hold 1+5 : 13,75 ts per sqm

Bedding

Foot Print



250 ts/sqm

Bedding

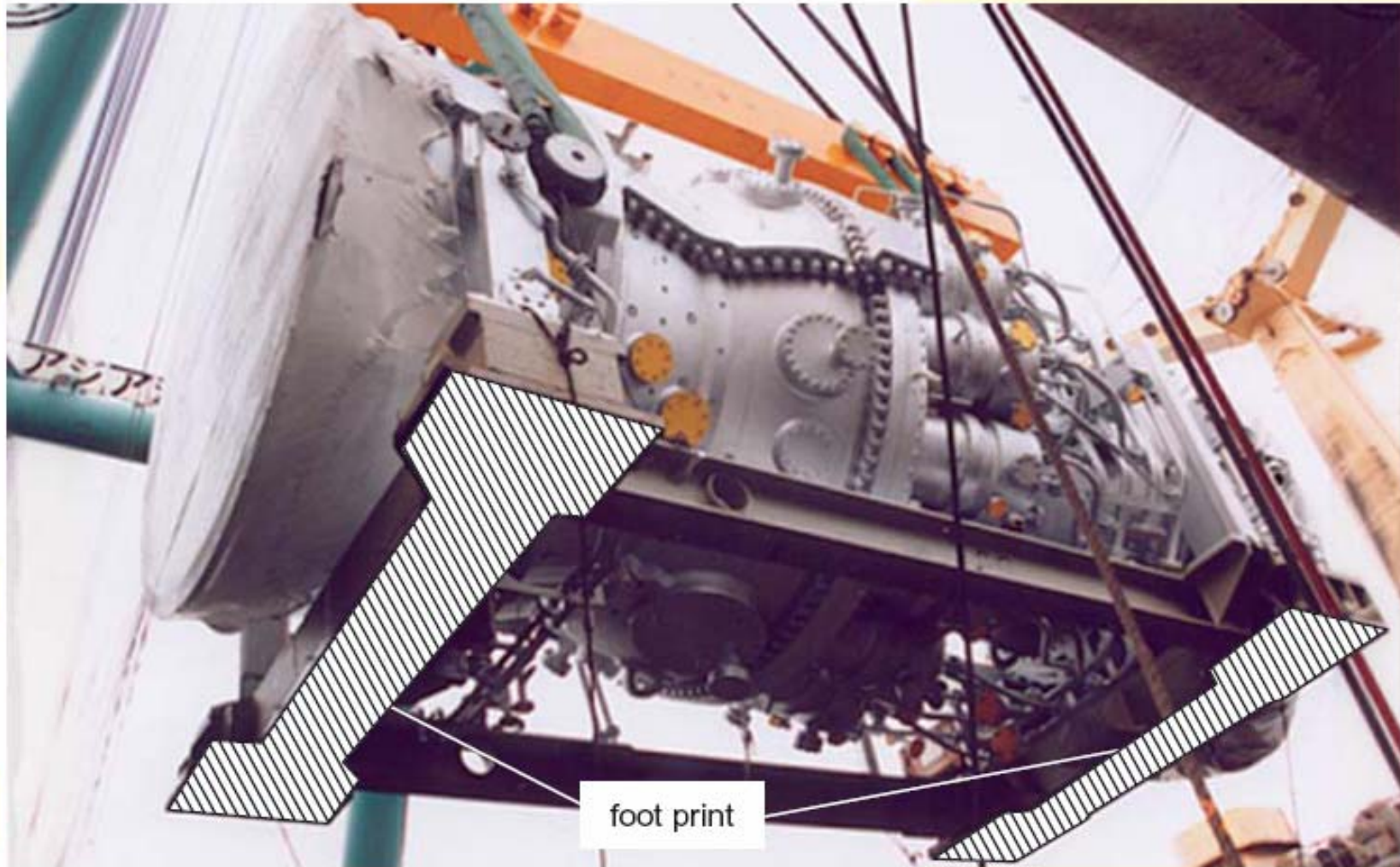


Figure 2.2.1: "Foot print" of a heavy cargo unit

Bedding

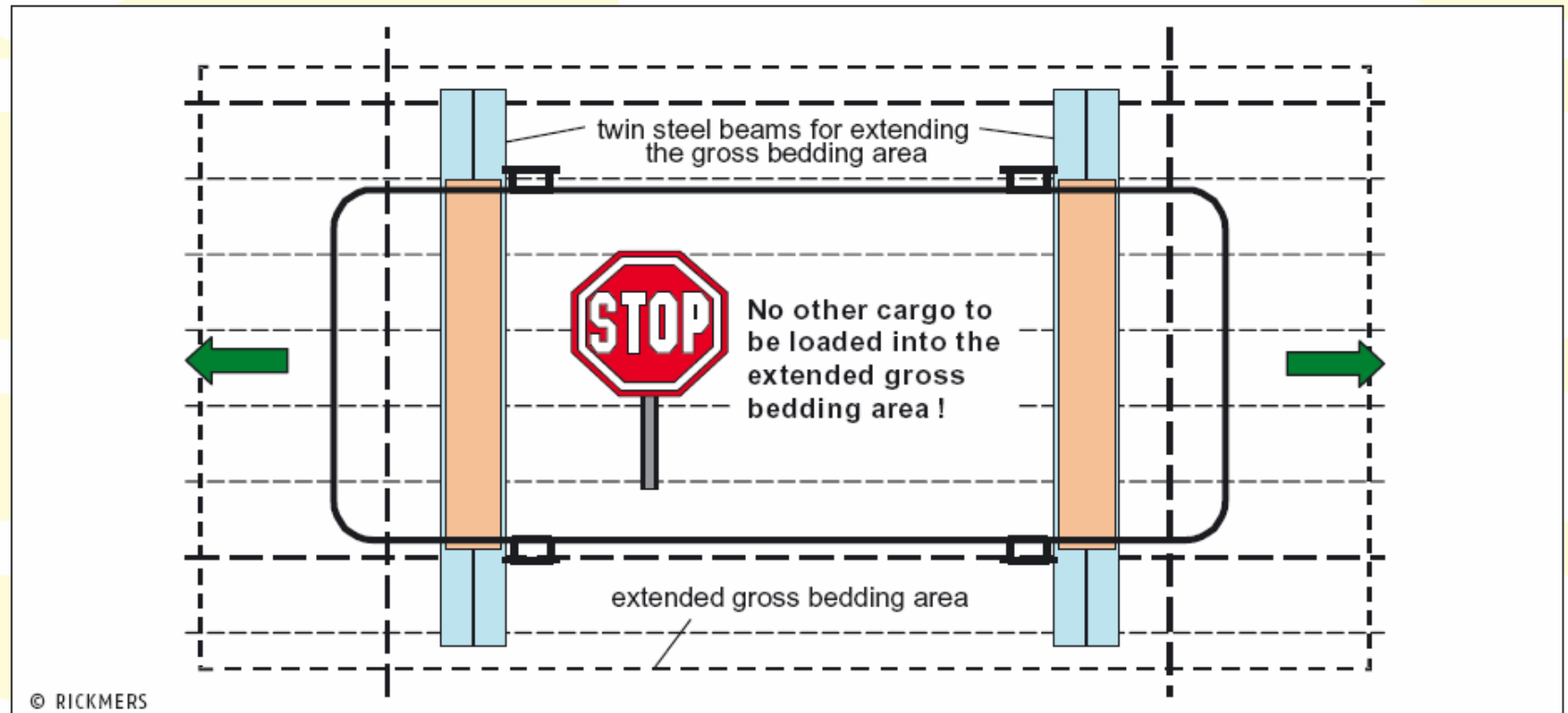


Figure 2.2.3: Extension of gross bedding area (top view)



Figure 2.2.9: H-beam bedding system of "Rickmers Hamburg-Class"



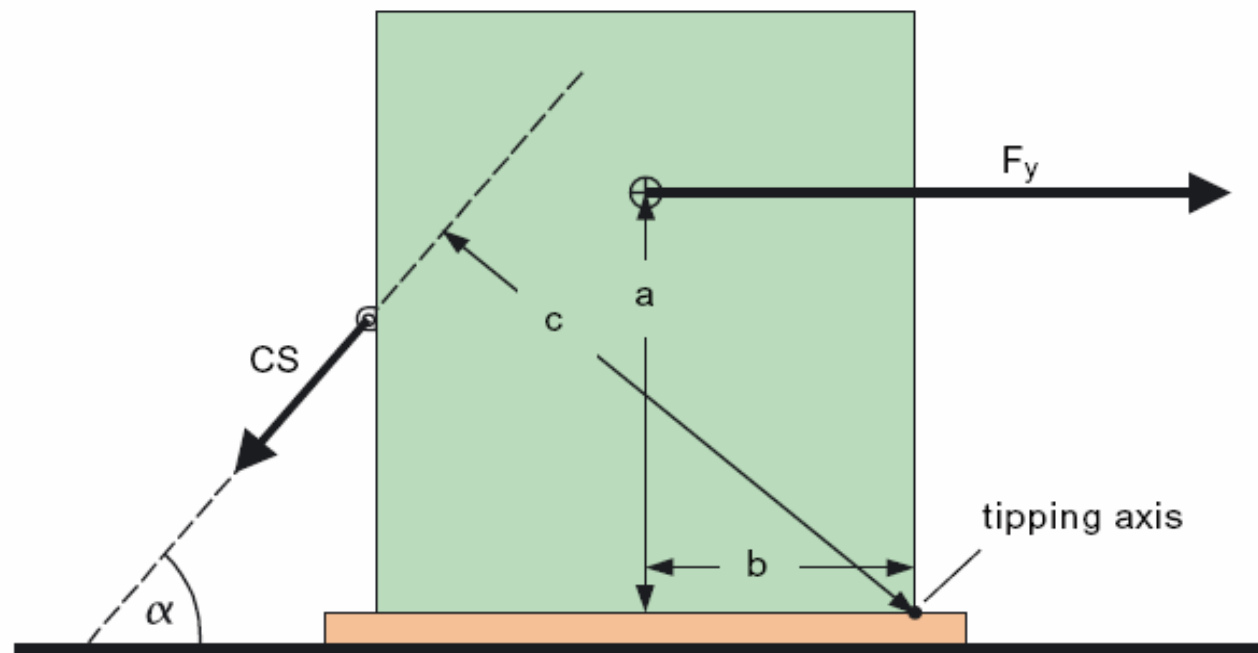
Lashing

Friction

- wooden dunnage,
friction coefficient
wood/steel $> 0,3$
- rubber mats $> 0,7$

**For safety reasons RL counts 0,3 on
rubber mats**

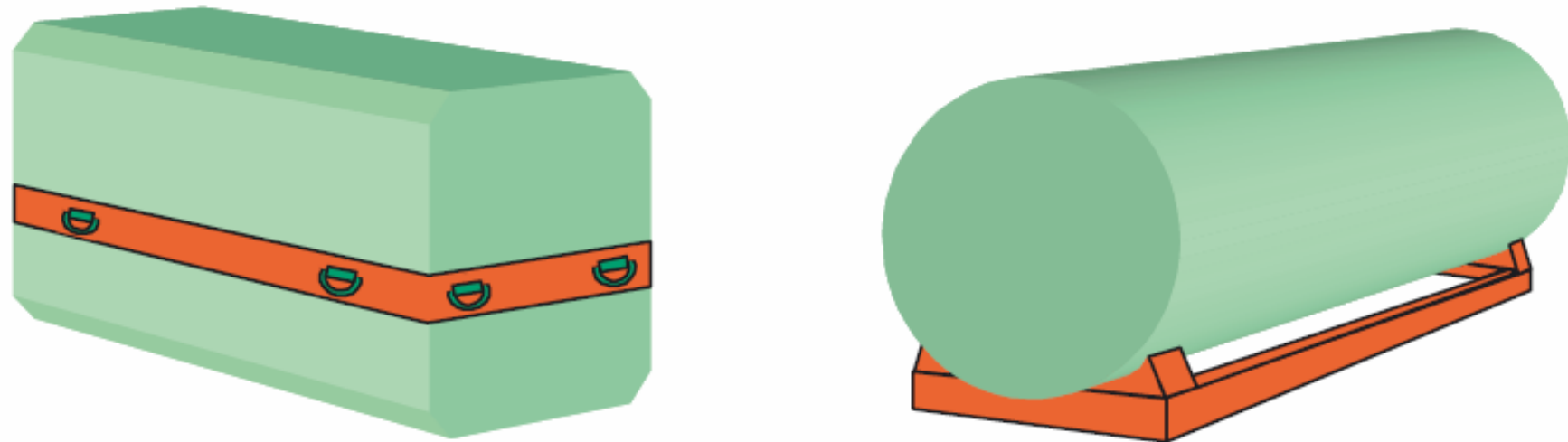
Lashing



© RICKMERS

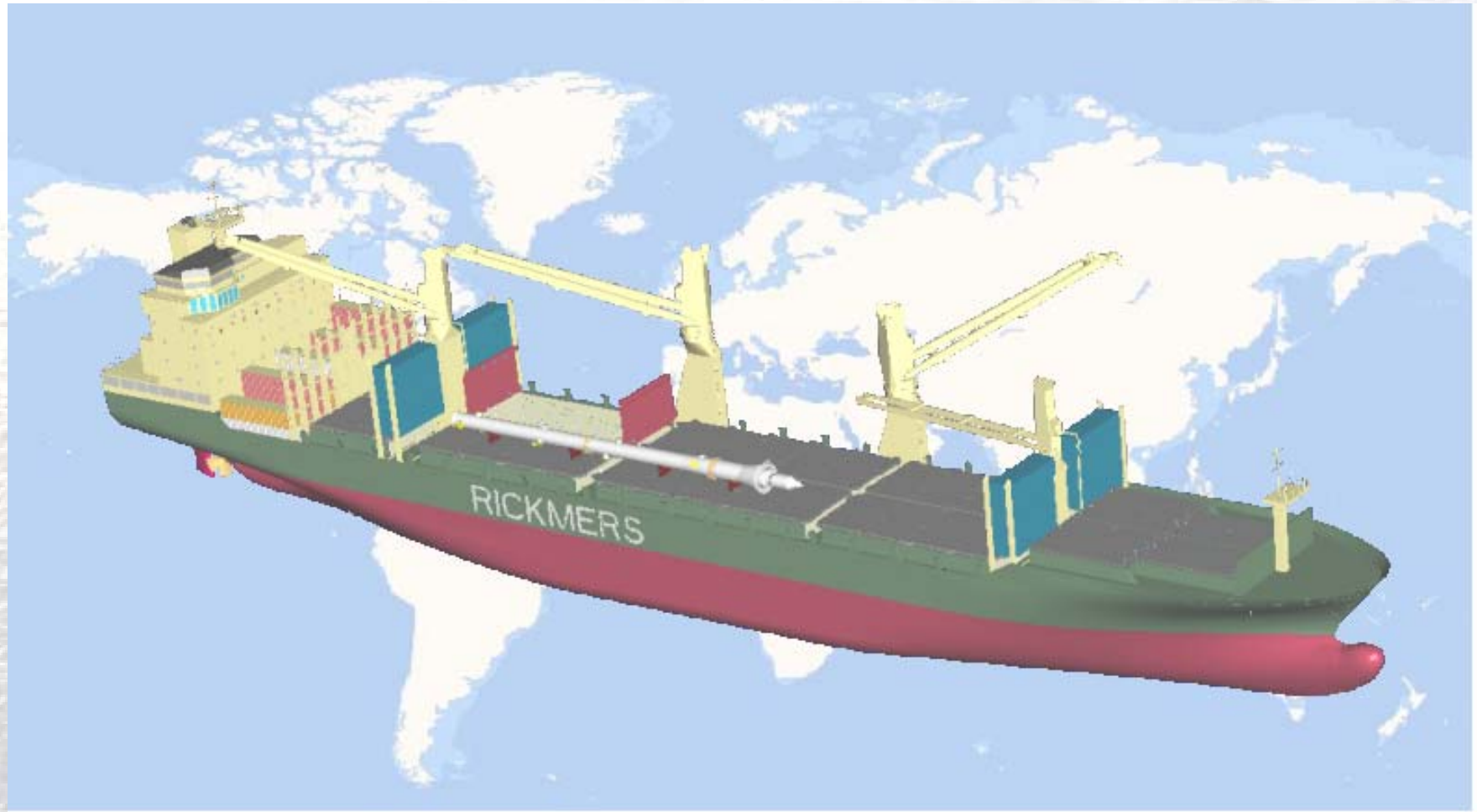
Figure A 3.1: Balance of forces and moments

Lashing



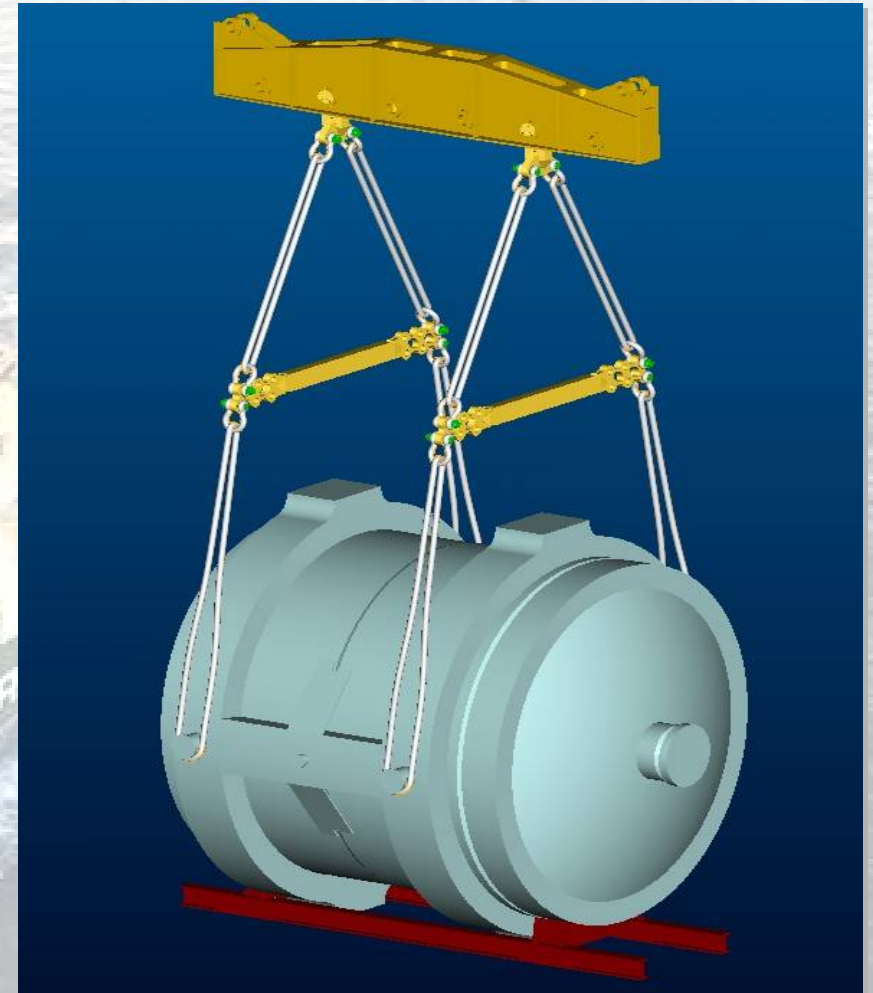
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Figure 1.6: "Strong belt" and "strong foot" for lashing and shoring



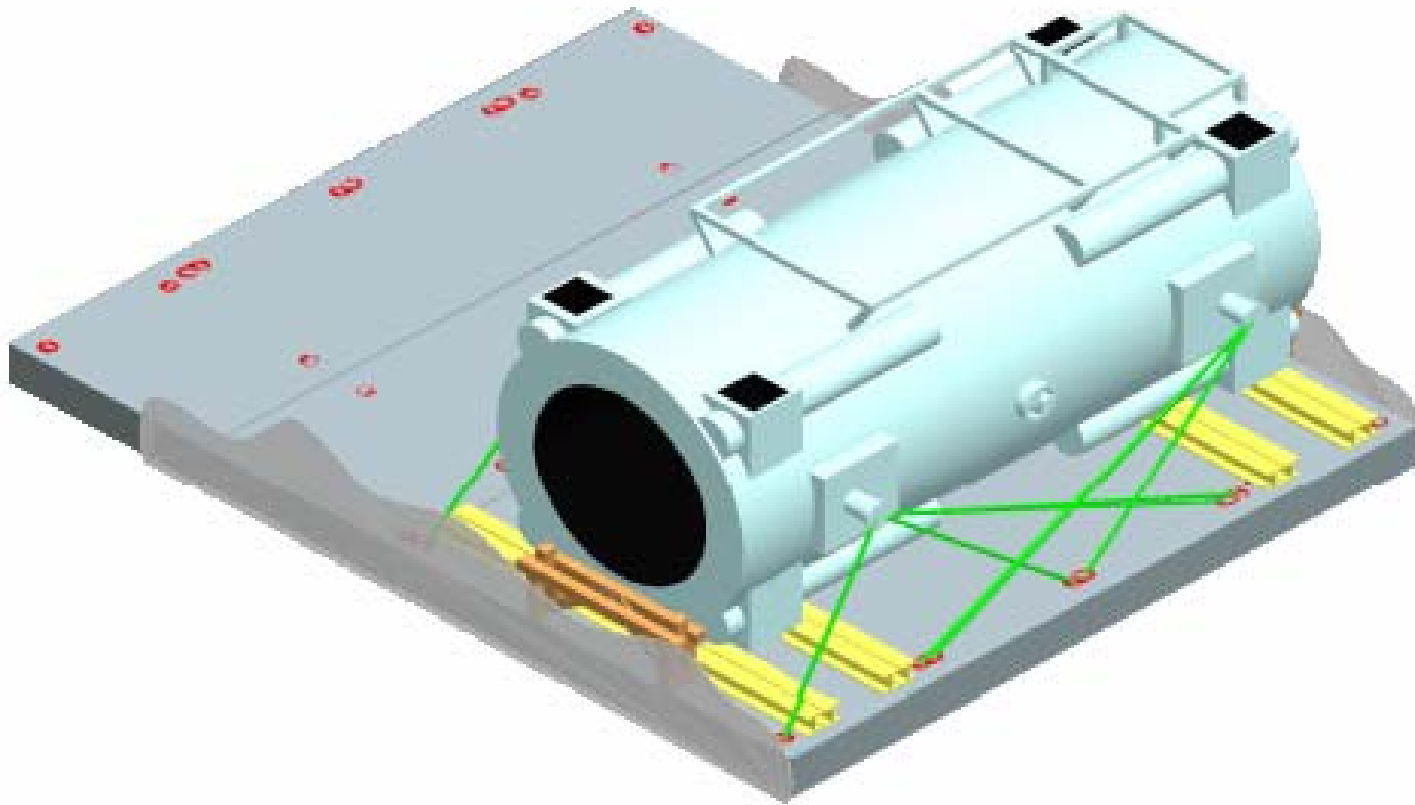
Rickmers Cargo Operations Simulation System

- Library of lifting equipment: traverse, spreader, chains, slings etc.
- Method Statements



RICOSYS Bedding

Configuration of Bedding

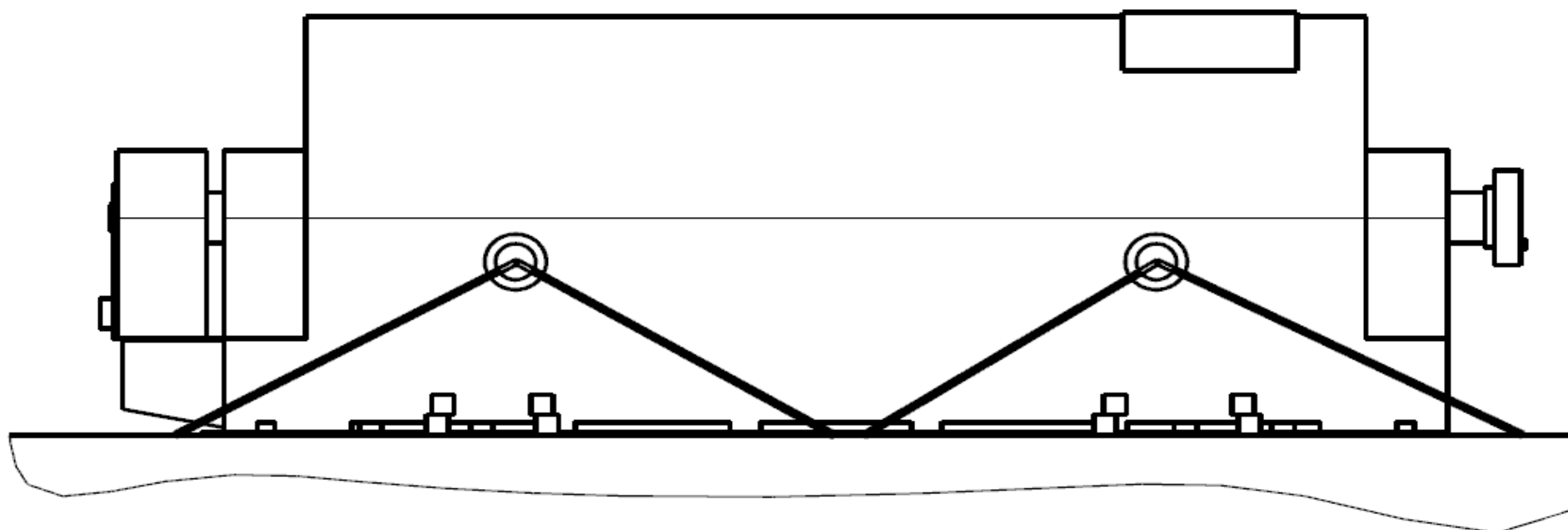


Securing Arrangement - Overview

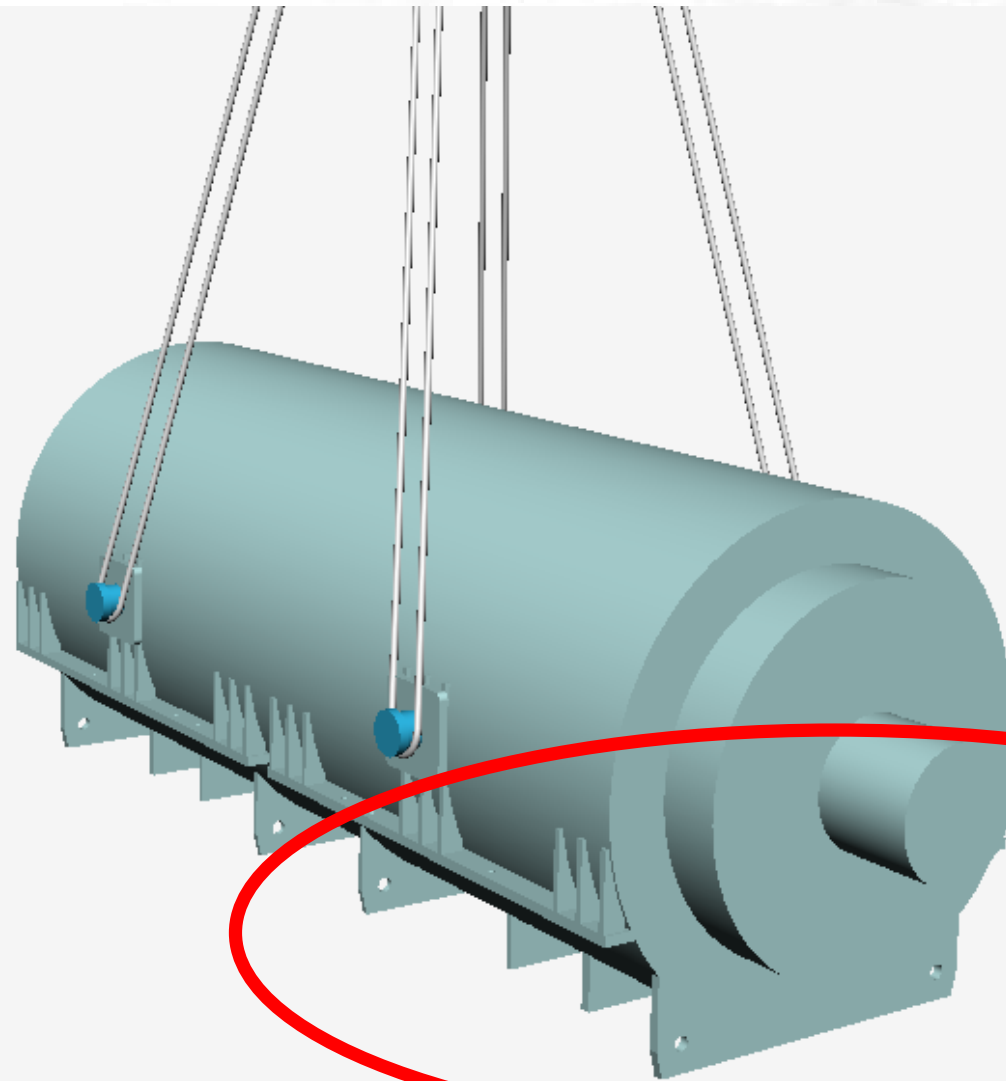
RICKMERS Standard for Stowage and Securing of Project Cargo
RICKMERS-LINIE GmbH & Cie. KG



Booking No.	HAM00008861NA07			Status	Rev0
Designat	or			Sheet	3 / 4
POL	Norfolk	Created by	vdBerg	Revised by	
POD	Dubai/Jebel Ali	Date Created	2007 03 28	Last Revision	



RICOSYS Bedding



RICOSYS Bedding

Browser
Address: file:///P:/weblink/ts_lashing/ts_lashing.html

Lashing Calculation

Vessel
length (pp) m
breadth m C_b

Voyage Conditions
speed kn area number
GM m season
draught m navigation days

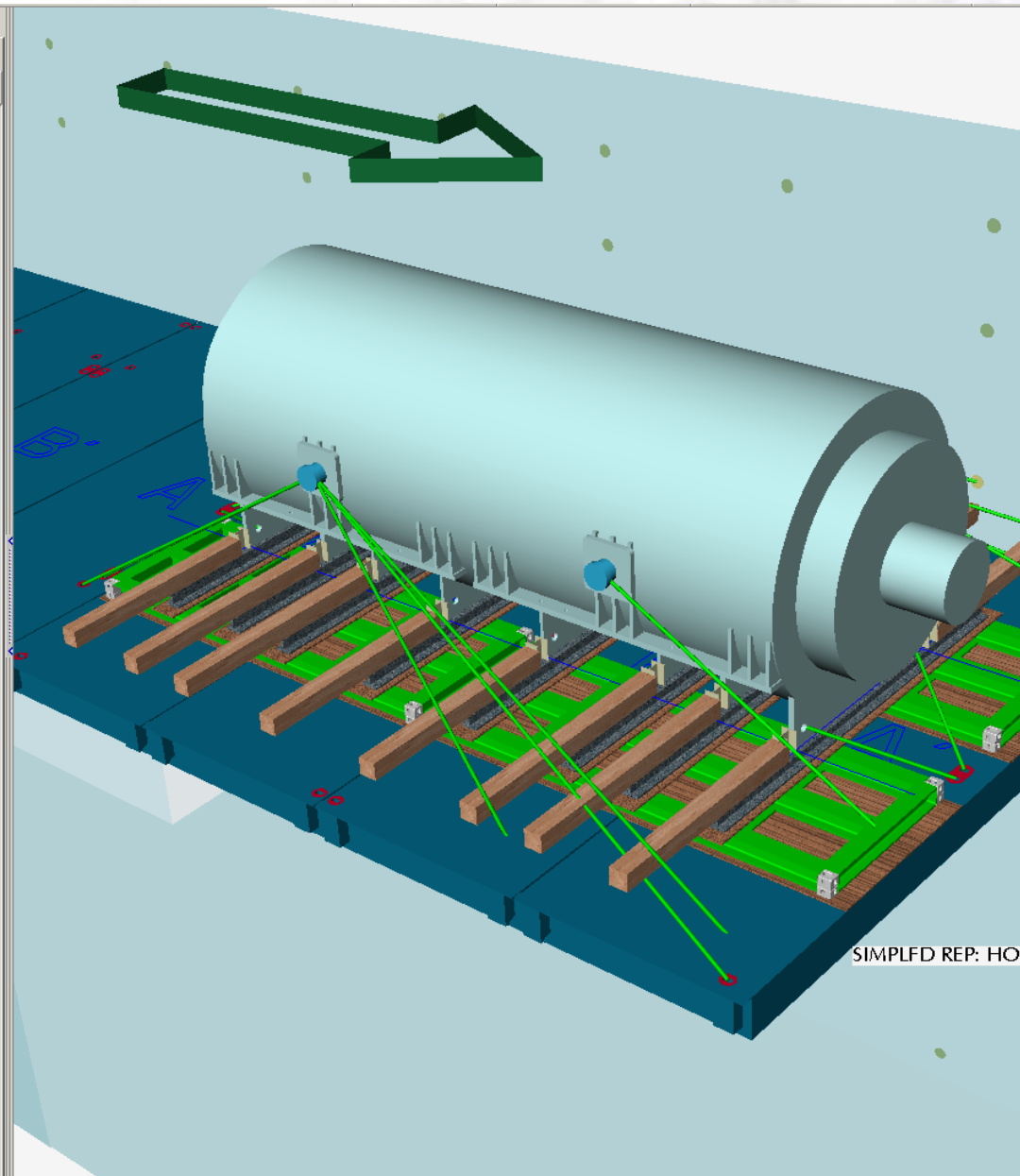
Cargo
item
weight kg stowage x m
 μ y m
z m
wind area x m² sea sloshing x m²
y m² y m²

Shores
MSL ps kN sb kN
aft kN fwd kN

Acceleration
 a_x : 1.80 m/s² (0.18 g)
 a_y : 4.58 m/s² (0.47 g)
 a_z : 3.02 m/s² (0.31 g)

Forces		Tipping Moment	
540 kN 116 %		1096 Nm 1458 %	
1375 kN 126 %	1375 kN 125 %	2792 Nm 150 %	2792 Nm 150 %
540 kN 109 %		1096 Nm 1557 %	

RICKMERS-LINIE - Version 06-09-14 - Powered by INNEO



RICOSYS Lashing

Lashing Arrangement





490 ts Altamira-Labuan

Browser

Address: file:///P:/weblink/rs_lashing/rs_lashing.html

Lashing Calculation

Vessel

length (pp) m
breadth m C_b

Voyage Conditions

speed kn area number
GM m season
draught m navigation days

Cargo

item
weight kg stowage x m
 μ y m
z m
wind area x m² sea sloshing x m²
y m² y m²

Shores

MSL ps kN sb kN
aft kN fwd kN

Acceleration

a_x : 1.33 m/s² (0.14 g)
 a_y : 4.01 m/s² (0.41 g)
 a_z : 2.92 m/s² (0.30 g)

Forces

651 kN
156 %

1963 kN
156 %

651 kN
156 %

Tipping Moment

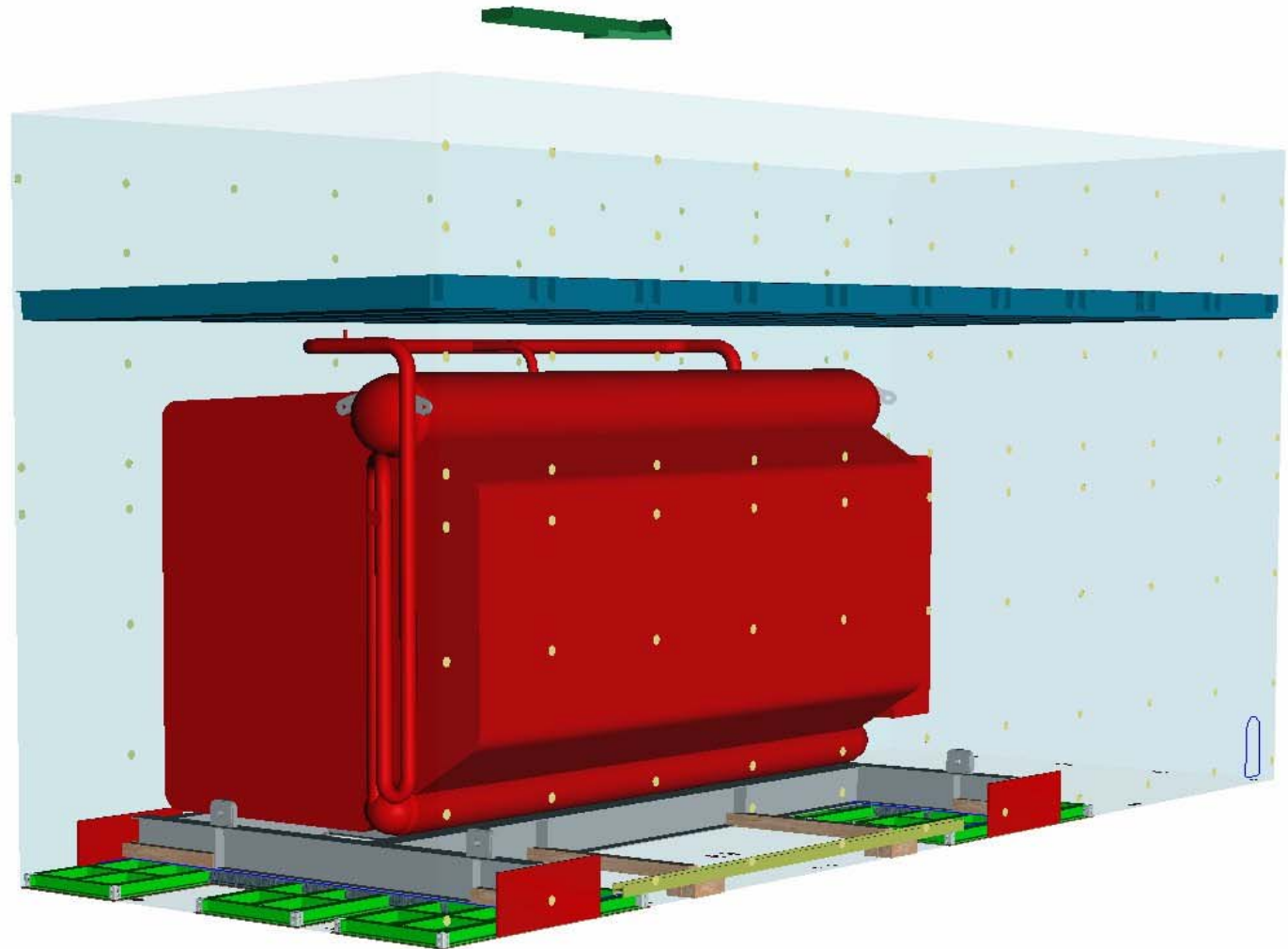
3725 Nm
1100 %

11229 Nm
190 %

11229 Nm
230 %

3725 Nm
1145 %

RICKMERS-LINIE - Version 06-09-14 - Powered by INNEO

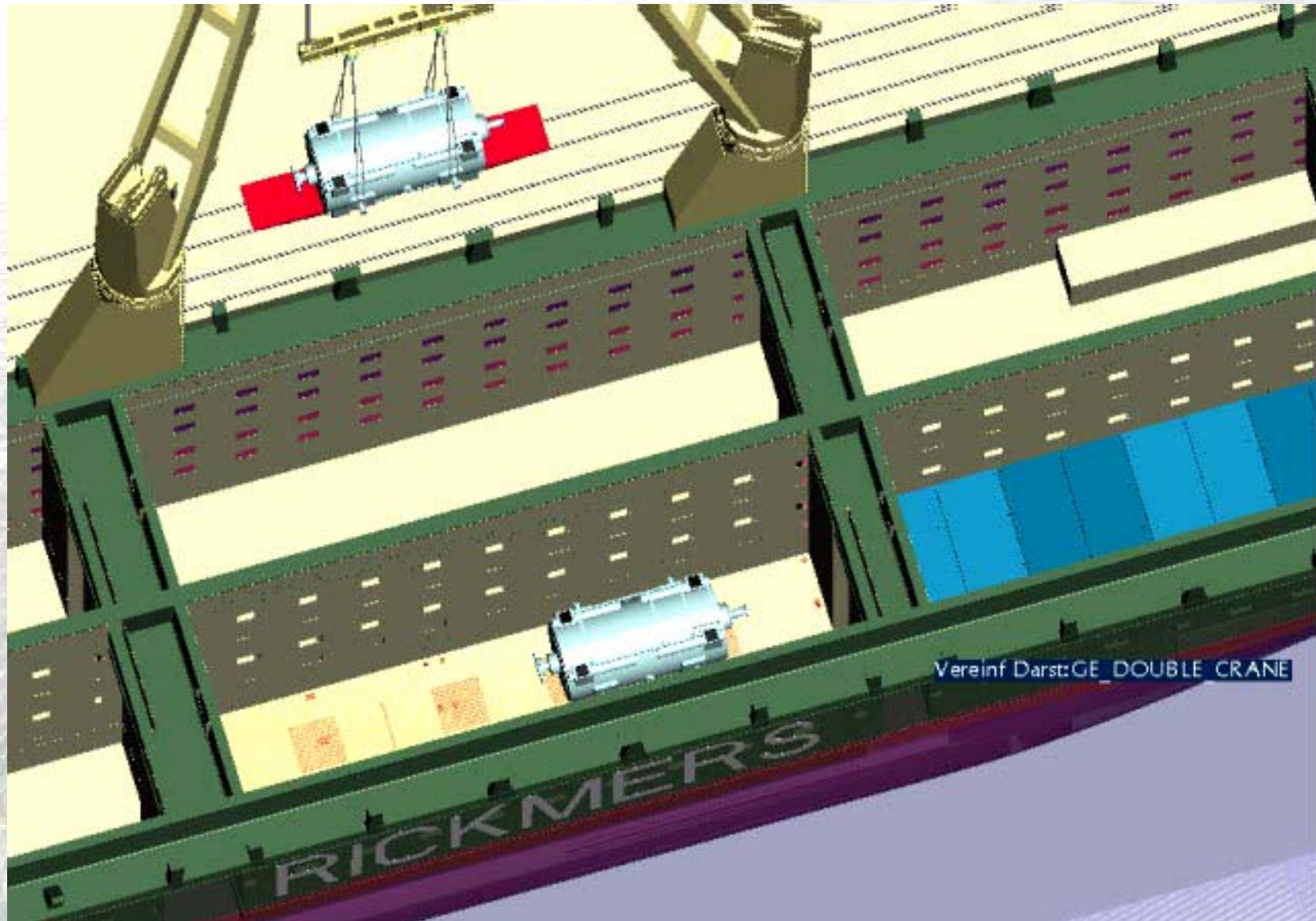


SIMPLFD REP: HOLD3_LH_TD4_PS

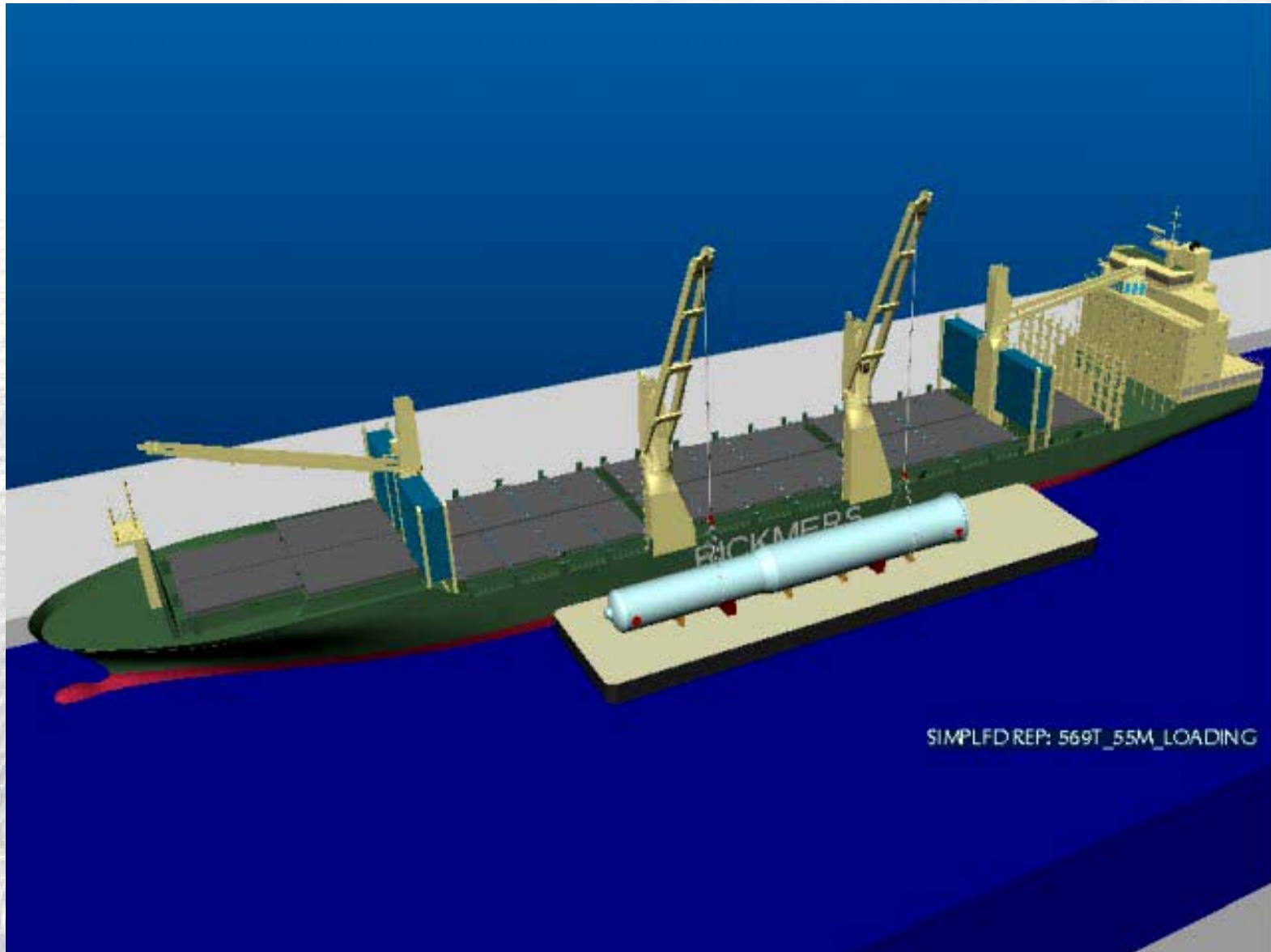
490 ts Altamira-Labuan



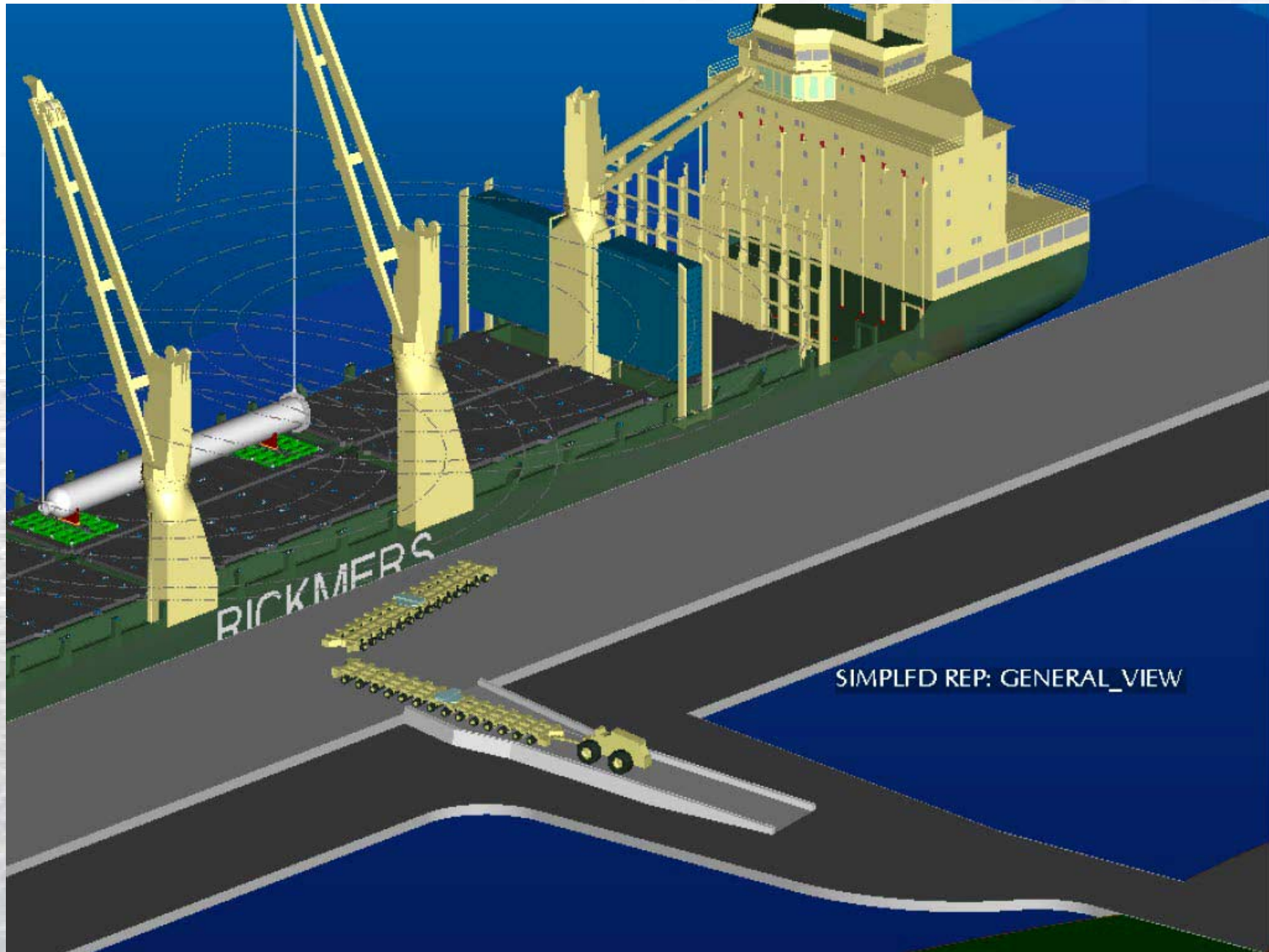
Twin Crane Loading



Cylinder Loading



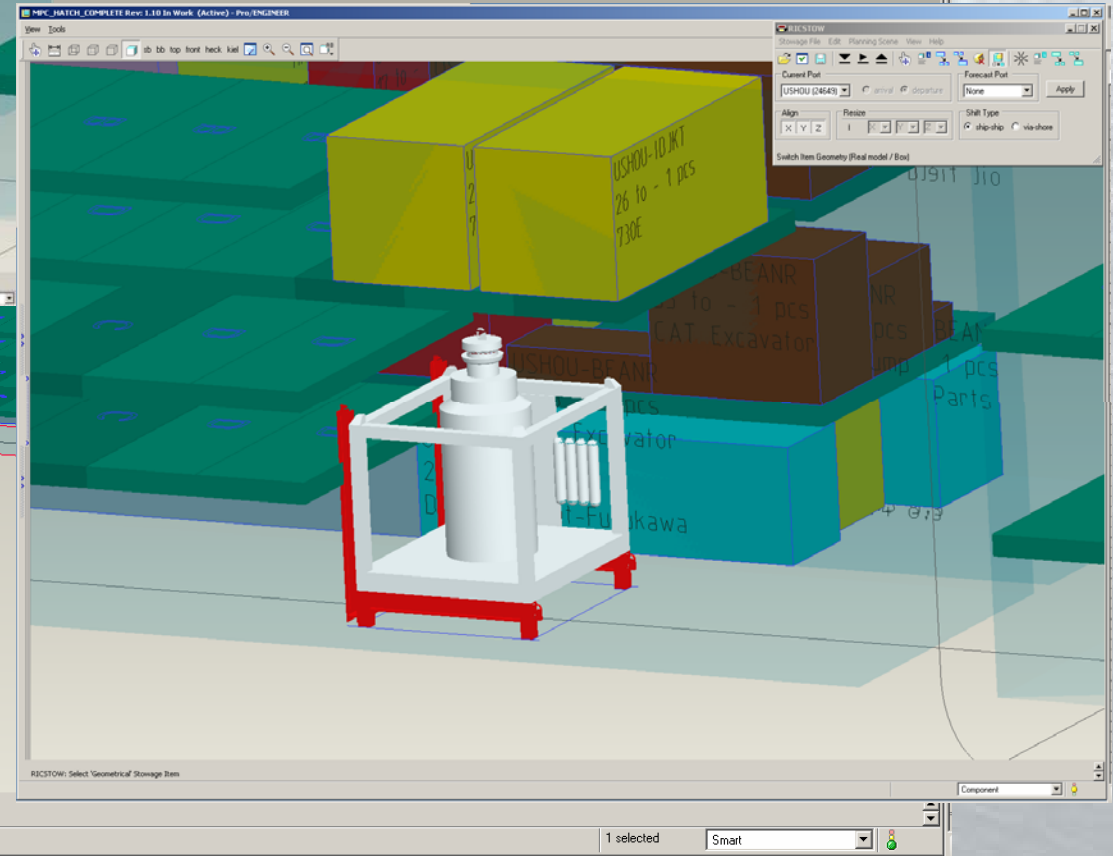
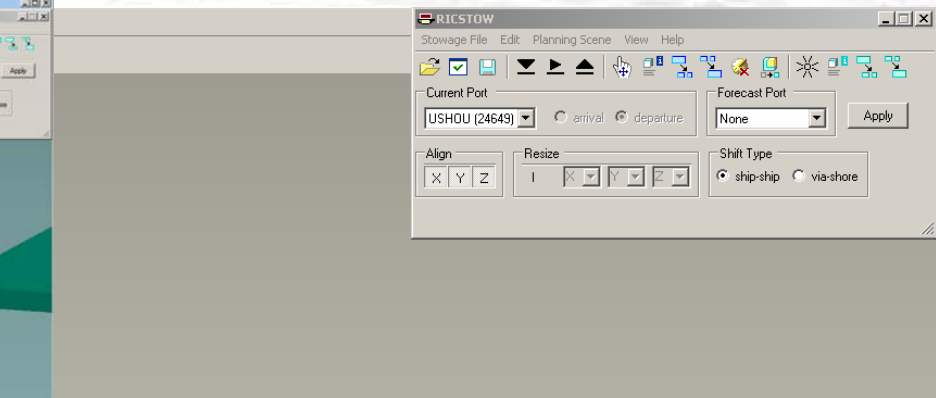
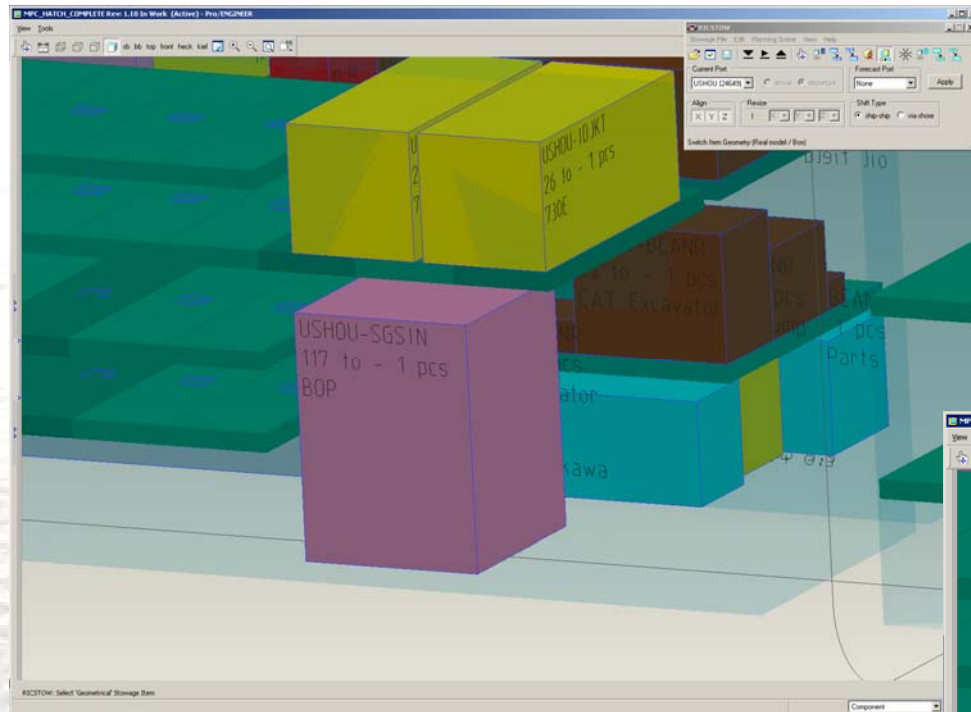
Cylinder Discharging



It's not only a Simulation!



Stowage Planning with RICSTOW



Line 2 assembly MPC_HOLD_HATCH_3_PS: Model changed since mass props calculated. May need to recalculate.

1 selected

Smart

Improving of cargo handling:

- **Permanent observing of cargo handling**
- **Investigation on all damages**
- **Collecting of all informations of cargo loaded**
- **Frequent adjusting of our stowage rules**

Stowage

No free access to lifting points



Stowage

No free access to cargo



Stowage

Preslinging



Stowage

Cargo stow in hold no. 1 Td, cases on second tier loaded on supports



Stowage



Stowage



Rickmers Standard

For Stowage and Securing of Project Cargo



Guidance to:

Masters of Rickmers-Linie vessels

Supercargoes

Stevedores

Agencies

Valuable Guideline for:

Shippers

Manufacturers