The future of Reefer Vessel Design
Reefer RoRo Presentation

JOC TPM Conference, Long Beach, 3rd March 2015

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Reefer Intel AG and Stena RoRo AB

and

The Danish Naval Design
Marine Consultancy Knud E. Hansen A/S

in cooperation with
TTS Port Equipment AB
Johnson Controls System AB
Why is there a need for a new specialized Reefer ship?

- The Reefer fleet is aging – average age is 25/22 years
- No specialized Reefer ships on order
- The specialized Reefer industry will fade away as the general cargo ships did
- Very slow loading and discharge operations and very manpower intensive
- We have designed the Reefer RoRo ship for the shippers of bananas to remain in control of their vital supply chain
Reefer RoRo Ship
Reefer RoRo Ship

Reefer Intel

Stena RoRo
Success Factors

- Economy of scale – 50% increase of cargo
- Short port turnaround time
- Slow steaming or more loading and discharge ports
- RoRo return cargo: Cars, trucks and general project cargo
The ship is a Reefer RoRo and Reefer Container vessel designed for unrestricted worldwide service.

It is a "Green Ship" with low emissions of CO2, NOx and Sox.

- Length overall: 204.0 m
- Breadth: 30.5 m
- Draught: 9.0 m
- Deck height: 4.5 m

Main features covered by international patents.
Palletized bulk operation
Side loading
Cassette System
TTS Cassette designed for Banana Reefer

Grating to be designed for correct pressure head with ship’s refrigeration and ventilation system

Cassettes are parked tight side-by-side on-board ("block stowage")
Loading of Cassette over stern ramp
Block stowage of Cassette
TTS Cassette System
Reefer Intel AG, Switzerland is the owner of the cassette/grating patent. The company is owned by Birger Lindberg Skov.

Experience of Birger Lindberg Skov:

- Secr. Gen. of 360 Quality Association
- President of Lauritzen Reefers A/S
- Man. Dir. of GASA Aarhus
- Man. Dir. of Danish Food Transport
- Consultant to DFDS Group (RoRo business)
KNUD E. HANSEN A/S
Since 1937
Naval Architects, Designers & Marine Engineers
Projects in all 7 continents of the world in 2014
75+ employees
Offices in: Denmark, United Kingdom, USA, Greece, Australia & The Faroe Islands
The Stena Sphere
The Stena Sphere

- Revenue: SEK Million 60,000
- Activities all over the world
- 20,000 employees
- 160 vessels
- 26,600 flats and premises
- 95 wind turbines in operation and under construction
We provide RoRo and passenger vessels, innovative solutions and project management

Our customers are operators and ship owners around the globe

Our tools are knowhow, commitment and financial resources
The Stena RoRo & Stena Line Fleet
Capacity

- 12,500 high cube pallets
- 675,000 banana cartons
- Alternatively 750,000 plastic boxes.
- 55% on cassettes on the four inside refrigerated cargo decks
- 45% in refrigerated containers on the weather deck
Slow steaming

- Loading in Moin and Santa Marta and discharging in Antwerp
- Return RoRo cargo to be loaded in Zeebrugge and discharged in Moin
- Round trip in four weeks schedule to be done with a speed of 16.0 knots
Short port turn around time

- Possibility to operate with three loading and three discharge ports within a four resp. five week schedule
- About 65% reduction in time for loading and discharge
- Large savings in cost for stevedoring
- Simultaneous loading of cargo decks and containers on weather deck
- Three container cranes
Compared to the conventional reefers ships and container carriers, the Reefer RoRo ships represent a cost reduction of about USD 1.00-1.25 per banana carton.

4 Reefer RoRo ships can contribute to a yearly cost reduction of about USD 45 mill – straight to the bottom line.
Efficient loading of RoRo return cargo
"What the specialized Reefer industry has been waiting for"

Quote:

Johan Claes, General Director and Managing Director BNFW, Antwerp