FISKERSTRAND VERFT AS

Design and building of LNG vessels

LNG Bunkering Seminar

Klaipeda, October 17th. 2014

CEO Rolf Fiskerstrand
Fiskerstrand Verft AS

FISKERSTRAND™
- since 1909

Fiskerstrand Verft AS - rich on traditions

FISKERSTRAND VERFT AS

PART OF THE MØRE MARITIME CLUSTER

18 SHIP OWNERS

14 SHIP DESIGN COMPANIES

14 SHIP YARDS

172 EQUIPMENT SUPPLIERS

22 500 SKILLFUL EMPLOYEES

55 000 000 000 NOK TURNOVER IN 2013

(6.800 000 000 EURO)

A world class maritime cluster-advanced marine operations

CONTRACTS & DESIGN FOR LNG CAR -AND PASSENGER FERRIES

"Boknafjord" - Delivered 2011

Design – MM 120 FD LNG

Main Dimensions:

Length, over all	129.90 m
Breadth, moulded	18.80 m
Depth, moulded main deck	6.45 m
Depth, moulded shelter deck	9.50 m
Car Units (PCU)	242
Passengers	600 Persons
Gross Tonnage	7538 GRT
Service speed	20.5 knots
Max speed	23.0 knots
LNG tank cap.	2 x 125 m^3

Class: DnV 1A1, CAR FERRY A, GAS FUELLED, CLEAN, RP, E0, R3 (NOR)

- Gas Electric Propulsion Systems
- Diesel Electric back-up system
- Fuel efficient and environmental friendly
- High redundancy; 2 x LNG tanks, 3 separate LNG engine rooms.

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CONTRACTS & DESIGN FOR LNG CAR -AND PASSENGER FERRIES

"Selbjørnsfjord" - Delivered 2010 Design – MM 105 FE LNG

Main Dimensions:

Length, over all	109.00 m
Breadth, moulded	16.80 m
Depth, moulded	5.50 m
Car Units (PCU)	120
Passengers	249 Persons
Gross Tonnage	2990 GRT
Service speed	12 knots
LNG tank cap.	125 m^3

Class: DnV 1A1, R4, Gas Fuelled, Car Ferry B, E0

- Gas Electric Propulsion Systems
- Diesel Electric back-up system
- Fuel efficient and environmental friendly
- Low turn- around time

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CONTRACTS & DESIGN FOR LNG CAR -AND PASSENGER FERRIES

"Two ferries delivery to Boreal Transport Nord AS" - Delivery 2015

Design – MM 55 FC LNG

Main Dimensions:

Length, over all	62.50 m
Breadth, moulded	13.20 m
Depth, moulded main deck	5.50 m
Car Units (PCU)	40
Passengers	100 Persons

Class: DnV 1A1, CAR FERRY A, GAS FUELLED, CLEAN, RP, E0, R3 (NOR)

Name: ***TBN***

Owner: Boreal Transport Nord AS

Yard: Fiskerstrand Verft AS

Current status: Production has started.

- Gas Electric Main Propulsion
- Diesel back-up Propulsion
- Highly efficient hull shapes, low drag, low power consumption

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CONTRACTS & DESIGN FOR LNG FISH FEED VESSELS

"With Harvest" and "With Marine"- Delivered 2014

Design – MM 70 CC LNG

Main Dimensions:

Length, over all	69.90 m
Breadth, moulded	17.20 m
Depth, moulded	8.60 m
Gross Tonnage	3 250 GRT
Cargo hold capacity	5 000 m^3

Class: DnV +1A1 General Cargo Carrier, Gas fuelled, Clean, TMON, E0

- LNG Powered Main Propulsion
- St.by Diesel Electric Propulsion

Design – MM 66 TP LNG

Main Diemensions:

Length Over All	60.60 m
Breadth Moulded	12.00 m
Draught	5.00 m
Tank capacities: LNG (90%)	880 m^3
Oil products –	500 m^3

CLASS : DnV (or similar) + 1A1,"Tanker for Liquefied Gas", "Tanker for Oil products", ICE 1B, E0, R3

IGC code: IMO type 2G (- 165°C/ 6 bar) for carrying Liquifies Natural Gas
IBC code: IMO type II and III for carrying light petroleum products.

Medium:	LNG (CH4)
Temperature:	-196 / +50°C
Design pressure:	9 bar
Max. cargo density:	500 kg/m^3
Net volume –cold:	800 m^3
Volumetric filling:	0,95
Cargo pumps	2 x 400 m^3/h (5 bar)

Design – MM 66 TP LNG

Main dimensions and capqacities:

Length Over All	~69.90 m
Breadth Moulded	~13.40 m
Draught scantling	4.00 m
Medium:	LNG (CH4)
Temperature:	-196 / +50°C
Design pressure:	5 bar
Max. cargo density:	500 kg/m³
Net volume –cold:	2 x 1000 m³
Volumetric filling:	0,95
Cargo pumps	1 x 200 m³/h (5 bar)

CLASS : DnV +1A1 Barge for Liquified Gas

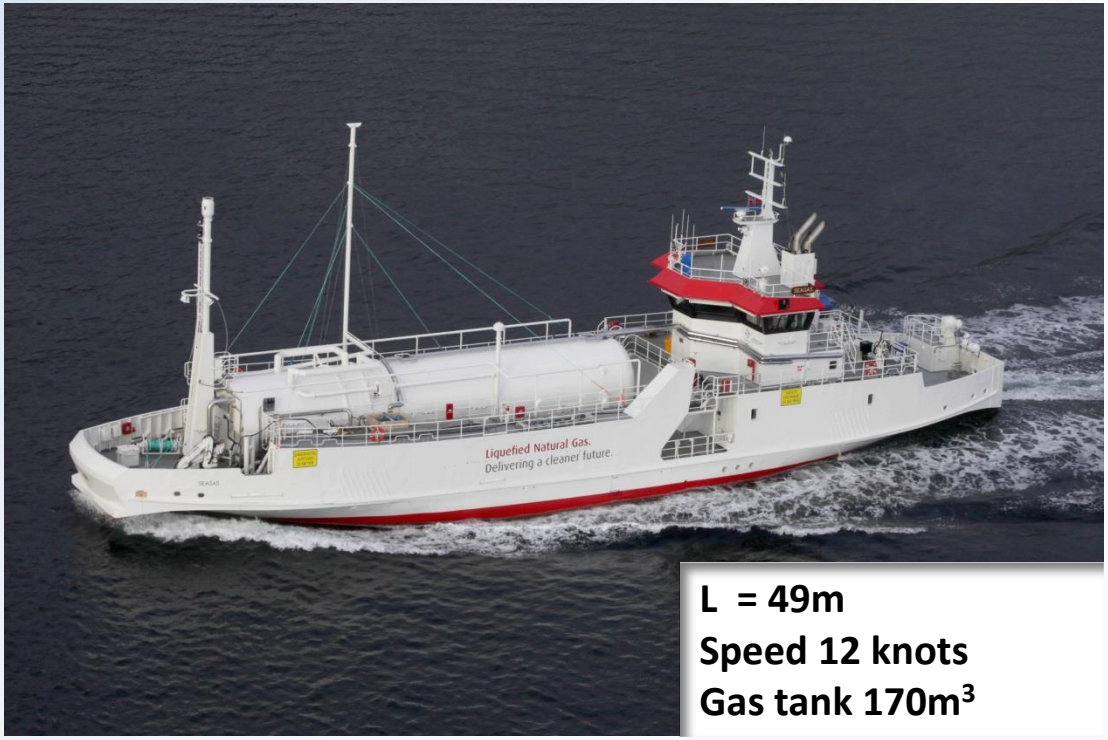
Barge for LNG storage, transport and bunkering

PROJECT & CONVERSION FOR LNG TRANSPORT AND BUNKERING

M/F FJALIR-1974 → SEAGAS-2013

- from ferry to a LNG bunker vessel

- **Pilot project / prototype**
- **Conversion to the world`s first dedicated LNG bunker vessel**
- **Hull and engine/propulsion system kept**
- **Not need shore gas terminal for the operating vessel**
- **Short turnaround in terminal**



L = 49m
Speed 12 knots
Gas tank 170m^3

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THANK YOU FOR YOUR ATTENTION!

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