

M.V.BERGE STAHL

202 VOYAGES AND STILL GOING STRONG



M/S Berge Stahl is the largest dry cargo vessel in the world. She was built by Hyundai Heavy Industry Pvt. Ltd. Ulsan, S. Korea, in less than 9 months. Her keel was laid on the 10th March 1986 and she was delivered on the 05th Dec. 1986.

She was registered in Liberia and changed her nationality to Norway in 1989 and ever since she is flying the Norwegian flag. She is owned and operated by BW Gas ASA (former Bergesen DY ASA, Oslo) since the beginning.

Berge Stahl sailed from S. Korea in Dec 1986 to Ponta Da Madeira, a terminal in Sao Luis, North of Brazil, to load her first cargo. She commenced her maiden voyage on 15th Jan 1987 and ever since has completed 202 voyages.

Out of these, 195 voyages were between Ponta da Madeira and Rotterdam, 5 voyages from Tubarao to Rotterdam and one voyage each from Ponta da Madeira to Majishan Island in China and Dampier (Australia), Saldanha Bay (S.Africa) to Taranto (Italy).

In Rotterdam, she has discharged cargo at EECV terminal for 199 times and once at EMO Maasvlakte.

The terminals in Brazil and also at Rotterdam were custom designed to accommodate Berge Stahl. The depths at EECV terminal in Rotterdam and in the approach channel leading to the

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breakwater are deep enough for Berge Stahl's transit. But from breakwater to berth, the channel does not have sufficient depth. She needs to enter the breakwater at precise time on high tide during every berthing. The lowest Under Keel Clearance (UKC) experienced in the channel was about 2 metres. This planned manoeuvre was nicely shown and explained by National Geographic in their program called "Mega Movers – Port of Rotterdam" on 16th Dec. '05. Two experienced pilots with the help of 4-5 tugs carry out this delicate manoeuvre in Rotterdam.

In P.D.Madeira, Brazil, the serpentine channel is around 54 N.miles, extending from load terminal into the sea. Here, we have to plan our outward transit very meticulously with 23m drafts and pass a couple of shallow patches in the channel on the high tide. At certain stretch, the channel width is as low as 200m. The UKCs at the shallow patches in the channel can be as low as 1.6 meters. This full load manoeuvre is totally carried out by ship's Captain without any shore assistance (Pilot & tugs).

During each trip, Berge Stahl carries around 355.000 MetricTons of Iron ore from Brazil to Rotterdam, which is equal to the weight of 51 Eiffel Towers. She has a contractual agreement to carry 3.5 million tons of iron ore each year, which is equal to the weight of 4 Golden Gate Bridges.

Till date, Berge Stahl has carried 71.495.428 MT (71.495.428 Million MT) of iron ore. Out of this, 681.819 MT was carried to China and Italy and the rest (70.813.609 MT) were hauled to Rotterdam.

She has a COA (Carriage of Affreightment) with ThyssenKrupp Steel till 31st Dec. 2011. By then, she is expected to haul around 75 million tons of Iron Ore.

During these 202 voyages she has covered a distance off around 1677006 Nautical Miles, which is equal to 3.105.815 km The distance sailed is equal to about 77,64 trips around the globe, or 8 trips to the Moon.

Each year, Berge Stahl sails the distance equals to around 3,5 times the Earth circumference.

The lightweight of Berge Stahl is 41.568,7 MT and when fully loaded, her displacement is close to 406.000 MT When she sails from Rotterdam, her light displacement is about 225.000 MT She has in her side tanks around 180.000 MT of Seawater ballast. In her trading period so far, she has filled in around 36 million tons of seawater from Rotterdam harbour.

The loaded speed of Berge Stahl is around 12,5 Knots, and in ballast condition she makes around 14,5 Kts. She consumes nearly 80 MT of fuel oil per day. The Stopping distance calculated under test conditions (in ballast) is around 3,5 nautical miles and time taken to a dead stop is around 25 minutes. However, we never try this in normal operation of the vessel. In actual, we follow certain procedure to bring her to a dead stop. It is done in steps of reducing speed according to available sea room, weather/meteorological conditions and normally it takes about an hour.

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Berge Stahl has 5 cargo holds and each hold has two hatch covers. The bottom of the cargo holds is strengthened to carry heavy density iron ore. Vessel is always loaded homogeneously within the limits of her stability & stresses.

Recently, Australian Postal Department has put Berge Stahl on their 50c Postal Stamp under the series "Heavy Haulers".....quite an achievement for this impressive Leviathan.

All these years, Berge Stahl has frequently remained in the news and she continues to be the pride of BW Gas ASA, Oslo.

SOME OF BERGE STAHL'S SPECIAL FEATURES:

Berge Stahl is one of the most advanced ships of her time with nearly total automation in the machinery space and for ship's ballast system.

Scoop cooling system:

It is a very unique system successfully tried out on this ship (usually most ships have tube coolers or plate coolers).

Instead of using cooling water pumps the ship's speed is used to create a scooping effect to pass the seawater through the scoop coolers.

When ship attains the speed of 5 knots, we switch over from cooling sea water pump to scoop cooler system for cooling the central cooling system for the main engine and the auxiliary machinery.

Here we can attain a sea water pressure of up to 1,5 bar (kg/cm^2) with the help of ship's hydrodynamic phenomenon.

This ultimately leads to reduction of power consumption on generators (saving energy of up to 120 kilo Watts/hour).

Machinery information-

1. We have two boilers (for generating steam to run a turbine generator and for various heating purposes.)
2. We have one turbine generator of 900 kW
3. Two auxiliary generators of capacity 800 kW each.
4. One emergency generator.
5. We have a fresh water production plant, a capacity of 30 MT per day.
6. Air conditioned and refrigeration plants
- 7 Two ballast pumps a capacity of $4500 \text{ m}^3/\text{hr}$ each.
8. We have main engine, B&W, type-7L90MCE, 7 cylinders, bore 900 mm, stroke 2916 mm, BHP27610 (20315 kW) at 73,4 RPM. Engine consumes 80 MT of fuel oil per day.
9. Generators, pumps and various valves are operated by damatic computer command.

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Main Particulars of Berge Stahl:

<u>SHIP'S NAME:</u>	BERGE STAHL
<u>SIGNAL LETTER</u>	LATO2
<u>NATIONALITY</u>	NORWEGIAN NIS (July 17th 1989)
<u>PORT OF REGISTRY</u>	STAVANGER
<u>OWNER</u>	PARTSREDERIET BERGE GOIC DA
<u>OPERATOR</u>	BW GAS ASA, OSLO
<u>OFFICIAL NUMBER</u>	N-00632
IMO NO :	8420804.
DNV NO :	Id No: 14702.
MMSI NO:	258817000.
<u>SHIP BUILDER</u>	HYUNDAI HEAVY IND CO LTD.
<u>KEEL LAID</u>	MAR 10. 1986
<u>LAUNCHED DATE</u>	SEP 05. 1986
<u>DELIVERY DATE</u>	DEC 05. 1986
<u>LENGTH O.A.</u>	342.08 M
<u>LENGTH B.P.</u>	328.00 M
<u>BREATH (moulded)</u>	63.50 M
<u>DEPTH (moulded)</u>	30.20 M
<u>SUMMER DRAFT /DW</u>	23.035 M / 364767 MT
<u>WINTER DRAFT /DW</u>	22.556 M / 355472 MT
<u>TROPICAL DRAFT /DW</u>	23.514 M / 374089 MT
<u>FRESH WATER DRAFT</u>	23.557 M
<u>FRESH WATER ALWNCE</u>	522mm.
<u>INT GROSS / NET</u>	GROSS 175720 NET : 61796
<u>SUEZ CANAL GROSS</u>	GROSS 168264.31 NET : 151570.03
<u>LIGHT SHIP</u>	41568.7 MT
<u>M/E HYUNDAI B&W D.E.7.L. 90MCE.</u>	
<u>BREAK HORSE POWER</u>	27610
<u>PROPELLER</u>	4 BLADES, DIA- 9.50 Mtrs, WT. 59 M.TONS.
<u>SPEED</u>	Manoeuvring 11.0Kts, Loaded 12.5 & Ballast 14.5 Kts
<u>INSURANCE</u>	P&I CLUB: GARD ARENDAL, NORWAY.
<u>HULL UNDERWRITERS</u>	UNITAS, OSLO NORWAY

Master,
Capt. Avinash K. Moghe