

# REPORT ON MACHINERY.

No. 519

No. in Survey held at  
Reg. Book.

Rostock

Date, first Survey 3<sup>rd</sup> April

(Received at London Office 30<sup>th</sup> SEP 82)

Last Survey 18<sup>th</sup> Sept 1882

on the

S. S. Nordstjernen

821,93 BR  
Tons 602,25 NR

Master

A. Juell

Built at

Rostock

When built

1882

Engines made at

M. Berlin

By whom made

A. Borsig

when made 1882

Boilers made at

Rostock

By whom made

A. Borsig

when made 1882

Registered Horse Power

160 HP

Owners

Bergensk Dampskibsselskab

Port belonging to

Bergen - Norway

## ENGINES, &c.—

Description of Engines

Compound inverted direct acting machine with surface condenser.

Diameter of Cylinders 31 1/2" & 59" Length of Stroke 35 1/2" No. of Rev. per minute 70 Point of Cut off, High Pressure 0.45 Low Pressure 0.45

Diameter of Screw shaft 10 1/4" Diameter of Tunnel shaft 9 1/4" Diameter of Crank shaft journals 10 1/4" Diameter of Crank pin 10 1/4" size of Crank webs 11 3/4" x 6"

Diameter of screw 11" 6" Pitch of screw 1 1/2" 6" No. of blades 4 state whether moveable no total surface 350"

No. of Feed pumps 2 diameter of ditto 3" Stroke 17 3/4" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 diameter of ditto 3" Stroke 17 3/4" Can one be overhauled while the other is at work yes

Where do they pump from Sea, all holds, bilge and water ballast tanks.

No. of Donkey Engines 1 Size of Pumps 3" diam & 8" diam Where do they pump from all tanks & bilge pumps.

1 Port Pump delivering 130 Tons water per hour, pumps from engine room and water ballast tanks.

Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible yes

No. of bilge injections 1 and sizes 5" Are they connected to condenser, or to circulating pump to circulating pump.

How are the pumps worked from the balancier and low pressure crosshead.

Are all connections with the sea direct on the skin of the ship no on castings Are they Valves or Cocks all valves without blow off cocks.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line above

Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate yes

What pipes are carried through the bunkers feed and suction through the How are they protected iron casing

Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes

Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from upper Deck.

## BOILERS, &c.—

Number of Boilers

2

Description

Multitubular with two furnaces and one combustion chamber

Working Pressure

80 lbs

Tested by hydraulic pressure to

160 lbs

Date of test

11 July 1882

Description of superheating apparatus or steam chest

Cylindrical vertical

Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately no

No. of square feet of fire grate surface in each boiler 33 1/2 sq ft Description of safety valves System Adamson

No. to each boiler 2 area of each valve 150" Are they fitted with easing gear yes

No. of safety valves to superheater none area of each valve are they fitted with easing gear

Smallest distance between boilers and bunkers or woodwork 20"

Diameter of boilers 11' 9" Length of boilers 9' 6" description of riveting of shell long. seams 5 rows circum. seams double riveted

Thickness of shell plates 0.87" diameter of rivet holes 1 1/2" whether punched or drilled punched pitch of rivets 5" (shell long.)

Lap of plating 8 5/8" s. l. per centage of strength of longitudinal joint 80% working pressure of shell by rules 84 lbs.

Size of manholes in shell 11" x 15" size of compensating rings

No. of Furnaces in each boiler 2 outside diameter 35 3/4" length, top 7' 2" bottom 7' 2"

Thickness of plates 1/2" description of joint single riveted if rings are fitted 1 greatest length between rings 3' 10 1/2"

Working pressure of furnace by the rules 160 lbs

Combustion chamber plating, thickness, sides 5/8" back 5/8" top 5/8"

Pitch of stays to ditto sides 7 7/8" back 6 3/8" top 11 3/4"

If stays are fitted with nuts or riveted heads riveted heads working pressure of plating by rules

Diameter of stays at smallest part 1" working pressure of ditto by rules 106

End plates in steam space, thickness 1/16" + 1/48" pitch of stays to ditto 16" how stays are secured double nuts and large washers.

Working pressure by rules 80.5 lbs diameter of stays at smallest part 2 1/4" working pressure by rules 114

Front plates at bottom, thickness 1/16" + 1/48" Back plates, thickness 1/16" + 1/48" greatest pitch of stays 6 3/8" working pressure by rules 106 lbs



Diameter of tubes *each* 3" pitch of tubes 4 1/4" x 4" thickness of tube plates, front 1 1/16" + 1/4" back 1 1/16" + 1/4"  
 How stayed *solid stays* pitch of stays 1 1/2" x 12" width of water spaces 1 1/4"  
 Diameter of Superheater or Steam chest 5' 0" length 8' 2 3/8"  
 Thickness of plates 9/16" description of longitudinal joint *double* diameter of rivet holes 1 3/16" pitch of rivets 2 3/4"  
 Working pressure of shell by rules 102 lbs Diameter of flue — thickness of plates —  
 If stiffened with rings — distance between rings — Working pressure by rules —  
 End plates of superheater, or steam chest; thickness 1 1/16" + 1/4" How stayed *5 bolts stays and 2 double angle iron.*  
 Superheater or steam chest; how connected to boiler *with copper steam pipes.*

**DONKEY BOILER—** Description *Vertical cross tube boiler.*  
 Made at *Halle a/S* By whom made *F. Schmidt* when made *1882*  
 Where fixed *in stokehold* working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate  
 Fire grate area *6 sq ft* Description of safety valves *with lever* No. of safety valves *1* area of each *4.43 sq ft*  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes*  
 Diameter of donkey boiler *5' 5"* length *11'* description of riveting *long. seams double, cir. seams single*  
 thickness of shell plates *7/16"* diameter of rivet holes *0.825"* whether punched or drilled *drilled*  
 pitch of rivets *3 1/8" in l.s.* lap of plating *4 1/2"* per centage of strength of joint *70%*  
 thickness of crown plates *1 1/16"* stayed by *uptake*  
 Diameter of furnace, top *4' 8"* bottom — length of furnace *7' 4"*  
 thickness of plates *9/16"* description of joint —  
 thickness of furnace crown plates *7/16"* stayed by *uptake*  
 Working pressure of shell by rules *85 lbs* working pressure of furnace by rules *80, 8*  
 diameter of uptake *16"* thickness of plates *5/16"* thickness of water tubes *5/16"*

The foregoing is a correct description,  
*F. Schmidt* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.)

*The Engine and Boilers of this vessel are of very good material and workmanship and in my opinion entitle the vessel to be marked with*  
*⚓ L.M.C. 9.82. in the Registered Book.*  
*The Boilers have been tested with hydraulic pressure and were found tight and the safety valves adjusted under steam.*

*Discontinued in duplicate  
 because the notification  
 L.M.C. recorded  
 30/9/82*

The amount of Entry Fee £ 1 : 10 : received by me,  
 Special £ 24 : 0 :  
 Certificate (if required) £ : : 18  
 To be sent as per margin.  
 (Travelling Expenses, if any, £ 0. 0. 0)

Committee's Minute Tuesday, 10th October, 1882.

*W.A. Libbey*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*TRM*