

# REPORT ON MACHINERY.

No. 248

248

No. in Survey held at *Bergen* Date, first Survey *22 January* Last Survey *4 July* 1890  
 Reg. Book. on the *Steel screw steamer "Bredablik" (design no. 375)* (Number of Visits *14*) Tons *480*  
 Master *Nielsen* Built at *Bergen* By whom built *Bergens mekaniske værksted* When built *1890-7*  
 Engines made at *Bergen* By whom made *Bergens mekaniske værksted* when made *1890*  
 Boilers made at *Bergen* By whom made *Bergens mekaniske værksted* when made *1890*  
 Registered Horse Power *92* Owners *Johan C. Giersten* Port belonging to *Bergen*

## ENGINES, &c.—

(Triple expansion)  
 Description of Engines *Triple compound, three cranks.*  
 Diameter of Cylinders *15 1/2, 25 & 40"* Length of Stroke *27"* No. of Rev. per minute *96* Point of Cut off, High Pressure *0.65* Low Pressure *0.54*  
 Diameter of Screw shaft *8"* Diam. of Tunnel shaft *7 1/2"* Diam. of Crank shaft journals *8"* Diam. of Crank pin *8"* size of Crank webs *30" x 15 1/2 x 6"*  
 Diameter of screw *10-6* Pitch of screw *11-9"* No. of blades *4* state whether moveable *no* total surface *35-11'*  
 No. of Feed pumps *Two* diameter of ditto *2 3/4"* Stroke *14"* Can one be overhauled while the other is at work *yes*  
 No. of Bilge pumps *Two* diameter of ditto *2 3/4"* Stroke *14"* Can one be overhauled while the other is at work *yes*  
 Where do they pump from *Hold & engine room, afterpeak tank - outside*  
 No. of Donkey Engines *Three* Size of Pumps *2 cyl 6 3/4" 2 cyl 3 1/4" 1 cyl 1 3/4" x 5"* Where do they pump from *Hold, engine room, tanks, from sea - outside, through condenser, into boilers, on deck & into aft p. tank*  
 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 *One* and sizes *5"* Are they connected to condenser, or to circulating pump *Air pump.*  
 How are the pumps worked *By lever from L. P. crosshead.*  
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *2 valves & 3 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 *below*  
 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 *none* How are they protected *—*  
 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 *27 June 1890*  
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *main deck*

## BOILERS, &c.—

Number of Boilers *One* Description *cylindrical, multitubular* Whether Steel or Iron *Steel*  
 Working Pressure *150 lbs* Tested by hydraulic pressure to *300 lbs* Date of test *22 May 1890*  
 Description of superheating apparatus or steam chest *Heating surface 1528 sq'*  
 Can each boiler be worked separately *Can the superheater be shut off and the boiler worked separately.*  
 To. of square feet of fire grate surface in *each* boiler *440'* Description of safety valves *Spring* No. to each boiler *Two*  
 Area of each valve *11,040"* Are they fitted with easing gear *yes* No. of safety valves to superheater *—* area of each valve *—*  
 Are they fitted with easing gear *—* Smallest distance between boilers and bunkers or woodwork *8"* Diameter of boilers *12-6"*  
 Length of boilers *10-3"* description of riveting of shell long. seams *treble riv. butt-joint circum. seams double riv. lap* Thickness of shell plates *1 1/2"*  
 Diameter of rivet holes *19/32"* whether punched or drilled *drilled* pitch of rivets *2-8 1/2" C. 3 5/8"* Lap of plating *6"*  
 Percentage of strength of longitudinal joint *84.9* working pressure of shell by rules *151.8* size of manholes in shell *16" x 11 1/2"*  
 Size of compensating rings *6" x 1 1/2"* No. of Furnaces in each boiler *Two*  
 Outside diameter *3-9 1/4"* length, top *7-2"* bottom *7-5 1/2"* thickness of plates *9/16* description of joint *corrugated* if rings are fitted *yes*  
 Greatest length between rings *6"* working pressure of furnace by the rules *154* combustion chamber plating, thickness, sides *9/16* back *9/16* top *9/16*  
 Pitch of stays to ditto, sides *7 1/4* back *7 1/4* top *8* If stays are fitted with nuts or riveted heads *riv. heads* working pressure of plating by rules *154.1* Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *186.8* end plates in steam space, thickness *15/16"*  
 Pitch of stays to ditto *14 3/8" - 14"* how stays are secured *double nuts* working pressure by rules *152.4* diameter of stays at smallest part *2 1/8"* working pressure by rules *161.5* Front plates at bottom, thickness *7/8"* Back plates, thickness *25/32"*  
 Greatest pitch of stays *7/8"* working pressure by rules *—* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4"* thickness of tube plates, front *7/8"* back *7/8"* how stayed *44 stay tubes* pitch of stays *14 1/4"* width of water spaces *1 1/4"*  
 Diameter of Superheater or Steam chest *—* length *—* thickness of plates *—* description of longitudinal joint *—* diam. of rivet holes *—*  
 Pitch of rivets *—* working pressure of shell by rules *—* 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 *—* how stayed *—*  
 Superheater or steam chest; how connected to boiler *—*

**DONKEY BOILER—** Description *Cylindrical with crossstaves Steel*  
 Made at *Gateshead* by whom made *Clarke, Chapman & Co.* when made *1890* where fixed *Stokehold*  
 Working pressure *80* tested by hydraulic pressure to *160 lbs* No. of Certificate *3228* fire grate area \_\_\_\_\_ description of safety  
 valves *spring* No. of safety valves *One* area of each *7.07* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
 Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_  
 per centage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ *Mark on donkey boiler* { *n<sup>o</sup> 3228*  
*Lloyds list*  
*160 lbs*  
*10.4.90 T.B.*  
 Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of plates \_\_\_\_\_ description of joint \_\_\_\_\_  
 Thickness of furnace crown plates \_\_\_\_\_ stayed by \_\_\_\_\_ working pressure of shell by rules \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ diameter of uptake \_\_\_\_\_ thickness of plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *One set of couplingbolts, 2 connecting rod top end bolts & nuts, 2 connecting rod bottom end bolts & nuts, 2 main bearingbolts & nuts, 2 set  
 of valve springs, one set of feed- & bilge pump valves, One set of piston springs  
 one propellershaft, one propeller, boiler tubes, condenser tubes, diff. bolts and nuts*

The foregoing is a correct description,  
**BERGENS MEKANISKE VÆRKSTED.** Manufacturer.  
*J. Holst.*

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

*In my opinion the workmanship of the above described  
 machinery and boiler is good and materials used are  
 of good quality. Machinery tried under steam  
 and everything was then found to be in good order  
 and condition. Safety valves set to 150 lbs, worked well.*

*In my opinion the boilers and machinery of  
 the S/s "Bredablik" are this day the 4<sup>th</sup> of July 1890  
 in a safe working condition, eligible to be classed*

*\*L.M.C. 7.90.*

*It is submitted, that this vessel is  
 eligible to have + L.M.C. 7-90  
 recorded. W.A.  
 8.7.90*

The amount of Entry Fee .. £ 1 : 0 : 0 received by me,  
 Special .. £ 13 : 16 : 0 } £17.0.6  
 Donkey Boiler Fee .. £ 2 : 2 : 0  
 Certificate (if required) .. £ 0 : 2 : 6 5/7 18 90  
 To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

TUES 22 JULY 1890

*+ Lmb 7/90*

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

*Effaurland*

Lloyd's Register  
 Foundation