

# REPORT ON MACHINERY.

No. in Survey held at  
Book.

Date, first Survey *Sept. 1884* Last Survey *18 April 1885*  
(Number of Visits )

on the *SS Sirius* Tons *648*  
ster *Flensburg* Built at *Flensburg* When built *1884*  
ines made at *Flensburg* By whom made *Flensburger Schiffbau* when made *1884*  
ers made at *Flensburg* By whom made *Flensburger Schiffbau* when made *1884*  
istered Horse Power *150 nom.* Owners *Det Bergenske Dampskibsselskab* Port belonging to *Bergen*

## ENGINES, &c.—

Description of Engines *Compound Engine - Inverted Cylinder, Direct acting*  
eter of Cylinders *31 x 57"* Length of Stroke *33"* No. of Rev. per minute *70* Point of Cut off, High Pressure *0.4* Low Pressure *0.4*  
eter of Screw shaft *10"* Diameter of Tunnel shaft *9 1/2"* Diameter of Crank shaft journals *10"* Diameter of Crank pin *10 3/8"* Size of Crank webs *13 1/2 x 6 3/4"*  
eter of screw *12-4* Pitch of screw *17-6* No. of blades *4* state whether moveable *star* total surface *50 sq. feet*  
of Feed pumps *2* diameter of ditto *3 1/4"* Stroke *25"* Can one be overhauled while the other is at work *yes*  
of Bilge pumps *2* diameter of ditto *3 1/4"* Stroke *25"* Can one be overhauled while the other is at work *yes*  
ere do they pump from *from all compartments and two bilges in Engine room (port and starboard sides).*  
of Donkey Engines *2* Size of Pumps *3 1/2 dia 7 stroke 8"* Where do they pump from *the large from the different Ballast tanks and two Engine-room Bilges; the feed Donkey from all compartments, from Sea & Ballast Tanks*  
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*  
of bilge injections *3* and sizes *4 3/2, 3 1/2, 2 1/2"* Are they connected to condenser, or to circulating pump *4" dia. to circulating pump, the others to the Ballast Donkey.*  
are the pumps worked *the feed Donkey & Bilge pumps run from a box, which is connected to the different Engines.*  
all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Valves and Cocks*  
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*  
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*  
t pipes are carried through the bunkers *no pipes* How are they protected *—*  
all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*  
the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*  
n were stern tube, propeller, screw shaft, and all connections examined in dry dock *—*  
he screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *main deck*

## BOILERS, &c.—

ber of Boilers *2* Description *Cylindrical return tubular boiler*  
king Pressure *90 lbs* Tested by hydraulic pressure to *180 lbs* Date of test *23 Feby 1885.*  
ription of superheating apparatus or steam chest *Cylindrical round the chimney*  
each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *no*  
of square feet of fire grate surface in each boiler *34.7 sq feet* Description of safety valves *Spring safety valves 3 3/4 inch diam.*  
to each boiler *2* area of each valve *11.0 sq inches* Are they fitted with easing gear *yes*  
of safety valves to superheater *1* area of each valve *4.9 sq inches* are they fitted with easing gear *yes*  
lest distance between boilers and bunkers or woodwork *12 inches*  
eter of boilers *11-6* Length of boilers *9-6* description of riveting of shell long. seams *double butt strap joint* seams *lap joint double riveted*  
tness of shell plates *15/16* diameter of rivet holes *1 3/16* whether punched or drilled *drilled* pitch of rivets *4 3/8*  
of plating *11 3/4* per centage of strength of longitudinal joint *73%* working pressure of shell by rules *99 lbs*  
of manholes in shell *12 x 16"* size of compensating rings *angle iron 4 1/2 x 4 1/2 x 3/4"*  
of Furnaces in each boiler *2* outside diameter *38 1/2 inches* length, top *6'-10"* bottom *8'-9"*  
tness of plates *9/16* description of joint *lap joint riveted* if rings are fitted *no* greatest length between rings *—*  
king pressure of furnace by the rules *107 lbs*  
bustion chamber plating, thickness, sides *1/2* back *1/2* top *1/2*  
h of stays to ditto, sides *8 x 8"* back *8 x 8"* top *round*  
ays are fitted with nuts or riveted heads *riveted heads* working pressure of plating by rules *100 lbs*  
eter of stays at smallest part *1 1/4 inches* working pressure of ditto by rules *114 lbs*  
plates in steam space, thickness *3/4 inches* pitch of stays to ditto *15 3/4 x 15 3/4* how stays are secured *by double nuts*  
king pressure by rules *90* diameter of stays at smallest part *2 3/8"* working pressure by rules *107*  
nt plates at bottom, thickness *13/16* Back plates, thickness *3/4* greatest pitch of stays *12"* working pressure by rules *100 lbs*



Diameter of tubes  $3\frac{1}{4}$ " pitch of tubes  $4\frac{1}{2}$ " thickness of tube plates, front  $\frac{13}{16}$ " back  $\frac{13}{16}$ "  
 How stayed *by stay tubes* pitch of stays  $13\frac{1}{2} \times 9$  inches width of water spaces  $390$  cub feet.  
 Diameter of Superheater or Steam chest  $7 - 3\frac{3}{4}$ " length  $7 - 6\frac{1}{2}$ "  
 Thickness of plates  $\frac{11}{16}$ " description of longitudinal joint *lap joint double riveted* diameter of rivet holes  $1"$  pitch of rivets  $3\frac{5}{8}$ "  
 Working pressure of shell by rules  $107$  Diameter of flue  $4 - 9$  thickness of plates  $\frac{5}{8}$ "  
 If stiffened with rings *by stay* distance between rings  $13\frac{3}{4} \times 27\frac{1}{2}$  Working pressure by rules —  
 End plates of superheater, or steam chest; thickness  $\frac{3}{4} \times \frac{11}{16}$  How stayed *by the chimney (flue)*  
 Superheater or steam chest; how connected to boiler *by copper pipes*  
**DONKEY BOILER—** Description *Vertical cylindrical Boiler with 3 cross tubes.*  
 Made at *Flensburg* By whom made *Fleusby Skiffs Selskabet* made *1884*  
 Where fixed *in stoke room* working pressure  $90$  lbs Tested by hydraulic pressure to  $180$  No. of Certificate *23 Feb 90*  
 Fire grate area  $12.5$  sq. feet Description of safety valves *indirect weighted* No. of safety valves  $2$  area of each  $4.0$  sq. inches  
 If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *yes*  
 Diameter of donkey boiler  $5 - 0$  length  $10 - 3$  description of riveting *lap joint double riveted*  
 thickness of shell plates  $\frac{1}{2}$ " diameter of rivet holes  $\frac{11}{16}$ " whether punched or drilled *drilled*  
 pitch of rivets  $2\frac{3}{4}$ " lap of plating  $4\frac{1}{4}$ " per centage of strength of joint  $70$ .  
 thickness of crown plates  $\frac{5}{8}$ " stayed by *Knees*  
 Diameter of furnace, top  $3' 7"$  bottom  $4 - 4$  length of furnace  $5 - 1$   
 thickness of plates  $\frac{5}{8}$ " description of joint *lap joint single riveted*  
 thickness of furnace crown plates  $\frac{5}{8}$ " stayed by *the chimney*  
 Working pressure of shell by rules  $99$  lbs working pressure of furnace by rules  $93$  lbs  
 diameter of uptake — thickness of plates — thickness of water tubes  $\frac{3}{8}$  inches

The foregoing is a correct description,  
 Manufacturer. **FLENSBURGER  
SCHIFFBAU-GESELLSCHAFT  
Brunner**

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

The Engine and Boiler of this Vessel have been built according to Lloyd's Rules, and are of very good material and workmanship. The Shafts are of Krupp-Steel, the Boilers have been tested to double the working pressure, and the safety valves have been adjusted under steam. In my opinion the Vessel is entitled to be marked with **+ L.M.C. 4, 85.** in the Register Book.

*This certificate is submitted to the Registrar for his signature & seal.*  
*22/4/85*

The amount of Entry Fee £ : : received by me,  
 Special  $£ 22:10:0$   
 Certificate (if required) .. £ : : 18  
 To be sent as per margin.  
 (Travelling Expenses, if any, £  $5.5.0$ )  
 Committee's Minute

FRIDAY 1 MAY 1885 18

*J.A. Gilbert*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.