

REPORT ON MACHINERY.

No. 1109

SAT 26 NOV 1887

No. in Survey held at *Stensburg* Date, first Survey *April 9th* Last Survey *November 19th 1887*
 Reg. Book. *S. S. Daphne* (Number of Visits *9*) Tons *2*
 on the *S. S. Daphne*
 Master *Vop* Built at *Stensburg* By whom built *Stensburger Schiffbau-Ges.* When built *1887*
 Engines made at *Stensburg* By whom made *Stensburger Schiffbau-Gesellschaft* when made *1887*
 Boilers made at *Stensburg* By whom made *Stensburger Schiffbau-Gesellschaft* when made *1887*
 Registered Horse Power *320* Owners *Deutsche Dampfschiff-Fahrts-Ges.* Port belonging to *Hamburg*

ENGINES, &c.—

Description of Engines *Triple Compound, Inverted, Surface, Condensing.*
 Diameter of Cylinders *22¹/₂, 35¹/₂ x 64¹/₂* Length of Stroke *42¹/₂* No. of Rev. per minute *66* Point of Cut off, High Pressure *1/2* Low Pressure *1/2*
 Diameter of Screw shaft *12¹/₄* Diam. of Tunnel shaft *12¹/₂* Diam. of Crank shaft journals *12¹/₂* Diam. of Crank pin *12¹/₂* size of Crank webs *9¹/₂ x 15¹/₂*
 Diameter of screw *15¹/₂* Pitch of screw *19¹/₂* No. of blades *4* state whether moveable *yes* total surface *—*
 No. of Feed pumps *2* diameter of ditto *3¹/₂* Stroke *27¹/₂* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2* diameter of ditto *3¹/₂* Stroke *27¹/₂* Can one be overhauled while the other is at work *yes*
 Where do they pump from *from all holds, Engine Room, Tunnel peak & Sea, discharging overboard & in dock.*
 No. of Donkey Engines *2, discharging* Size of Pumps *2, 7¹/₂ diam x 9 stroke* Where do they pump from *a. from tanks, all bilges and holds*
discharging overboard & through condenser. b. from all holds, Sea, tanks & bilges, discharging overboard, in
lock & into Main & Donkey Boilers.
 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 *4¹/₂* Are they connected to condenser, or to circulating pump *to circulating pump.*
 How are the pumps worked *by levers from crankshaft of Low Pressure engine.*
 Are all connections with the sea direct on the skin of the ship *yes* Are they Valves or Cocks *Locks & valves*
 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 *bilge pipes to fore holds* How are they protected *by the ceiling*
 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 Octob. 8th before the launch.*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Main Deck*

BOILERS, &c.—

Number of Boilers *2* Description *Cylindrical Multitubular* Whether Steel or Iron *Steel (0)*
 Working Pressure *165 lbs.* Tested by hydraulic pressure to *330 lbs.* Date of test *October 8th 1887.*
 Description of superheating apparatus or steam chest *Cylindrical horizontal Receiver partly placed in uptakes.*
 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 *90* Description of safety valves *Spring* No. to each boiler *2*
 Area of each valve *8¹/₂* Are they fitted with easing gear *yes* No. of safety valves to superheater *1* area of each valve *4¹/₂*
 Are they fitted with easing gear *no* Smallest distance between boilers and bunkers or woodwork *10¹/₂* Diameter of boilers *13¹/₄ x 4¹/₂ int.*
 Length of boilers *10¹/₂ x 15¹/₂* description of riveting of shell long. seams *double butt strap, triple* circum. seams *lap, triple riveted* Thickness of shell plates *1.3¹/₂*
 Diameter of rivet holes *1¹/₄* whether punched or drilled *drilled* pitch of rivets *4.438¹/₂* Lap of plating *8¹/₂*
 Percentage of strength of longitudinal joint *79%* working pressure of shell by rules *166.8 lbs.* size of manholes in shell *12 x 15¹/₄*
 Size of compensating rings *8¹/₂ x 1.3¹/₂* No. of Furnaces in each boiler *2 corrugated*
 Outside diameter *3¹/₂ x 11¹/₂* length, top *7¹/₂* bottom *9¹/₂* thickness of plates *5¹/₈* description of joint *welded* if rings are fitted *—*
 Greatest length between rings *—* working pressure of furnace by the rules *169 lbs.* combustion chamber plating, thickness, sides *5¹/₈* back *9¹/₁₆* top *9¹/₁₆*
 Pitch of stays to ditto, sides *7¹/₈* back *7¹/₈* top *7¹/₈* If stays are fitted with nuts or riveted heads *with nuts* working pressure of plating by
 rules *153.2* Diameter of stays at smallest part *1¹/₄* working pressure of ditto by rules *159 lbs.* end plates in steam space, thickness *1¹/₂*
 Pitch of stays to ditto *15¹/₄ x 14¹/₂* how stays are secured *double nuts & washers* working pressure by rules *165 lbs.* diameter of stays at
 smallest part *2³/₄* iron working pressure by rules *145 lbs.* Front plates at bottom, thickness *3¹/₄* Back plates, thickness *13¹/₁₆*
 Greatest pitch of stays *12¹/₂* working pressure by rules *144 lbs.* Diameter of tubes *3¹/₄* pitch of tubes *4¹/₂* thickness of tube
 plates, front *15¹/₁₆* back *13¹/₁₆* how stayed *stay tubes* pitch of stays *13¹/₂ x 9¹/₂* width of water spaces *6¹/₂*
 Diameter of Superheater or Steam chest *4¹/₂ x 1¹/₂* length *12¹/₂* thickness of plates *1.7¹/₂* description of longitudinal joint *double butt strap* diam. of rivet holes *1¹/₂*
 Pitch of rivets *2³/₄* working pressure of shell by rules *265 lbs.* diameter of flue *—* thickness of plates *—* It stiffened with rings *—*
 Distance between rings *—* working pressure by rules *—* end plates of superheater, or steam chest; thickness *13¹/₁₆* how stayed *dished and*
 are centre stay of iron *2³/₄* Superheater or steam chest; how connected to boiler *by copper pipe &c.*

4AM117-0094

DONKEY BOILER— Description *Cylindrical Multitubular with one furnace & combustion chamber*
 Made at *Flensburg* by whom made *Flensburger Schiffbau-Ges.* when made *1887* where fixed in *Holsten*
 Working pressure *90 lbs.* tested by hydraulic pressure to *180 lbs.* No. of Certificate *10218* fire grate area *11 1/2 sq ft.* description of safety
 valves *Spring* No. of safety valves *2* area of each *4 1/2 sq ft.* if fitted with easing gear *yes* if steam from main boilers can
 enter the donkey boiler *no* diameter of donkey boiler *4 1/2 ft.* length *8 1/2 ft.* description of riveting *double buttstrap treble riv.*
 Thickness of shell plates *1 1/2 in.* diameter of rivet holes *1 in.* whether punched or drilled *punched* pitch of rivets *4 1/2 in.* lap of plating *1 1/2 in.*
 per centage of strength of joint *78%* thickness of crown plates *3/4 in.* stayed by *8 1/2 in. stays 14 in. pitch in steam space 1 1/2 in. stays 8 x 8 in.*
 Diameter of furnace, top *3 1/2 ft.* bottom *3 1/2 ft.* length of furnace *5 1/2 ft.* thickness of plates *1/2 in.* description of joint *single buttstrap, simple riv.*
 Thickness of furnace crown plates *1/2 in.* stayed by *1 1/2 in. stays 8 x 8 in.* working pressure of shell by rules *95 lbs.*
 Working pressure of furnace by rules *118 lbs.* diameter of uptake *3 1/2 in.* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *3 halves Connect. Rod brass top and, 3 do bottom end, 1 bolt & nut for Conn. rod top end, 1 do bottom end, 1 bolt & nut for Main bearings, 1 set brass valves & seats for feed pumps, 2 do. for bilge pumps, 1 do. for Donkey, 1 special opening for slide escape valves, 1 do. for feed pumps, 1 set piston bolts, 1 set coupling for crankshaft, 1 do. for Propeller shaft, 1 third crankshaft, 1 Propeller shaft, 3 blades for Propeller, 1 set studs & nuts for propeller, 1 air pump rod, 1 circulating pump rod, 40 tubes for Main Boilers, 10 do. for Donkey Boilers, 1 set forebars for each Boiler, 20 condenser tubes, 20 screw glands for do., 1 set air pump valves, 1 set circulating pump valves, 36 gauge glasses assorted and many more minor articles together with bolts & nuts, rivets, flat & other iron &c., 2 Valve spindles, 2 Columns and 1 pair brass for links.*
 The foregoing is a correct description,
Flensburger Schiffbau-Gesellschaft Manufacturer.
Brunner

General Remarks (State quality of workmanship, opinions as to class, &c. *Material and Workmanship*
of these Engines and Boilers are satisfactory in every respect and carried out throughout in accordance with the Rules of this Society, the outfit is ample. On the 19th of November 1887 I attended a successful trial trip, the Engines working very satisfactory, the Safety valves I found correctly adjusted.
I beg to recommend that this vessel be classed in the Register Book and that L M C 11.87 be noted.
M. Boreman.

The amount of Entry Fee .. £ 3 : 0 : 0 received by me,
 Special .. £ 36 : 0 : 0
 Donkey Boiler Fee .. £ 2 : 2 : 0
 Certificate (if required) .. £ : 5 : 0 *23/11 1887*
 To be sent as per margin.

(Travelling Expenses, if any, £ 6.2.6)
 Committee's Minute *TUESDAY 29 NOV 1887*
L M C

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