

REPORT ON MACHINERY.

2113

Port of Hamburg Received at London Office MON. 28 DEC 1891
 No. 2113 No. in Survey held at Hamburg Date, first Survey June 12th 1891 Last Survey December 22nd 1891
 Reg. Book. on the S.S. "Tanis" (Number of Visits 34) Tons { Gross — Net —
 Master — Built at Hamburg By whom built Reihensing Schiffw. & Mfbr. When built 1891
 Engines made at Hamburg By whom made Reihensing Schiffw. & Mfbr. when made 1891
 Boilers made at — By whom made — when made 1891
 Registered Horse Power 350 Owners Deutsche Dampfsch. An. Kosmos Port belonging to Hamburg

ENGINES, &c.—

Description of Engines Triple Expansion, vertical, inverted on 3 cranks. No. of Cylinders 3
 Diam. of Cylinders 25¹/₂, 41¹/₂ & 65¹/₂ Length of Stroke 42¹/₂ Rev. per minute 42 Point of Cut off, High Pressure 19¹/₃₂ Low Pressure 17¹/₃₂
 Diameter of Screw shaft 12³/₄ Diam. of Tunnel shaft 12¹/₂ Diam. of Crank shaft journals 12³/₄ Diam. of Crank pin 12³/₄ size of Crank webs 8¹/₂ x 26¹/₈
 Diameter of screw 16¹/₂ Pitch of screw 18¹/₂ No. of blades 4 state whether moveable no total surface 69 sq. ft.
 No. of Feed pumps 2 diameter of ditto 3¹/₄ Stroke 22¹/₂ Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 diameter of ditto 4¹/₂ Stroke 22¹/₂ Can one be overhauled while the other is at work yes
 Where do they pump from all holds, bilges, tanks, tunnel and one from sea.
 No. of Donkey Engines 3 ^{1. Worthington 2. Ballant} Size of Pumps ^{a. 3 1/2" diam. 9" stroke b. 1 1/2" 8" 12"} Where do they pump from a. from all holds, bilges, tanks, sea and tunnel, also hotwell; b. from all holds, bilges, tanks, tunnel & sea, c. from sea and 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 2 and sizes a. 3 1/2" diam b. 4 3/4" Are they connected to condenser, or to circulating pump a. to condenser b. to circulating pump
 How are the pumps worked by levers from crosshead of intermediate engine.
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Locks or 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 for hold suction & one tank vent. How are they protected by wooden casings.
 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 on the stocks.
 Is the screw shaft tunnel watertight yes and fitted with a sluice door yes worked from Cylinder platform.

BOILERS, &c.—

No. of Boilers 2 Description doubled ended, circular, multitub. Material Steel Letter (for record) S.
 Working Pressure 178 lbs. Tested by hydraulic pressure to 344 lbs. Date of test November 7th 1891.
 Description of superheating apparatus or steam chest —
 Can 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 76.5 sq. ft. Description of safety valves Spring No. to each boiler 2
 Area of each valve 10.3 sq. in. 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 2¹/₂ Diameter of boilers 12¹/₂
 Length of boilers 19¹/₂ description of riveting of shell long. seams double butt. 5th riv. circum. seams Lap treble riv. Thickness of shell plates 1.25
 Diameter of rivet holes 1¹/₂ whether punched or drilled drilled pitch of rivets 4⁷/₁₆ Lap of plating 8¹/₂ up. 8⁷/₈
 Per centage of strength of longitudinal joint 85% working pressure of shell by rules 176 lbs. size of manholes in shell 12" x 16"
 Size of compensating rings 6¹/₂ x 1¹/₂ No. of Furnaces in each boiler 4 Description of Furnaces corrugated
 Outside diameter 3⁹/₁₆ length 6¹/₄ thickness of plates 5⁷/₈ description of joint welded if rings are fitted no
 Greatest length between rings — working pressure of furnace by the rules 176 lbs. combustion chamber plating, thickness, sides 5⁷/₈ back — top 5⁷/₈
 Pitch of stays to ditto, sides 8" x 8" back — top 8" x 8¹/₂" If stays are fitted with nuts or riveted heads with nuts working pressure of plating by rules 172 lbs. Diameter of stays at smallest part 1³/₈ working pressure of ditto by rules 175 lbs. end plates in steam space, thickness 1¹/₂
 Pitch of stays to ditto 16" x 13¹/₂" how stays are secured double nut & wash. riv. to plate working pressure by rules 202 lbs. diameter of stays at smallest part 2³/₈ working pressure by rules 182 lbs. Front plates at bottom, thickness 13¹/₁₆ Back plates, thickness 13¹/₁₆
 Greatest pitch of stays — working pressure by rules — Diameter of tubes 3¹/₄ pitch of tubes 4¹/₂ thickness of tube plates, front 13¹/₁₆ back 13¹/₁₆ how stayed stay tubes pitch of stays 9" x 9" width of water spaces 6¹/₂
 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—

Stul. Description *Cylindric Multitub. with 2 furnaces, comb. chamber of plates & bricks and return tubes*

Made at *Hamburg* by whom made *Reiherstieg Schiffswerfte & Maschinenfabrik* when made *1891* where fixed *on Main Deck*

Working pressure *85* tested by hydraulic pressure to *170 lbs* No. of Certificate *14/8.91* fire grate area *16.3 sq. ft.* description of safety

valves *Spring* No. of safety valves *2* area of each *7.0 sq. in.* if fitted with easing gear *yes* if steam from main boilers can

enter the donkey boiler *no* diameter of donkey boiler *8.3* length *4.1 1/8* description of riveting *lap treble riveted*

Thickness of shell plates *.55* diameter of rivet holes *15/16* whether punched or drilled *drilled* pitch of rivets *4 1/16* lap of plating

per centage of strength of joint *69%* thickness of ~~end~~ plates *15/16* & *13/16* stayed by *Stul stage 3 1/2* thread with nuts & washers *yes*

Diameter of furnaces *top 2.6* bottom *—* length of furnace *4.0* thickness of plates *1/2* description of joint *lap single on*

Thickness of ~~furnace crown~~ plates *1/16* stayed by *stag tubes pitched 13 1/2 x 13 1/2* working pressure of shell by rules *82*

Working pressure of furnace by rules *103 lbs* diameter of ~~uptake~~ tubes *3 1/2* thickness of plates *1/16* thickness of ~~water tubes~~ *back plate* *1/16*

SPARE GEAR. State the articles supplied:— *1 propeller, 1 propeller shaft, 1/2 crankshaft, 3/2 brasses for main*

bearings, connect. rod top & bottom ends each, 3 slide rods, 1 link block, 1 air pump rod, 1 circulating

pump rod, 100 fine bars main Blos, 10 fine bars Donkey Blos, 25 tubes Main Blos, 3 tubes Donkey Blos, 1 set

Rushley rings for interm. piston, 3 Rambottom rings for M. P. piston, 25 condenser tubes, 100 cooling glands,

1 set valves, 1 set for circulating pump, 5 air pump valves, 2 valves & seats for feed & bilge pumps each, 1 eccentric strap, 2

springs safety valves, 2 springs Cylind. escape valves, 1 set coupling

bolts for crank & tunnel shaft each, 3 bolts main bearings, connect. rod

tops and bottom ends each, 6 piston bolts, 1 iron plate, bolts &c. assorted.

The foregoing is a correct description,

Reiherstieg Schiffswerfte & Maschinenfabrik

Manufacturer.

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

of these Engines & Boilers are of very best description, the outfit

is ample and substantial. I attended a satisfactory trial trip

on the 22nd December 1891 when the Machinery worked very

smooth and satisfactory. At this occasion I controlled the

Safety valves of Main and Donkey Boilers and found them

correctly adjusted to 172 and 85 lbs. respectively.

The Steel Boilers are manufactured of properly tested Materials,

the copies of the invoices signed by the testing officers being in

my hands. Certificate of Forgings for crank and straight

Shafting will be found attached.

The heating Surface by Rule is 5550 sq. ft. and the payable

horsepower by Rule 323.

I beg to recommend that this vessel be classed in the

Register Book, and that L.M.C 12.91 be entered.

It is submitted that
this vessel is eligible for
THE RECORD L.M.C. 12.91
all
18.12.91.

MACHINERY CERTIFICATE
WRITTEN.

J. M. B. B. B.
Engineer-Surveyor to Lloyd's Register of British & Foreign Shipping.

TUES. 5 JAN 1892

Committee's Minute

+ L.M.C 12.91