

REPORT ON MACHINERY.

No. 2605.

Received at London Office

SAT. 15 FEB 1908

Date of writing Report 12 Febr. 1908 When handed in at Local Office

Port of Copenhagen

No. in Survey held at Copenhagen

Date, First Survey 25th July 07 Last Survey 15th January 1908.

Reg. Book.

29 on the Steel Se. Sr. Washington (Yard No. 261)

(Number of Visits)

Gross 881

Net 533.

Master N. Nielsen Built at Copenhagen By whom built A. S. Burmeister & Wain Maskin & Skibbyggeri When built

Engines made at Copenhagen By whom made A. S. Burmeister & Wain Maskin & Skibbyggeri when made 1908.

Boilers made at Copenhagen By whom made A. S. Burmeister & Wain Maskin & Skibbyggeri when made 1908.

Registered Horse Power 116 Owners A. S. H. Kirschner (H. Kirschner, Mgr.) Port belonging to Copenhagen.

Nom. Horse Power as per Section 28 116 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted no

ENGINES, &c.—Description of Engines Inverted triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 16"-26"-45" Length of Stroke 30 Revs. per minute 85 Dia. of Screw shaft as per rule 9 27/66 as fitted 9 3/4 Material of Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no Cedarwall Is the after end of the liner made water tight in the propeller boss ✓ If the liner is in more than one length are the joints burned ✓ If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 3'-4" ✓

Dia. of Tunnel shaft as per rule 8 06 as fitted 8 1/8 Dia. of Crank shaft journals as per rule 8 463 as fitted 8 3/4 Dia. of Crank pin 8 3/4 Size of Crank webs 6 1/2 x 11 1/2 Dia. of thrust shaft under collars 8 3/4 Dia. of screw 11'-6" Pitch of Screw 13'-8" No. of Blades 4 State whether moveable no Total surface 41 sq ft.

No. of Feed pumps 2 ✓ Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 ✓ Diameter of ditto 3" Stroke 15" Can one be overhauled while the other is at work yes

No. of Donkey Engines 1 Feed donkey Sizes of Pumps 4 x 2 3/4 x 4 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 off 2" diam. Bilge pump & Ballast donkey In Holds, &c. For hold 2 off 2" diam. Tunnel 1 off 2 1/2" diam. after hold 2 off 2" diam. Bilge & Ballast donkey

No. of Bilge Injections 1 sizes 4 1/2 Connected to condenser, or to circulating pump &c. pump Is a separate Donkey Suction fitted in Engine room & size 1 off 4" diam. Ballast donkey

Are all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes Are the sluices on Engine room bulkheads always accessible no sluices

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks All valves except boiler 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 none How are they protected ✓

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes

Dates of examination of completion of fitting of Sea Connections 11th Decbr. of Stern Tube 22/11 Screw shaft and Propeller 9/12 & 1/12

Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from upper platform in engine room

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel William Bramson & Co. The Leeds Forge Co Ltd. The rivet bolts nut & bolt.

Total Heating Surface of Boilers 1720 sq ft Is Forced Draft fitted no No. and Description of Boilers 2 cylindrical single ended.

Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs. Date of test 18th Oct. 07 No. of Certificate 285 & 286

Can each boiler be worked separately yes Area of fire grate in each boiler 22. 67 sq ft No. and Description of Safety Valves to

each boiler 2 spring loaded Area of each valve 4.9 sq ft Pressure to which they are adjusted 180 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 12" Mean dia. of boilers 10'-1 7/8" Length 9'-9" Material of shell plates Steel

Thickness 7/8 Range of tensile strength 28-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams double

long. seams treble Diameter of rivet holes in long. seams 15/16" Pitch of rivets 6 7/8" Lap of plates or width of butt straps 14 1/16"

Per centages of strength of longitudinal joint rivets 85.3 plate 86.36 Working pressure of shell by rules 184 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 33" x 28" No. and Description of Furnaces in each boiler 2 Morrisons Material Steel Outside diameter 3'-2"

Length of plain part top bottom Thickness of plates crown bottom 7/16" 1/32" Description of longitudinal joint welded No. of strengthening rings ✓

Working pressure of furnace by the rules 182 lbs. Combustion chamber plates: Material Steel Thickness: Sides 7/16" 1/32" Back 5/8" Top 7/16" 1/32" Bottom 3/4"

Pitch of stays to ditto: Sides 8 1/2 x 7 1/2 Back 8 x 7 Top 8 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 190 lbs.

Material of stays Steel Diameter at smallest part 1.384 Area supported by each stay 63.75 Working pressure by rules 188 lbs. End plates in steam space:

Material Steel Thickness 15/16" Pitch of stays 15" x 15" How are stays secured double nuts Working pressure by rules 185 lbs. Material of stays Steel

Diameter at smallest part 2.634 Area supported by each stay 225 sq ft Working pressure by rules 218 lbs. Material of Front plates at bottom Steel

Thickness 15/16" Material of Lower back plate Steel Thickness 13/16" Greatest pitch of stays 13" x 7" Working pressure of plate by rules 210 lbs.

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 15/16" Back 13/16" x 1/32" Mean pitch of stays 9" x 13 1/2"

Pitch across wide water spaces 14" Working pressures by rules 184 lbs. Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 6 3/4 x 2 x 3/4 Length as per rule 27" Distance apart 7 1/2" Number and pitch of stays in each 2 off 8 1/2"

Working pressure by rules 180.5 Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

004971-004981-0107

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. _____ Description _____

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____

Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____

If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____

Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____

Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____

Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____

Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____

Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— 6 Bolts for shaft coupling, 2 bolts for cross-head brasses, 2 bolts ^{& nuts} for connecting rod-brasses, 2 bolts ^{& nuts} for main bearing-brasses, 2 valves for feed pump, 2 valves for bilge pump, 2 springs for boiler safety valves. A quantity of assorted bolts & nuts; Iron of various sizes.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building _____ During progress of work in shops - - - 25/7 9/8 20/8 22/8 3/9 7/9 10/9 18/9 24/9 26/9 7/10 11/10 15/10 16/10 18/10 11/11 22/11 27/11 9/12, _____ During erection on board vessel - - - 11/12 13/12 16/12 18/12 21/12 24/12 30/12 31/12 7/1 8/1 9/1 13/1 14/1 15/1 _____ Total No. of visits 33.

Is the approved plan of main boiler forwarded herewith yes

Dates of Examination of principal parts—Cylinders 3/9 tested 11/11 Slides 7/9 Covers 7/9 Pistons 24/9 Rods 7/10

Connecting rods 7/10 Crank shaft 7/10 Thrust shaft 7/10 Tunnel shafts 7/10 Screw shaft 7/10 Propeller 3/12

Stern tube 16/10 Steam pipes tested 31/12 Decbr. Engine and boiler seatings 13/12 Engines holding down bolts 7/1

Completion of pumping arrangements 24/12 Boilers fixed 30/12 Engines tried under steam 15/11

Main boiler safety valves adjusted 14/1 Thickness of adjusting washers Stbd 7/16 for 1/2 + 1/32 aft 1 1/2 for 3/8 + 1/32 aft R N° 875

Material of Crank shaft S.M. Steel Identification Mark on Do. 10-57-A.T.P. Material of Thrust shaft S.M. Steel Identification Mark on Do. 10-57-A.T.P. R N° 876

Material of Tunnel shafts S.M. Steel Identification Marks on Do. 10-57-A.T.P. Material of Screw shafts S.M. Steel Identification Marks on Do. 10-57-A.T.P. R N° 880

Material of Steam Pipes Steel Test pressure 360 lbs.

General Remarks (State quality of workmanship, opinions as to class, &c. In accordance with the rules) for special survey we have examined the material and workmanship from the commencement until the final trial under steam and found it good in every respect. All the forgings are of Siemens Martin Steel and have been found good. All the castings are sound and good, the bearings of proper dimensions and sound material. The boiler material has been tested as per rules as per test notes received and satisfactory hot & cold test of the material has been carried out by us. The dimensions are as specified and in accordance with the rules and the approved plan. On the trial trip the engines & boilers worked satisfactorily.

It is submitted that this vessel is eligible for

THE RECORD. L.M.C. 1.08.

17.2.08.

The amount of Entry Fee. £ 2 : " : When applied for, 12-2 1908

Special £ 17 : 8 : When received, 1912 1908

Donkey Boiler Fee £ : : 21 2 1908

Travelling Expenses (if any) £ : : 19 1908

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

Committee's Minute

Assigned

1065.18 FEB 1908

+ L.M.C. 1.08.

MACHINERY TIFICATE WRITER.



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Certificate (if returned) to be sent to Surveyor's Office, Copenhagen.