

REPORT ON MACHINERY.

No. 51,597.

Port of Newcastle-on-Tyne Received at London Office MON. 17 SEP 1906
 No. in Survey held at South Shields Date, first Survey Apr 07 Last Survey 6th Sept 1906
 Reg. Book. on the S.S. KING IDWAL (Number of Visits 21)
 Master W. Williams Built at South Shields By whom built J. Readhead & Sons Tons { Gross 2631
 Engines made at South Shields By whom made J. Readhead & Sons Net 2321
 Boilers made at " By whom made " when made 1906
 Registered Horse Power Owners Phillips Phillips & Co. Port belonging to South Shields
 Nom. Horse Power as per Section 28 326 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25-41-67 Length of Stroke 45 Revs. per minute 60 Dia. of Screw shaft as per rule 13.66 Material of screw shaft Iron
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes Is the after end of the liner made water tight in the propeller boss yes
 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 Fitting
 If two liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 4-8"
 Dia. of Tunnel shaft as per rule 12.4 Dia. of Crank shaft journals as per rule 13.02 Dia. of Crank pin 1 3/4 Size of Crank webs 7 1/2 x 9 Dia. of thrust shaft under collars 14 1/2 Dia. of screw 16.6 Pitch of Screw 16.6 - 19-0 No. of Blades 4 State whether moveable no Total surface 78.5 sq
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 33 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 3/8 Stroke 33 Can one be overhauled while the other is at work yes
 No. of Donkey Engines two Sizes of Pump (13 1/2 x 9 x 13) (6 x 4 x 6) No. and size of Sections connected to both Bilge and Donkey pumps
 In Engine Room four 3 1/2" diam In Holds, &c. Fore holds four of 3 1/2"
aft holds four of 3 1/2". After well one 2 1/2"
 No. of Bilge Injections 1 sizes 5 1/2 Connected to condenser or to circulating pump Pump Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"
 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 -
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks both
 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 9.8.06 of Stern Tube 9.8.06 Screw shaft and Propeller 9.8.06
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platform

BOILERS, &c.—(Letter for record 2) Manufacturers of Steel John Spenser & Sons
 Total Heating Surface of Boilers 5013 sq Is Forced Draft fitted no No. and Description of Boilers Two upright ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 28-7-06 No. of Certificate 7281
 Can each boiler be worked separately yes Area of fire grate in each boiler 63.2 sq No. and Description of Safety Valves to each boiler Two spring loaded Area of each valve 7.06 sq Pressure to which they are adjusted 18.5 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 22" Mean dia. of boilers 16-1 1/2 Length 10.6 Material of shell plates S
 Thickness 1 1/32 Range of tensile strength 27/32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Lap J.R.
 long. seams J.3.5 Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 3/8 Length of plates or width of butt straps 21 1/2
 Per centages of strength of longitudinal joint rivets 87.7 Working pressure of shell by rules 186 lbs Size of manhole in shell 16 x 12
 plate 85.3
 Size of compensating ring 7 1/4 x 1 1/32 No. and Description of Furnaces in each boiler 3 Morrison Material Stal Outside diameter 4 ft
 Length of plain part top 19 1/2 Thickness of plates crown 19 1/32 Description of longitudinal joint Welded No. of strengthening rings none
 bottom 19 1/32
 Working pressure of furnace by the rules 196 lbs Combustion chamber plates: Material Stal Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16
 Pitch of stays to ditto: Sides 8 1/4 x 8 Back 8 3/4 x 8 Top 8 1/2 x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 194 lbs
 Material of stays Iron Diameter at smallest part 1 1/4 Area supported by each stay 70 sq Working pressure by rules 199 End plates in steam space:
 Material Stal Thickness 1 1/8 Pitch of stays 18 1/4 x 18 How are stays secured J.N.Y.W. Working pressure by rules 182 lbs Material of stays stal
 Diameter at smallest part 1 1/4 Area supported by each stay 328.5 sq Working pressure by rules 185 lbs Material of Front plates at bottom stal
 Thickness 3/4 Material of Lower back plate stal Thickness 1 1/16 Greatest pitch of stays 12 x 8 Working pressure of plate by rules 219
 Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 Material of tube plates stal Thickness: Front 3/4 Back 3/4 Mean pitch of stays 9 1/2
 Pitch across wide water spaces 14 1/2 Working pressures by rules 183 lbs Girders to Chamber tops: Material stal Depth and thickness of girder at centre 8 1/2 x 1 1/2 Length as per rule 2.2 Distance apart 8 1/4 Number and pitch of stays in each 2" x 8"
 Working pressure by rules 204 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

If not, state whether, and when, one will be sent? Is a Report also sent on the Hull of the Ship?

W869-0034

VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____
 Made at _____ By whom made _____ When made _____ Where fixed **Stockholm**
 Working pressure tested by hydraulic pressure to _____ Date of test **7-9-06** 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 be used in the donkey boiler _____ Dia. of donkey boiler _____ Length _____
 Material of shell plates _____ Thickness **See attached** 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:— **Tail shaft + propeller**
2 Top end, 2 bottom end, 2 main bearing bolts + nuts, 1 set coupling bolts, 1 set helix, fuel, air, circ. + donkey pump valves, iron assorted

The foregoing is a correct description,

John Headhead Manufacturer.

Dates of Survey while building
 During progress of work in shops: 1906. Apr. 28. 30. May 2. 7. 9. 16. 22. 26. 29. 31. June 6. 8. 15. 21. Aug. 1. 9. 17. 20. 23. 28. Sept. 6.
 During erection on board vessel: _____
 Total No. of visits: **21** Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Cylinders **July-Aug-06** Slides **July-Aug-06** Covers **July-Aug-06** Pistons **July-06** Rods **July-06**
 Connecting rods **July-06** Crank shaft **1-2-06** Thrust shaft **5-8-06** Tunnel shafts **July-Aug-06** Screw shaft **July-Aug-06** Propeller **Aug-06**
 Stern tube **8-8-06** Steam pipes tested **23-8-06** Engine and boiler seatings **9-8-06** Engines holding down bolts **20-8-06**
 Completion of pumping arrangements **28-8-06** Boilers fixed **9-8-06** Engines tried under steam **28-8-06**
 Main boiler safety valves adjusted **28-8-06** Thickness of adjusting washers **P 7/8 5/16 5/16 5/16 5/16**
 Material of Crank shaft **steel** Identification Mark on Do. **51147** Material of Thrust shaft **steel** Identification Mark on Do. **G.T. 8-8-06**
 Material of Tunnel shafts **steel** Identification Marks on Do. **G.T. 8-8-06** Material of Screw shafts **steel** Identification Marks on Do. **G.T. 8-8-06**
 Material of Steam Pipes **Copper** Test pressure **360 lbs**

General Remarks (State quality of workmanship, opinions as to class, &c.)
This vessel's machinery has been built under Special Survey & in our opinion is eligible for record H.L.M.C. 9-06

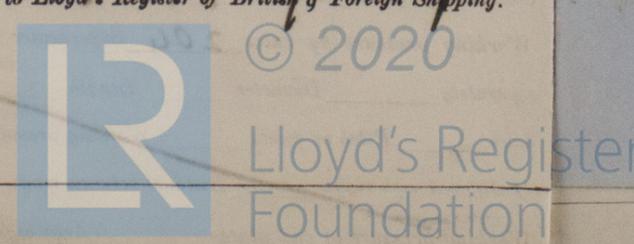
It is submitted that this vessel is eligible for THE RECORD H.L.M.C. 9-06.

W. Law **G.A. Duden Yonuz**
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
 17-9-06

The amount of Entry Fee... £ **3** : : :
 Special ... £ **36** : **6** : : :
 Donkey Boiler Fee ... £ : : :
 Travelling Expenses (if any) £ : : :
 When applied for, **15 SEP 1906**
 When received, **19-9-06**

Committee's Minute **TUES. 18 SEP 1906**
 Assigned **Lmb 906**

MACHINERY CERTIFICATE WRITTEN.



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Certificate (if required) to be sent to Newcastle-on-Tyne

Form No. 1B