

REPORT ON MACHINERY.

No. 52025

Port of Newcastle on Tyne Received at London Office MON. DEC 10 1906

No. in Survey held at Newcastle Date, first Survey July 31 Last Survey 6 Dec 1906
 Reg. Book. 37 on the SS S. S. Lindenfels (Number of Visits 37)
 Master Swan Hunter & W Richardson Built at Newcastle By whom built Swan Hunter & W Richardson When built 1906
 Engines made at Newcastle By whom made Swan Hunter & W Richardson when made 1906
 Boilers made at D. By whom made D. when made 1906
 Registered Horse Power 528 Owners Deutsche Dampfschiffahrts-Gesellschaft Port belonging to Bremen
 Nom. Horse Power as per Section 28 528 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Quaduple Expansion No. of Cylinders 4 No. of Cranks 4
 Dia. of Cylinders 24-34-51-74 Length of Stroke 54 Revs. per minute 60 Dia. of Screw shaft as per rule 15-3/4 Material of screw shaft Steel
 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 Yes 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 Yes
 If two liners are fitted, is the shaft lapped for protected between the liners Yes Length of stern bush 72
 Dia. of Tunnel shaft as per rule 13-5 Dia. of Crank shaft journals as per rule 14-17 Dia. of Crank pin 14-3/4 Size of Crank webs 22-1/2 x 9-1/2 Dia. of thrust shaft under collars 15 Dia. of screw 19-0 Pitch of Screw 21-0 No. of Blades 4 State whether moveable Yes Total surface 112 sq ft
 No. of Feed pumps 2 Diameter of ditto 4 Stroke 28 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 4-1/2 Stroke 28 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 2 Sizes of Pumps 15-3/4 x 23-7/8 - 6 x 11-3/4 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 6 - 3-1/2 In Holds, &c. Two 3-1/2 in each hold.
 Tunnel well one 3-1/2
 No. of Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump CP 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 Yes
 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 & below
 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 bilge pipe How are they protected strong wood casing
 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 Oct 1906 of Stern Tube Oct. Nov 1906 Screw shaft and Propeller Nov 1906
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Main Deck.

BOILERS, &c.—(Letter for record B) Manufacturers of Steel J. Spence & Son
 Total Heating Surface of Boilers 7014 sq ft Is Forced Draft fitted Yes No. and Description of Boilers 3 - Cyl. Single Ends
 Working Pressure 213 Tested by hydraulic pressure to 426 Date of test 18-10-06 No. of Certificate 7337
 Can each boiler be worked separately Yes Area of fire grate in each boiler 56 sq ft No. and Description of Safety Valves to each boiler 2 Springs
 Area of each valve 9-6 Pressure to which they are adjusted 218 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 24 Main dia. of boilers 14-6 Length 12-0 Material of shell plates S
 Thickness 1-15/32 Range of tensile strength 28-30/52 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams d lap
 long. seams d shap Diameter of rivet holes in long. seams 1-15/32 Pitch of rivets 9-3/4 Lap of plates or width of butt straps 22-1/4
 Per centages of strength of longitudinal joint 91 Working pressure of shell by rules 226 Size of manhole in shell 16 x 12
 Size of compensating ring 9 x 1-15/32 No. and Description of Furnaces in each boiler 3 Main Material S Outside diameter 44
 Length of plain part top Thickness of plates bottom 5/8 Description of longitudinal joint welded No. of strengthening rings Yes
 Working pressure of furnace by the rules 228 Combustion chamber plates: Material S Thickness: Sides 2-1/32 Back 1-1/16 Top 2-1/32 Bottom 1-1/16
 Pitch of stays to ditto: Sides 7-3/4 x 7-7/8 Back 7-7/8 x 7-7/8 Top 7-7/8 x 7-7/8 If stays are fitted with nuts or riveted heads nut Working pressure by rules 243
 Material of stays lin Diameter at smallest part 2-36 Area supported by each stay 62 Working pressure by rules 245 End plates in steam space: Material S Thickness 1-1/16 Pitch of stays 16-1/2 x 14-3/4 How are stays secured d 2 x w Working pressure by rules 219 Material of stays S
 Diameter at smallest part 6-11 Area supported by each stay 243 Working pressure by rules 250 Material of Front plates at bottom S
 Thickness 1 Material of Lower back plate S Thickness 1 Greatest pitch of stays as per plan Working pressure of plate by rules 213
 Diameter of tubes 2-1/2 Pitch of tubes 3-3/4 x 3-3/4 Material of tube plates S Thickness: Front 1 Back 7/8 Mean pitch of stays 9-3/8
 Pitch across wide water spaces 13-1/2 Working pressures by rules 224 Girders to Chamber tops: Material S Depth and thickness of girder at centre 11-1/4 x 1-3/8 Length as per rule 33-7/16 Distance apart 7-5/8 Number and pitch of stays in each 3 - 7-5/8
 Working pressure by rules 230 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes
 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 —



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. One Description See attached report
 Made at _____ By whom made _____ When made _____ Where fixed Shetland
 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:— Crank Shaft, Tail shaft, propeller blade, pins top end, pins bottom end, pins main bearing & the set coupling bolts, fuel & bilge valves, sundry braces, Slide rods, Air pump rod, associated bolts & nuts, a few bars of iron & other gear.

The foregoing is a correct description,
 SWAN, HUNTER, & WIGHAM RICHARDSON, LTD. Manufacturer.

Dates of Survey while building
 During progress of work in shops— 1906 July 31 Aug 19 10 15 17 21 22 23 Sep 4 7 10 14 18 19 27 28 Oct 2 5 6 9 10 11 18 19 20 21 Nov 18 19 20 21 22
 During erection on board vessel— Dec 6
 Total No. of visits 37 Is the approved plan of main boiler forwarded herewith Yes
 " " " donkey " " Yes duplicate

Dates of Examination of principal parts—Cylinders Sept 1906 Slides Sept 1906 Covers Sept 1906 Pistons Sept 1906 Rods Sept 1906
 Connecting rods Sept 1906 Crank shaft Sept 1906 Thrust shaft Sept 1906 Tunnel shafts Sept 1906 Screw shaft Oct 1906 Propeller Nov 1906
 Stern tube Oct 1906 Steam pipes tested 11-10-06 Engine and boiler seatings Oct 1906 Engines holding down bolts Nov 1906
 Completion of pumping arrangements 4 Dec 1906 Boilers fixed Nov 1906 Engines tried under steam 30 Nov 1906
 Main boiler safety valves adjusted 30 Nov 1906 Thickness of adjusting washers 1 1/32 1 1/32 7/16 7/16 1 3/32 3/8 5/8
 Material of Crank shaft IS Identification Mark on Do. K.H. 1110 Material of Thrust shaft S Identification Mark on Do. Sept 1. H. 06
 Material of Tunnel shafts IS Identification Marks on Do. Sept 1. H. 06 Material of Screw shafts IS Identification Marks on Do. Sept 1. H. 06
 Material of Steam Pipes Steel Test pressure 640 lb.

General Remarks (State quality of workmanship, opinions as to class, &c.)
The material & workmanship is good.
The Mach^y is eligible in my opinion for classification & the record + I.M.C. 12.06.

It is submitted that
 this vessel is eligible for
 THE RECORD I.L.M.C. 12.06. F.D. ELEC: LIGHT.

John H. Heck
 10.12.06
 10.12.06

The amount of Entry Fee.. £ 3 : : : When applied for.
 Special £ 46.8 : : : 8 DEC 1906
 Donkey Boiler Fee £ : : : When received.
 Travelling Expenses (if any) £ : : : 11.12.06

Committee's Minute TUES. DEC 11 1906

Assigned + Imb 12.06
F.D. Elec. Lght

MACHINERY CERTIFICATE WRITTEN



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