

REPORT ON MACHINERY.

No. 4822

Port of AberdeenReceived at London Office 15 JAN 1904No. in Survey held at Aberdeen
Reg. Book.Date, first Survey 26th Aug 03 Last Survey 2nd Jan 04 1904.(Number of Visits 48)on the steel screw steamer "Skift"Master Mrs Brown.Built at Aberdeen.By whom built Wall Russell & Co LtdTons { Gross 506.4
Net 151.4
When built 1904.Engines made at Aberdeen.By whom made Wall Russell & Co Ltdwhen made 1904.Boilers made at 6By whom made 6when made 1904.Registered Horse Power 93.Owners Northern Co-operative Co. LtdPort belonging to Aberdeen.Nom. Horse Power as per Section 28 93Is Refrigerating Machinery fitted no.Is Electric Light fitted no.ENGINES, &c.—Description of Engines Triple ExpansionNo. of Cylinders 3No. of Cranks 3Dia. of Cylinders 14 1/2", 23 1/2", 38" Length of Stroke 30" Revs. per minute 100. Dia. of Screw shaft as per rule 8 1/4" Material of screw shaft scrap iron
as fitted 9 1/4"Is the screw shaft fitted with a continuous liner the whole length of the stern tube no.

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 ✓

If two

liners are fitted, is the shaft lapped or protected between the liners lapped.Length of stern bush 3' 1"Dia. of Tunnel shaft as per rule 4 3/4" Dia. of Crank shaft journals as per rule 4 3/4" Dia. of Crank pin 8 1/4" Size of Crank webs 12" x 6 1/4" Dia. of thrust shaft under collars 8 1/4" Dia. of screw 1 1/4" 0" Pitch of screw 1 1/4" 0" No. of blades 4 State whether moveable no Total surface 43.4 #.No. of Feed pumps 2 Diameter of ditto 2 1/4" Stroke 18" Can one be overhauled while the other is at work yes.No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 18" Can one be overhauled while the other is at work yes.No. of Donkey Engines Two Sizes of Pumps 5 1/4" x 3 1/2" x 5" Duplex (Feed) 8" x 8" x 10" Flywheel (Ballast) No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room one Centre 2 1/2" two wings 2" Storehold one Centre 2 1/2" In Holds, &c. Main Hold two 2" Aft hold well one 2 1/2"
Tunnel well one 2 1/2"No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump C. & L. Is a separate donkey suction fitted in Engine room & size yes: 2 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 none.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 Main Hold bilge suction 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.When were stern tube, propeller, screw shaft, and all connections examined in dry dock before launch Is the screw shaft tunnel watertight yes.Is it fitted with a watertight door yes worked from upper grating.BOILERS, &c.— (Letter for record (7)) Total Heating Surface of Boilers 1535 # Is forced draft fitted no.No. and Description of Boilers one, cyl^l, mult^l, single ended Working Pressure 180 lbs Tested by hydraulic pressure to 360.Date of test 25-11-03 Can each boiler be worked separately ✓ Area of fire grate in each boiler 51.5 # No. and Description of safety valves to each boiler 2 direct spring Area of each valve 5.939 # Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes.Smallest distance between boilers or uptakes and bunkers or woodwork no side bunkers Mean dia. of boilers 13 1/2" Length 10' 4" Material of shell plates S.Thickness 1 1/8" Range of tensile strength 27-32 Are they welded or flanged no Descrip. of riveting: cir. seams d. r. lap long. seams double straps.Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 1 row 8 1/4" 2 rows 4 3/8" Lap of plates or width of butt straps 1 1/8" x 1 1/8" outside 1 1/16" inside.Per centages of strength of longitudinal joint rivets 88.4 plate 85.6 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12".Size of compensating ring 28" dia x 1 1/8" No. and Description of Furnaces in each boiler 3: Brighton Material S Outside diameter 40 1/4"Length of plain part top 4' 0" bottom 4' 0" Thickness of plates top 1 1/8" bottom 1 1/8" Description of longitudinal joint weld No. of strengthening rings ✓Working pressure of furnace by the rules 184.6 Combustion chamber plates: Material S Thickness: Sides 5/8" Back 5/8" Top 5/8" Bottom 1 1/16"Pitch of stays to ditto: Sides 9" x 8" Back 9" x 8" Top 9" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 186.2Material of stays iron Diameter at smallest part 1 1/2" full Area supported by each stay 42 # Working pressure by rules 186.4 End plates in steam space:Material S Thickness 1" Pitch of stays 1 3/4" x 1 1/4" How are stays secured d. r. & w. Working pressure by rules 182.8 Material of stays ironDiameter at smallest part 2 1/16" Area supported by each stay 253 # Working pressure by rules 184.8 Material of Front plates at bottom S.Thickness 1 1/16" Material of Lower back plate S Thickness 1 1/16" Greatest pitch of stays 1 1/4" x 9" Working pressure of plate by rules 220.Diameter of tubes 3 1/2" rel Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S Thickness: Front 1" Back 3/4" Mean pitch of stays 1 1/8"Pitch across wide water spaces 1 1/2" Working pressures by rules F. 182.6 B. 181 Girders to Chamber tops: Material iron Depth andthickness of girder at centre 4 1/4" x 2" Length as per rule 30 1/2" Distance apart 8" Number and pitch of Stays in each 2: 9"Working pressure by rules 180.3 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler workedseparately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivetholes ✓ 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 ✓

DONKEY BOILER— No. one Description *critical multitubular*
Made at *Aberdeen* By whom made *Hall Russell & Co. Ltd* When made *1904* Where fixed *in wing of steel hold*
Working pressure *80*, tested by hydraulic pressure to *160*. No. of Certificate *384* Fire grate area *14.7* Description of safety valves *direct spring*.
No. of safety valves *2*. Area of each *4.9* Pressure to which they are adjusted *80*. If fitted with easing gear *yes*. If steam from main boilers can enter the donkey boiler *no*. Dia. of donkey boiler *5' 6"* Length *10' 3"* Material of shell plates *S*. Thickness *7/16"* Range of tensile strength *24-32* Descrip. of riveting long. seams *a. r. lap*. Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *3 1/4"*
Lap of plating *4 1/2"* Per centage of strength of joint Rivets *82.6* Thickness of shell crown plates *3/8"* Radius of dodged No. of Stays to do. *4*.
Dia. of stays *2 5/16"* Diameter of furnace Top *35"* Bottom *58 3/4"* Length of furnace *40"* Thickness of furnace plates *5/8"* Description of joint *Lap, Single rivet* Thickness of furnace crown plates *5/8"* Stayed by *Same as shell crown* Working pressure of shell by rules *100*.
Working pressure of furnace by rules *160*. Diameter of *tubes* *2 1/4"* Thickness of *tubes* plates *5/8"* Thickness of *stay* tubes *1/4"*

SPARE GEAR. State the articles supplied:— *2 top, & 2 bottom end bolts & nuts, 2 main bracing & 1 set Coupling bolts & nuts, 1 set each air, circulating, feed & bilge pump valves, 1 each main & donkey Check valve, 1 escape valve spring each size, 1 safety valve spring, bolts & nuts assorted, & iron of various sizes - 1 cast iron propeller.*

The foregoing is a correct description,

HALL, RUSSELL & CO., LTD.

Manufacturers of Main Engines, Main & Donkey Boilers—

James Hunter

Dates of Survey while building
During progress of work in shops— *Aug 26 Sept 2 3 7 11 16 21 22 25 29 Oct 1 2 6 13 16 20 21 23 28 30 Nov 2 4 5 6 9 10 12 13 16 17*
During erection on board vessel— *Dec 8 9 10 14 15 16 17 18 19 Jan 2* *(20 21 24 25 26 27 Dec 1-5)*
Total No. of visits *48* Is the approved plan of main boiler forwarded herewith *yes*.
" " " donkey " " " *yes*.

General Remarks (State quality of workmanship, opinions as to class, &c.)

*These engines and Boilers have been constructed under Special Survey in accordance with Rule requirements. The materials & workmanship, are good & efficient. When completed, and properly fitted on board, they were tried under steam at mooring, with satisfactory results, and are now in good working order, and in my opinion entitled to the record * L.M.C. 1.04. in the Register Book.*

It is submitted that
this vessel is eligible for
THE RECORD

L.M.C. 1.04.

Ans.
15.1.04.

15.1.04

The amount of Entry Fee. £ 1 : 0 :
Special .. £ 13 : 19 :
Donkey Boiler Fee .. £ 2 : 2 :
Travelling Expenses (if any) £ : :
14 - 1

When applied for, *14 Jan 1904*
When received, *18/1/04*

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

Committee's Minute TUES. 19 JAN 1904

Assigned

+ L.M.C. 1.04

MACHINERY CERTIFICATE
WRITTEN.



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Foundation