

REPORT ON MACHINERY.

No. 30,201
FRI. 13 OCT. 1917

Date of writing Report 12-10-17 18/10 1917 Port of Hull
No. in Survey held at Hull Date, First Survey 28.1.17 Last Survey 15.10.1917
Reg. Book. on the steel screw tug William Rivers (Number of Visits 61)
Master Built at Tilly By whom built Cochrane & Sons Ltd Tons { Gross 324
Engines made at Hull By whom made Jas. & Holmes & Co Ltd (1136) when made 1917-10
Boilers made at Hull By whom made Jas. & Holmes & Co Ltd (26) when made 1917-10
Registered Horse Power Owners British Admiralty Port belonging to
Nom. Horse Power as per Section 28 87 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks 3
Dia. of Cylinders 13"-23"-37" Length of Stroke 26" Revs. per minute 117 Dia. of Screw shaft as per rule 7.9" 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 ✓ If two
liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 35½"
Dia. of Tunnel shaft as per rule 7.04" Dia. of Crank shaft journals as per rule 7.39" Dia. of Crank pin 7½" Size of Crank webs 4½" x 11" Dia. of thrust shaft under
collars 7½" Dia. of screw 9-7½" Pitch of Screw 11-0" No. of Blades 4 State whether moveable no Total surface 332 sq ft
No. of Feed pumps one Diameter of ditto 2½" Stroke 14¾" Can one be overhauled while the other is at work ✓
No. of Bilge pumps one Diameter of ditto 2½" Stroke 14¾" Can one be overhauled while the other is at work ✓
No. of Donkey Engines one 3" ejector Sizes of Pumps 6", 4½" x 6" duplex No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room two 2" dia. In Holds, &c. one 2" dia in each compartment
all suction pipes connected to ejector ✓
No. of Bilge Injections one sizes 3½" Connected to condenser, or to circulating pump pumps a separate Donkey Suction fitted in Engine room & size 3" gauge
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 Forward sections How are they protected strong casing fixed with iron
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 8-6-17 of Stern Tube 8-6-17 Screw shaft and Propeller 8-6-17
Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons
Total Heating Surface of Boilers 1440 ft² Is Forced Draft fitted no No. and Description of Boilers one single ended
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 22-8-17 No. of Certificate 3230
Can each boiler be worked separately ✓ Area of fire grate in each boiler 48 sq ft No. and Description of Safety Valves to
each boiler two spring loaded Area of each valve 4.9" Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 8" lagged dia. of boilers 165" Length 10'-8" Material of shell plates S
Thickness 1½" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
long. seams P.D.B. Diameter of rivet holes in long. seams 1½" Pitch of rivets 8" Lap of plates or width of butt straps 18"
Per centages of strength of longitudinal joint rivets 85.9 Working pressure of shell by rules 202 Size of manhole in shell 16" x 12"
Size of compensating ring 7" x 1½" No. and Description of Furnaces in each boiler three plain Material S Outside diameter 40"
Length of plain part top 78½" bottom 69" Thickness of plates crown 7/16" Description of longitudinal joint welded No. of strengthening rings
Working pressure of furnace by the rules 206 Combustion chamber plates: Material S Thickness: Sides ¾" Back 23/32" Top ¾" Bottom ¾"
Pitch of stays to ditto: Sides 10" x 8" Back 9½" x 8½" Top 11" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 208
Material of stays steel Diameter at smallest part 2.07" Area supported by each stay 88" Working pressure by rules 211 End plates in steam space
Material S Thickness 17/32" Pitch of stays 19 x 17½" How are stays secured 7.7.14 Working pressure by rules 210 Material of stays S
Diameter at smallest part 7.5" Area supported by each stay 335" Working pressure by rules 233 Material of Front plates at bottom S
Thickness 15/16" Material of Lower back plate S Thickness 17/16" Greatest pitch of stays 13½" x 9½" Working pressure of plate by rules 216
Diameter of tubes 3½" Pitch of tubes 4½" Material of tube plates S Thickness: Front 15/16" Back 7/8" Mean pitch of stays 10"
Pitch across wide water spaces 14" Working pressures by rules 275 Girders to Chamber tops: Material S Depth and
thickness of girder at centre 11" x 1¾" Length as per rule 36.218 Distance apart 11" Number and pitch of stays in each three 8"
Working pressure by rules 201 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 ✓

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of air feed & bilge pump valves, one main & one donkey check valve, two valves for donkey pump, 6 junk ring studs & nuts, one safety valve spring, 3 condenser tubes, one set of fire bars, & a quantity of bolts & nuts, iron of various sizes.*

The foregoing is a correct description,

For **HOLMES & CO. LTD.**

Arthur Holmes

Manufacturer.

Dates of Survey while building { During progress of work in shops - - Jan 20. 23. Mar 5. 8. 14. 19. 23. 27. 29 Apr 2. 5. 11. 13. 16. 17. 18. 26. 27 May 4. 10. 15. 17.
During erection on board vessel - - 23. 29. July 1. 8. 14 July 26. 10. 13. 18. 21. 23. 24. 25. 27. 31 Aug 2. 13. 15. 17. 20. 21. 22. 24. 27. 30.
Total No. of visits 61

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts—Cylinders 6-7-17 Slides 21-8-17 Covers 2-8-17 Pistons 15-8-17 Rods 31-7-17
Connecting rods 24-7-17 Crank shaft 31-7-17 Thrust shaft 30-8-17 Tunnel shafts ✓ Screw shaft 6-6-17 Propeller 6-6-17
Stern tube 6-6-17 ✓ Steam pipes tested 5-10-17 Engine and boiler seatings 8-6-17 Engines holding down bolts 1-10-17
Completion of pumping arrangements 10-10-17 Boilers fixed 6-10-17 Engines tried under steam 10-10-17
Main boiler safety valves adjusted 6-10-17 Thickness of adjusting washers $7\frac{1}{32}$ & $1\frac{1}{32}$
Material of Crank shaft *Iron* Identification Mark on Do. 2002 FLS Material of Thrust shaft *Iron* Identification Mark on Do. 2016 FLS
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. 206 RFM
Material of Steam Pipes *solid drawn copper* Test pressure 400 lbs
Is an installation fitted for burning oil fuel *no* Is the flash point of the oil to be used over 150°F. ✓

Have the requirements of Section 49 of the Rules been complied with ☒

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *Theresa, Class*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society, the materials & workmanship are good, the boiler & steam pipes have been tested as above & found sound & tight. The machinery has been properly fitted & secured on board the vessel & on completion was tested under full power for two hours as required by the Admiralty & found satisfactory. The safety valves have been adjusted under steam & tested for accumulation which did not exceed 2 1/2 lbs.*

In my opinion the vessel is eligible for the record & L.M.C. 10-17

It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 10.17.

J.W.D.
J.M. 20/10/17

The amount of Entry Fee ... £ :
Special ... £ 27 0
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ 12/3

When applied for, 12/10 1917
When received, 31. 10. 1917

Frank A. Sturgeon

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

Committee's Minute TUE OCT 23 1917

Assigned

+ L.M.C. 10.17

MAINTENANCE CERTIFICATE
UNITED



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Foundation