

# REPORT ON MACHINERY

No. 30344

Date of writing Report 19-1-18 19 When handed in at Local Office 25/1/18 Port of SAT. 26 JAN 1918

No. in Survey held at Hull Date, First Survey 22-8-17 Last Survey 23-1-18 19  
Reg. Book. on the steel screw tug "Henry Ford" (Number of Visits 35)

Master Built at Lelby By whom built Cochrane & Sons Ltd Tons { Gross 324 Net 132

Engines made at Hull By whom made Chas. D. Holmes & Co. Ltd (A.S.) when made 1918-1

Boilers made at Hull By whom made Chas. D. Holmes & Co. Ltd (A.S.) when made 1918-1

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  
No. of Cylinders 13-23-37 Length of Stroke 26 Revs. per minute 116 Dia. of Screw shaft as per rule 7.9 Material of screw shaft as fitted 8.2

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  
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 shafts are fitted, is the shaft lapped or protected between the liners Length of stern bush 35 1/2  
Dia. of Tunnel shaft as per rule 7.04 Dia. of Crank shaft journals as per rule 7.39 Dia. of Crank pin 7 1/2 Size of Crank webs 4 7/8 x 1 1/2 Dia. of thrust shaft under  
No. of blades 4 State whether moveable no Total surface 33 sq ft

No. of Feed pumps one Diameter of ditto 2 5/8 Stroke 14 3/4 Can one be overhauled while the other is at work  
No. of Bilge pumps one Diameter of ditto 2 5/8 Stroke 14 3/4 Can one be overhauled while the other is at work

No. of Donkey Engines one x 3 extra Sizes of Pumps 6, 4 1/4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
Engine Room Two 2' dia. In Holds, &c. one 2' dia. in each compartment

All suction pipes also connected to yeets  
No. of Bilge Injections one sizes 3 1/2 Connected to condenser, to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 3' extra

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  
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

How are they protected strong casings  
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  
Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

MANIFIESTS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons & Stewart & Lloyd

Is Heating Surface of Boilers 1440 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended  
Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 20-12-17 No. of Certificate 3260

Can each boiler be worked separately Area of fire grate in each boiler 48 sq ft No. and Description of Safety Valves to  
boiler Two spring loaded Area of each valve 4.9 sq in Pressure to which they are adjusted 205 Are they fitted with easing gear yes

Least distance between boilers or uptakes and bunkers on woodwork 8' 1/2 lagged mean dia. of boilers 16.5 Length 10'-8" Material of shell plates steel  
Thickness 1 5/16 Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double

seams V.R.D.B. Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 5/8 Top of plates or width of butt straps 18"  
Percentage of strength of longitudinal joint rivets 85.9 Working pressure of shell by rules 202 Size of manhole in shell 16" x 12"

of compensating ring 7 x 1 1/4 No. and Description of Furnaces in each boiler Three plain Material steel Outside diameter 40"  
Thickness of plain part top 7 1/2 bottom 6.9 Thickness of plates crown 7 13/16 Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 206 Combustion chamber plates: Material steel Thickness: Sides 3/4 Back 2 3/32 Top 3/4 Bottom 3/4  
No. of stays to ditto: Sides 10' x 8" Back 9 3/4' x 8 3/4" Top 11' x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 208

Material of stays steel Area at smallest part 2.07 sq in Area supported by each stay 88 Working pressure by rules 211 End plates in steam space:  
Material steel Thickness 1 7/32 Pitch of stays 19 x 17 1/2 How are stays secured R. 7 x 1/2 Working pressure by rules 210 Material of stays steel

Area at smallest part 7.5 sq in Area supported by each stay 335 Working pressure by rules 233 Material of Front plates at bottom steel  
Thickness 1 5/16 Material of Lower back plate steel Thickness 1 5/16 Greatest pitch of stays 13 3/4 x 9 9/16 Working pressure of plate by rules 216

Number of tubes 3 1/2 Pitch of tubes 4 7/8 Material of tube plates steel Thickness: Front 1 5/16 + 3/4 Back 7/8 Mean pitch of stays 10"  
Pitch across wide water spaces 14" Working pressures by rules 275 Girders to Chamber tops: Material steel Depth and

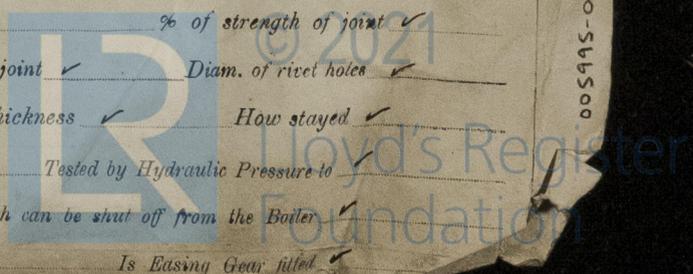
Thickness of girder at centre 11' x 1 3/4 Length as per rule 36 218 Distance apart 11" Number and pitch of stays in each Three 8"  
Working pressure by rules 201 Steam dome: description of joint to shell % of strength of joint

Material Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes  
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to  
Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

S 470-510900-56500



IS A DONKEY BOILER FITTED? *Yes*

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 bridge pump valves, six pump ring studs & nuts, one main & one donkey check valve, two valves for donkey pump, one safety valve spring, 3 condenser tubes, one set of fire bars & a quantity of bolts & nuts run of various sizes.*

The foregoing is a correct description,

for **CHARLES D. HOLMES & CO. LTD.**  
*Charles D. Holmes* Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1917:— Aug. 22. Sep. 26. 28. Oct. 8. 9. 11. 24. 25. 29. 30. Nov. 2. 5. 7. 9. 12. 13. 15. 19  
{ During erection on board vessel --- } 23. 27. 30. Dec. 4. 8. 12. 17. 20. 27. 1918:— Jan. 2. 7. 9. 10. 14. 15. 21. 23.  
Total No. of visits *35*

Is the approved plan of main boiler forwarded herewith *dup already sent*  
" " " donkey " " "

Dates of Examination of principal parts—Cylinders *2-11-17* Slides *13-11-17* Covers *23-11-17* Pistons *23-11-17* Rods *13-11-17*  
Connecting rods *19-11-17* Crank shaft *19-11-17* Thrust shaft *23-11-17* Tunnel shafts  Screw shaft *9-10-17* Propeller *9-10-17*  
Stern tube *8-10-17* Steam pipes tested *11-10-17* Engine and boiler seatings *11-10-17* Engines holding down bolts *7-1-18*  
Completion of pumping arrangements *15-1-18* Boilers fixed *14-1-18* Engines tried under steam *15-1-18*  
Completion of fitting sea connections *11-10-17* Stern tube *11-10-17* Screw shaft and propeller *11-10-17*  
Main boiler safety valves adjusted *14-1-18* Thickness of adjusting washers *7/16 & 9/16*  
Material of Crank shaft *Iron* Identification Mark on Do. *2056 F.L.S.* Material of Thrust shaft *Wt* Identification Mark on Do. *2058 F.L.S.*  
Material of Tunnel shafts  Identification Marks on Do.  Material of Screw shafts *Iron* Identification Marks on Do. *2030 F.L.S.*  
Material of Steam Pipes *solid drawn copper* Test pressure *400*  
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 *Thursey Class*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery for 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 by hydraulic pressure as above & found sound & tight. The machinery has been properly fitted & secured on board & on completion 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 218 lbs. In my opinion the vessel is eligible for the record & L.M.C. 1-18.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1. 18.

*K.W.D.*  
*J.M.* 29/1/18.

*Frank L. Sturgeon*  
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ : :  
Special ... £ 27 : 0 :  
Donkey Boiler Fee *J.* £ : :  
Travelling Expenses (if any) £ : 6/2 :  
When applied for, 25/1/1918  
When received, 31-1-1918

Committee's Minute  
Assigned  
TUE JAN 29 1918  
*7 L.M.C. 1. 18.*



Lloyd's Register Foundation

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.