

REPORT ON MACHINERY.

No. 30,322

Received at London Office WED. 9-JAN. 1918

Date of writing Report 4-1-18 10 When handed in at Local Office 8-1-17 10 Port of Hull
 No. in Survey held at Hull Date, First Survey 13/8/17 Last Survey 5-1-18 19
 Reg. Book. on the steel screw tugboat *Trader Laves* (Number of Plates 34) Gross 324 Tons Not 132
 Master Built at Selby By whom built Cochrane Bros & Co. When built 1918-1
 Engines made at Hull By whom made Chas. & Holmes 16" L¹ (A 6) when made 1918-1
 Boilers made at Hull By whom made Chas. & Holmes 16" L¹ (A 20) 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 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 118 ✓ 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 334 sq ft ✓
 No. of Feed pumps one ✓ Diameter of ditto 27½" ✓ Stroke 14¾" ✓ Can one be overhauled while the other is at work ✓
 No. of Bilge pumps one ✓ Diameter of ditto 27½" ✓ Stroke 14¾" ✓ Can one be overhauled while the other is at work ✓
 No. of Donkey Engines one 43" ✓ 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 also connected to water ✓
 No. of Bilge Injections one size 3½" ✓ Connected to condenser or to circulating pump pump ✓ Is a separate Donkey Suction fitted in Engine room & size 3" ✓
 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 suction ✓ How are they protected strong 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 28-9-17 ✓ of Stern Tube 28-9-17 ✓ Screw shaft and Propeller 28-9-17 ✓
 Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S ✓) Manufacturers of Steel J. Spence & Sons ✓
 Total Heating Surface of Boilers 1440 ft² ✓ Is Forced Draft fitted no ✓ No. and Description of Boilers one single ended ✓
 Working Pressure 200 lb ✓ Tested by hydraulic pressure to 400 lb ✓ Date of test 13-12-17 ✓ No. of Certificate 3257 ✓
 Can each boiler be worked separately ✓ Area of fire grate in each boiler 484 ft² ✓ 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 ✓ Are they fitted with easing gear yes ✓
 Smallest distance between boilers or uptakes and bunkers or woodwork 8' 12" lagged ✓ Mean dia. of boilers 165" ✓ Length 10'-8" ✓ Material of shell plates steel ✓
 Thickness 1 15/16" ✓ Range of tensile strength 28-32 tons ✓ Are the shell plates welded or flanged no ✓ Descrip. of riveting: cir. seams double ✓
 long. seams L.R.B.B. ✓ Diameter of rivet holes in long. seams 1½" ✓ Pitch of rivets 8 5/8" ✓ Top of plates or width of butt straps 18" ✓
 Per centages of strength of longitudinal joint rivets 85-9 ✓ plate 85-6 ✓ Working pressure of shell by rules 202 ✓ Size of manhole in shell 16" x 12" ✓
 Size of compensating ring 7' x 1 15/16" ✓ No. and Description of Furnaces in each boiler three plain ✓ Material steel ✓ Outside diameter 40" ✓
 Length of plain part top 78½" ✓ bottom 69" ✓ Thickness of plates crown 7 13/16" ✓ Description of longitudinal joint welded ✓ No. of strengthening rings ✓
 Working pressure of furnace by the rules 216 ✓ Combustion chamber plates: Material steel ✓ Thickness: Sides 3/4" ✓ Back 23/32" ✓ Top 3/4" ✓ Bottom 3/4" ✓
 Pitch of stays to ditto: Sides 10" x 8" ✓ Back 9 5/8" x 8 5/8" ✓ Top 11" x 8" ✓ If stays are fitted with nuts or riveted heads nuts ✓ Working pressure by rules 202 ✓
 Material of stays steel ✓ Diameter at smallest part 2 0/8" ✓ 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 7 7/8" ✓ How are stays secured 8" x 1 1/4" ✓ Working pressure by rules 210 ✓ Material of stays steel ✓
 Diameter at smallest part 7 5/8" ✓ 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 9/16" ✓ Greatest pitch of stays 13 3/4" x 9 9/16" ✓ Working pressure of plate by rules 216 ✓
 Diameter of tubes 32" ✓ Pitch of tubes 4 7/8" ✓ Material of tube plates steel ✓ Thickness: Front 15 5/16" x 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 ✓ 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 valve pump valves, one main & one donkey chest valve, two valves for donkey pump, six pump 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 CHARLES D. HOLMES & CO. LTD.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- { *1917: Aug 13, Sep 4, 24, 25, 26, 28, Oct 11, 17, 24, 25, 29, 30, Nov 2, 5, 7, 9, 12, 13, 19*
During erection on board vessel -- { *23, 24, 27, 30, Dec 3, 4, 8, 12, 13, 17, 20, 21, 22, 1918: Jan 1, 5*
Total No. of visits *34*

Is the approved plan of main boiler forwarded herewith? *Yes already sent*

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *5-11-17* Slides *5-11-17* Covers *5-11-17* Pistons *5-11-17* Rods *24-10-17*

Connecting rods *29-10-17* Crank shaft *29-10-17* Thrust shaft *5-11-17* Tunnel shafts ☒ Screw shaft *26-9-17* Propeller *26-9-17*

Stern tube *24-9-17* Steam pipes tested *19-12-17* Engine and boiler seatings *28-9-17* Engines holding down bolts *3-12-17*

Completion of pumping arrangements *22-12-17* Boilers fixed *21-12-17* Engines tried under steam *22-12-17*

Main boiler safety valves adjusted *21-12-17* Thickness of adjusting washers *7 3/4" & 3/8"*

Material of Crank shaft *Iron* Identification Mark on Do. *2067 FLS* Material of Thrust shaft *Iron* Identification Mark on Do. *2054 FLS*

Material of Tunnel shafts ☒ Identification Marks on Do. ☒ Material of Screw shafts *Steel* Identification Marks on Do. *2018 FLS*

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 *Thrace, class. "Hull"*

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 1/3 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.

The amount of Entry Fee ... £ : :
Special *27* : 0 :
Donkey Boiler *10* : :
Travelling Expenses (if any) £ : *12/3* :
When applied for, *28/12/1917*
When received, *31/12/1917*

Committee's Minute

Assigned

FRI. 11 JAN 1918

+ L.M.C. 1.18

Frank A. Sturgeon

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



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Foundation