

REPORT ON MACHINERY

No. 29350

Received at London Office TUE - 6. IIIN. 1916

Date of writing Report 10-5-16 in Hull When handed in at Local Office 10/5 1916 Port of Hull
 No. in Survey held at Hull Date, First Survey 15-6-15 Last Survey 9-5-16 19
 / Reg. Book. upt 28 on the steel screw tugger Flintshire (Number of Volls 65) Tons { Gross 215
 Master Lilly Built at Lilly By whom built Cochrane & Sons Ltd When built 1916-5
 Engines made at Hull By whom made C. D. Holmes & Co Ltd (101116) when made 1916-5
 Boilers made at Hull By whom made C. D. Holmes & Co Ltd when made 1916-5
 Registered Horse Power 66 Owners North Lincolnshire Steam Tug Co Port belonging to Grimsby
 Nom. Horse Power as per Section 28 66 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 12"-21"-34" Length of Stroke 24" Revs. per minute as per rule 6.99" Material of Iron
 as fitted 7 1/8" screw shaft
 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 no If two
 liners are fitted, is the shaft lapped or protected between the liners no Length of stern bush 35 1/2"
 Dia. of Tunnel shaft as per rule 6.26" Dia. of Crank shaft journals as per rule 6.57" Dia. of Crank pin 6 3/4" Size of Crank webs 4 1/2" x 13" Dia. of thrust shaft under
 collars 6 3/4" Dia. of screw 8-6" Pitch of Screw 10'-6" No. of Blades 4 State whether moveable no Total surface 28 ft
 No. of Feed pumps one Diameter of ditto 2 1/8" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps one Diameter of ditto 2 1/8" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines one 2 1/2 hp Sizes of Pumps 5", 2 3/4" x 5" 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

No. of Bilge Injections one sizes 3" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2 1/2" dia
 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 wooden 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
 Dates of examination of completion of fitting of Sea Connections 15-10-15 of Stern Tube 15-10-15 Screw shaft and Propeller 15-10-15
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from yes

BOILERS, &c. — (Letter for record S) Manufacturers of Steel Steel 6' of Scotland
 Total Heating Surface of Boilers 10704 ft Is Forced Draft fitted no No. and Description of Boilers one single ended
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 31-3-16 No. of Certificate 3133
 Can each boiler be worked separately yes Area of fire grate in each boiler 33 1/4 ft No. and Description of Safety Valves to
 each boiler two spring loaded Area of each valve 3.9 sq" Pressure to which they are adjusted 185 Are they fitted with easing gear yes
 Smallest distance between boilers on uptakes and bunkers on woodwork 6" Int dia. of boilers 147 1/16" Length 10'-0" Material of shell plates Steel
 Thickness 1 1/32" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams J.R.D.B. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 15"
 Per centages of strength of longitudinal joint 85.6 Working pressure of shell by rules 184 Size of manhole in shell 16" x 12"
 Size of compensating ring 7" x 1" No. and Description of Furnaces in each boiler Two plain Material Steel Outside diameter 43"
 Length of plain part top 76" Thickness of plates bottom 7 25/32" Description of longitudinal joint welded No. of strengthening rings one ft
 Working pressure of furnace by the rules 184 Combustion chamber plates: Material Steel Thickness: Sides 1 1/16" Back 2 1/32" Top 1 1/16" Bottom 1 1/16"
 Pitch of stays to ditto: Sides 9" x 10" Back 9 3/4" x 8 1/2" Top 10" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181
 Material of stays Steel Diameter at smallest part 2.40" Area supported by each stay 108 sq" Working pressure by rules 200 End plates in steam space:
 Material Steel Thickness 1 1/16" Pitch of stays 17" x 17" How are stays secured 8 x 9 ft Working pressure by rules 185 Material of stays Steel
 Diameter at smallest part 5.79" Area supported by each stay 289 sq" Working pressure by rules 208 Material of Front plates at bottom Steel
 Thickness 7/8" Material of Lower back plate Steel Thickness 29/32" Greatest pitch of stays 14 1/2" x 9 3/8" Working pressure of plate by rules 190
 Diameter of tubes 3 1/2" Pitch of tubes 5" x 5" Material of tube plates Steel Thickness: Front 7/8" x 3/4" double Back 7/8" Mean pitch of stays 10"
 Pitch across wide water spaces 15" Working pressures by rules 249 Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8" x 1 3/4" Length as per rule 32.43" Distance apart 8 1/2" Number and pitch of stays in each two 10"
 Working pressure by rules 192 Superheater or Steam chest; how connected to boiler yes Can the superheater be shut off and the boiler worked
 separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet
 holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes
 If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes
 Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

W1455-0137

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 circulating, feed bilge pump valves, 6 piston studs & nuts, one set of donkey pump valves, one main & one donkey check valve, two safety valve springs, one escape valve spring each size 3 boiler & 6 condenser tubes & a quantity of bolts & nuts & iron of various sizes.*

The foregoing is a correct description,

P. pro CHARLES D. HOLMES & CO. LTD.

Harold L. Shearson DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1915: Jan 15, 21, 30 Jul 12, 16, 20 Aug 19, 25, 29 Sep 14, 20 Oct 5, 8, 11, 12, 14, 15, 23
During erection on board vessel - - - Nov 2, 16 Dec 15, 17, 22, 30, 31 1916: Jan 5, 10, 13, 18, 20, 25, 31 Feb 3, 7, 8, 10, 11, 14, 17, 22, 24
Total No. of visits 65
Is the approved plan of main boiler forwarded herewith *yes.*

Dates of Examination of principal parts: Cylinders 25-2-16 Slides 11-4-16 Covers 29-2-16 Pistons 11-4-16 Rods 3-4-16
Connecting rods 5-4-16 Crank shaft 28-3-16 Thrust shaft 30-3-16 Tunnel shafts ✓ Screw shaft 14-10-15 Propeller 14-10-15
Stern tube 9-10-15 Steam pipes tested 28-4-16 Engine and boiler seatings 15-10-15 Engines holding down bolts 25-4-16
Completion of pumping arrangements 9-5-16 Boilers fixed 4-5-16 Engines tried under steam 9-5-16
Main boiler safety valves adjusted 29-4-16 Thickness of adjusting washers 7 5/16 & 9/16
Material of Crank shaft *Iron* Identification Mark on Do. 1573 FLS Material of Thrust shaft *Iron* Identification Mark on Do. 745 PDDW
Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Iron* Identification Marks on Do. 1533 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? *no* ✓ If so, state name of vessel ✓

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 by hydraulic pressure as above & found sound & good. The machinery has been properly fitted & secured on board the vessel & on completion was tried under steam under full working conditions & found satisfactory. The safety valves have been tested for accumulation which did not exceed 187 lbs. In my opinion this vessel is eligible for the record & L.M.C. 5.16*

It is submitted that this vessel is eligible for THE RECORD + LMC 5.16.

J.W.D. 6/6/16

The amount of Entry Fee ... £ 1 : 0 :
Special ... £ 9 : 18 :
Donkey Boiler Fee ... £ 1 : 0 :
Travelling Expenses (if any) £ 8/2 :
When applied for, 2/6/1916
When received, 28/6/16

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

Committee's Minute FRI - 9 JUN 1916

Assigned *+ L.M.C. 5.16*

MACHINERY APPROPRIATE WRITTEN