

REPORT ON MACHINERY.

No. 70583

Received at London Office FRI. JAN. 1918.

Date of writing Report 28th Dec. 1917 When handed in at Local Office 19 Port of NEWCASTLE-ON-TYNE
 No. in Survey held at Newcastle Date, First Survey 19th Jun 1917 Last Survey 18th Dec. 1917
 Reg. Book. on the S.S. "H. A. Grange" (Number of Volls 52) Gross 3100 Tons
 Master Built at Newcastle By whom built Armstrong Whitworth & Co When built 1917
 Engines made at Newcastle By whom made H. & Marine Eng Co 2309 when made 1917
 Boilers made at do By whom made do when made 1917
 Registered Horse Power Owners The Shipping Controller Port belonging to London
 Nom. Horse Power as per Section 28 430 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 25" - 41" - 68" Length of Stroke 45" Revs. per minute 80 Dia. of Screw shaft as per rule 13.52" Material of Iron
 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 yes If two
 liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5' - 0"
 Dia. of Tunnel shaft as per rule 12.41" Dia. of Crank shaft journals as per rule 13.03" Dia. of Crank pin 13 1/4" Size of Crank webs 27 1/2" x 8 3/4" Dia. of thrust shaft under
 collars 13 1/4" Dia. of screw 16' - 0" Pitch of Screw 16' - 3" No. of Blades 4 State whether moveable no Total surface 75 sq ft
 No. of Feed pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 3 Sizes of Pumps 10 1/2" x 12 1/2" x 21", 9 1/2" x 12" x 18", 9 1/2" x 7" x 18" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Four 3" In Holds, &c. Fore hold 2-3", Aft main hold 2-3", Aft hold 2-2 1/2", Aft hold well 1-3 1/2", Tunnel well 1-2 1/2"
 No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 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 Both
 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 Hold suction How are they protected Wood 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 4-10-17 of Stern Tube 11-10-17 Screw shaft and Propeller 14-11-17
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door no worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Sons
 Total Heating Surface of Boilers 6324 sq ft Is Forced Draft fitted yes No. and Description of Boilers Three, single-ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 2-26-10-17 No. of Certificate 2-9016
 Can each boiler be worked separately yes Area of fire grate in each boiler 51.7 sq ft No. and Description of Safety Valves to
 each boiler Two, spring Area of each valve 8.29 sq in 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 6' - 8" Mean dia. of boilers 13' - 9 3/4" Length 11' - 8 1/2" Material of shell plates Steel
 Thickness 1 1/8" Range of tensile strength 28 3/4 - 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 8. Lap
 long. seams 8. S. P. Riv. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 18"
 Per centages of strength of longitudinal joint 8.6 Working pressure of shell by rules 187 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring Flanged No. and Description of Furnaces in each boiler 3, Slightone Material Steel Outside diameter 43"
 Length of plain part top 17" Thickness of plates bottom 32" Description of longitudinal joint Welded No. of strengthening rings
 Working pressure of furnace by the rules 190 lbs Combustion chamber plates: Material Steel Thickness: Sides 11/16" Back 3/4" Top 11/16" Bottom 11/16"
 Pitch of stays to ditto: Sides 9" x 9 3/8" Back 10 1/2" x 9" Top 9" x 9 3/8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 193 lbs
 Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 84.3 sq in Working pressure by rules 216 lbs End plates in steam space:
 Material Steel Thickness 1 1/32" Pitch of stays 23 3/4" x 19 1/2" How are stays secured on 11" Working pressure by rules 181 lbs Material of stays Steel
 Diameter at smallest part 8.29" Area supported by each stay 46.3 sq in Working pressure by rules 186 lbs Material of Front plates at bottom Steel
 Thickness 31/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 180 lbs
 Diameter of tubes 2 3/4" Pitch of tubes 4" x 4" Material of tube plates Steel Thickness: Front 31/32" Back 3/4" Mean pitch of stays 10"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 184 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 10 1/2" x 1 1/2" Length as per rule 35 1/2" Distance apart 9 3/8" Number and pitch of stays in each 3-9"
 Working pressure by rules 200 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked
 separately yes 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 yes 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, two bottom-end & two main-bearing bolts & nuts, a set of coupling bolts, a set of feed & bilge pump valves, a quantity of assorted bolts nuts & iron, six feed check valves, 12 junk ring studs & nuts, a propeller & H.P. piston valves.*

The foregoing is a correct description,

FOR THE NORTH EASTERN MARINE ENGINEERING CO. LD.

S. J. Harrison

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *1917 Jan 19-22 Feb 2-23 Aug 3-10-15-21-24-28-30-10-6-10-12-13-17-21-24-25-27-28 Oct 1-4-5-8*
{ During erection on board vessel -- } *10-11-12-15-16-17-18-19-22-24-25-26-29-30 Nov 2-5-6-8-14-16-19-21-23-28 Dec 3-5-18*
Total No. of visits *52*

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

" " " " " " " "

Dates of Examination of principal parts—Cylinders *8-10-17* Slides *5-10-17* Covers *2-11-17* Pistons *5-10-17* Rods *22-6-17*

Connecting rods *28-8-17* Crank shaft *24-9-17* Thrust shaft *6-9-17* Tunnel shafts *24-10-17* Screw shaft *8-10-17* Propeller *23-7-17*

Stern tube *1-10-17* Steam pipes tested *3-12-17* Engine and boiler seatings *4-10-17* Engines holding down bolts *19-11-17*

Completion of pumping arrangements *5-12-17* Boilers fixed *19-11-17* Engines tried under steam *5-12-17*

Main boiler safety valves adjusted *5-12-17* Thickness of adjusting washers PB. $P \frac{3}{8} S \frac{11}{32}$, CB. $P \frac{11}{32} S \frac{13}{32}$, SB. $P \frac{3}{8} S \frac{13}{32}$

Material of Crank shaft *Steel* Identification Mark on Do. *J. H. 9-17* Material of Thrust shaft *Steel* Identification Mark on Do. *J. H. 9-17*

Material of Tunnel shafts *Iron* Identification Marks on Do. *J. H. 10-17* Material of Screw shafts *Iron* Identification Marks on Do. *J. H. 10-17*

Material of Steam Pipes *Iron & Copper* Test pressure *540 lbs & 360 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 engines & boilers of this vessel have been constructed under special survey & the materials & workmanship are found to be good. The engines have been tried under steam & the boiler safety valves adjusted at the working pressure. The machinery is now in good & safe working condition & eligible in my opinion to have the notation of +LMC - 12, 17. A report on the electric installation will be forwarded when received from the Electrician.*

It is submitted that
this vessel is eligible for
THE RECORD + LMC 12 17. ED.

JWD
15/1/18

The amount of Entry Fee ... £ : :
Special ... £ *90-0-0*
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, *10 JAN 1918*
When received, *14-2-1918*

Committee's Minute *TUE JAN 15 1918*

Assigned *+ LMC 12 17*

MACHINERY
WRITTEN



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