

REPORT ON MACHINERY.

No. 73374

Received at London Office **24 JUL 1920**
Date of writing Report **24 July 1920** When handed in at Local Office **24 July 1920** Port of **Newcastle-on-Tyne**
No. in Survey held at **Hebburn & Jarrow** Date, First Survey **17 June 1918** Last Survey **16 July 1920**
Reg. Book. on the **% EASTERNER** **4. Kilham** (Number of Visits **2**) Gross **618** Tons Net **345**
Master Built at **Middlesbrough** By whom built **Smiths Dock Coy Ltd** When built **1918**
Engines made at **Middlesbrough** By whom made **Smiths Dock Coy Ltd** when made **1918**
Boilers made at **Middlesbrough** By whom made **Smiths Dock Coy Ltd** when made **1918**
Registered Horse Power Owners **Robinson Bros & Co.** Port belonging to **Newcastle-on-Tyne**
Nom. Horse Power as per Section 28 **116** Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c.—Description of Engines **Triple Expansion** No. of Cylinders **3** No. of Cranks **3**
Dia. of Cylinders **16-26-44** Length of Stroke **26** Revs. per minute Dia. of Screw shaft as per rule **8.5** 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 **Yes** If two
liners are fitted, is the shaft lapped or protected between the liners **Yes** Length of stern bush **48 1/2**
Dia. of Tunnel shaft as per rule **4.95** Dia. of Crank shaft journals as per rule **8.35** Dia. of Crank pin **8 3/4** Size of Crank webs **13x8 1/4** Dia. of thrust shaft under
collars **8 1/2** Dia. of screw **1 1/4** Pitch of Screw **8-6** No. of Blades **4** State whether moveable **No** Total surface **36 7/8**
No. of Feed pumps **2** Diameter of ditto **4"** Stroke **18** Can one be overhauled while the other is at work **Yes**
No. of Bilge pumps **one** Diameter of ditto **6"** Stroke **6"** Can one be overhauled while the other is at work **Yes**
No. of Donkey Engines **Belg. 4 cyls.** Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room **Belg. room. one 1 1/2". E.R. 2 1/2". Tunnel 2 1/2"** In Holds, &c. **7 P. 2 1/2". No 1 hold 1 of 2 1/2". inside**
No. 2 hold one of 2 1/2". (S) aft hold 1. 2 1/2". (P) 1. 2 1/2". (S)
No. of Bilge Injections **1** sizes **6** Connected to condenser, or to circulating pump **Pump** Is a separate Donkey Suction fitted in Engine room & size **Yes 2**
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 **Yes**
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 How are they protected
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 **Yes** Is it fitted with a watertight door **Yes** worked from **Closed by hand in Upper Room
opened by screw clamp.**

BOILERS, &c.—(Letter for record **S**) Manufacturers of Steel
Total Heating Surface of Boilers **1825 sq ft** Is Forced Draft fitted **No** No. and Description of Boilers **mes 2 Cyl. multitubular**
Working Pressure **200 lbs** Tested by hydraulic pressure to **400 lbs** Date of test **11.2.18** No. of Certificate **9187 R N**
Can each boiler be worked separately Area of fire grate in each boiler **57.5 sq ft** No. and Description of Safety Valves to
each boiler **two direct spring** Area of each valve **5.94 sq in** 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 **11** Mean dia. of boilers **156"** Length **11-6"** Material of shell plates **Steel**
Thickness **1 1/4"** Range of tensile strength **28/32 tons** Are the shell plates welded or flanged **No** Descrip. of riveting: cir. seams **SR Lap**
long. seams **TR JB S** Diameter of rivet holes in long. seams **1 1/4"** Pitch of rivets **9 7/16** Lap of plates or width of butt straps **19"**
Per centages of strength of longitudinal joint rivets **86.59%** Working pressure of shell by rules **200 lbs** Size of manhole in shell **16x12**
plate **85.56%** Size of compensating ring **2' 1 1/2" x 2' 1 1/2"** No. and Description of Furnaces in each boiler **3 corrugated** Material **Steel** Outside diameter **3'-5 3/4"**
Length of plain part top **7** Thickness of plates bottom **7/16** Description of longitudinal joint **weld** No. of strengthening rings **1**
Working pressure of furnace by the rules **210 lbs** Combustion chamber plates: Material **Steel** Thickness: Sides **1 1/16"** Back **1 1/16"** Top **1 1/16"** Bottom **1"**
Pitch of stays to ditto: Sides **8 3/4" x 9"** Back **8 3/4" x 9"** Top **8 3/4" x 9"** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **205 lbs**
Material of stays **Steel** Area at smallest part **2.03** Area supported by each stay **1875 sq in** Working pressure by rules **226 lbs** End plates in steam space:
Material **Steel** Thickness **1 3/16"** Pitch of stays **1 1/2" x 1 1/2"** How are stays secured **5 1/2" nut** Working pressure by rules **218 lbs** Material of stays **Steel**
Area at smallest part **2 3/4" dia** Area supported by each stay **306** Working pressure by rules **202** Material of Front plates at bottom **Steel**
Thickness **1"** Material of Lower back plate **Steel** Thickness **1"** Greatest pitch of stays **1 1/4" x 8 3/4"** Working pressure of plate by rules **241 lbs**
Diameter of tubes **2 1/2"** Pitch of tubes **3 3/4" x 3 7/8"** Material of tube plates **Steel** Thickness: Front **1"** Back **3/4"** Mean pitch of stays **9 3/32"**
Pitch across wide water spaces **13 1/4"** Working pressures by rules **204 lbs** Girders to Chamber tops: Material **Steel** Depth and
thickness of girder at centre **8 x 1 1/4"** Length as per rule **31 1/4"** Distance apart **8 1/2"** Number and pitch of stays in each **2 x 9" pitch**
Working pressure by rules **202** Steam dome: description of joint to shell % of strength of joint
Diameter 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

IS A DONKEY BOILER FITTED? *non*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end bolts nuts, two bottom end bolts nuts, two bottom end bolts nuts, spare coupling bolts nuts, spare valves & packets for pumps and a quantity of small parts & stores. mounted on, bolts nuts*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Cylinders *July 20* Slides *June 20* Covers *June 20* Pistons *June 20* Rods *July 20*

Connecting rods *July 20* Crank shaft *June 20* Thrust shaft *June 20* Tunnel shafts *June 20* Screw shaft *not drawn* Propeller *17.6.20*

Stern tube Steam pipes tested Engine and boiler seatings *8. July 20* Engines holding down bolts

Completion of pumping arrangements *8. July 20* Boilers fixed *8 July 20* Engines tried under steam *8 July 20*

Completion of fitting sea connections Stern tube *undr. dock. 17.6.20* Screw shaft and propeller *undr. dock. 17.6.20*

Main boiler safety valves adjusted *8 July 20* Thickness of adjusting washers *1 3/8 - 5 3/8*

Material of Crank shaft *steel* Identification Mark on Do. Material of Thrust shaft *steel* Identification Mark on Do.

Material of Tunnel shafts *steel* Identification Marks on Do. Material of Screw shafts *steel* Identification Marks on Do.

Material of Steam Pipes *iron* Test pressure *600 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 *hil clan vessel*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery and Boilers were originally built under the supervision and to the requirements of the "British Corporation." The Boilers scantlings comply with the plans approved by Lloyd's Register of Shipping. 25.9.17

The vessel was placed in dry dock. The propeller outside fastenings examined found efficient sea connections overhauled, sledge injection examined, (Tail shaft not drawn)

The cylinders, pistons, slide valves, crank, thrust & intermediate shaft, condenser, pump, opened out examined found, or put into good condition. The scantlings & sledge of Engines & Boilers checked noted as far as practicable. Boilers examined found satisfactory.

The off Boilers removed. The boiler fitted aft in way of fore boiler removed, sealings & fastenings made to suit. Together with the necessary ladders & gratings. Forced draught plant removed, one auxiliary feed donkey pump removed, unclean removed, Boilers tested under steam found satisfactory. The Safety Valves adjusted 205 lb. The Engines tried under steam (small at morning) and found satisfactory

In our opinion the vessel is now eligible for the notation of L M C. 7-20

The amount of Entry Fee ... £ : : When applied for,
Special ... £ 10 : 10 : 30 JUL 1920
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : 27/8 1920

Committee's Minute

Assigned

FRI. AUG. 6 1920

L M C 7. 20

Leonard S. Shallowcross

Engineer Surveyor to Lloyd's Register of Shipping.

TUE. NOV. 29 1921

CERTIFICATE WRITTEN



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