

REPORT ON MACHINERY.

No. 29710

Received at London Office FRI. 22 DEC. 1916

Date of writing Report 29th Dec. 1916 When handed in at Local Office

29/11/16 Port of Hull

No. in Survey held at Hull

Date, First Survey May 15th

Last Survey 24.11.1916

Reg. Book.

Hull on the steel SS "MAGRIK"

(Number of Vents 37

Gross 375

Master J. Allistoun Built at Selby

By whom built

Lechraue & Sons Ltd.

Engines made at Aberdeen

By whom made Hall, Russell & Co. Ltd.

When made 1916

Boilers made at Stockton

By whom made Riley Bros. Ltd.

when made 1916

Registered Horse Power

Owners R. Rex & Sons

Port belonging to Hull

Nom. Horse Power as per Section 28 58

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 10¹/₂, 18³/₈, 31¹/₂

Length of Stroke 21"

Revs. per minute 112

Dia. of Screw shaft

as per rule 6.54

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

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 2'-7"

Dia. of Tunnel shaft as per rule 5.5"

Dia. of Crank shaft journals as per rule 5.71"

Dia. of Crank pin 6¹/₂"Size of Crank webs 11¹/₂ x 4¹/₂"

Dia. of thrust shaft under

collars 7"

Dia. of screw 8'-6"

Pitch of Screw 9'-6"

No. of Blades 4

State whether moveable no

Total surface 2759 ft.

No. of Feed pumps 1

Diameter of ditto 2³/₁₆

Stroke 12"

Can one be overhauled while the other is at work

No. of Bilge pumps 1

Diameter of ditto 2¹/₄

Stroke 12"

Can one be overhauled while the other is at work

No. of Donkey Engines 2

Sizes of Pumps 5x3x6 & 5x5x6"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4-2"

one to donkey

In Holds, &c. 3-2"

at after end of hold

No. of Bilge Injections 1

sizes 4"

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size 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

no

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

yes

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 hold Suctions

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 14.9.16.

of Stern Tube 14.9.16.

Screw shaft and Propeller 14.9.16.

Is the Screw Shaft Tunnel watertight now

Is it fitted with a watertight door

worked from

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Tested by hydraulic pressure to

Date of test 15

No. of Certificate

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Per centages of strength of longitudinal joint

rivets

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top

Thickness of plates

bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

Bottom

Pitch of stays to ditto: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

End plates in steam space

Material

Thickness

Pitch of stays

How are stays secured

Working pressure by rules

Material of stays

Diameter at smallest part

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Thickness

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure of plate by rules

Diameter of tubes

Pitch of tubes

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Pitch across wide water spaces

Working pressures by rules

Girders to Chamber tops: Material

Depth and

thickness of girder at centre

Length as per rule

Distance apart

Number and pitch of stays in each

Working pressure by rules

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

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

Are they fitted with easing gear

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REVER
LOWER
Bowspr
Topmast
Rigging
Sails

IS A DONKEY BOILER FITTED? *no* If so, is a report now forwarded? ☒
SPARE GEAR. State the articles supplied: *Two each top and bottom end connecting rod bolts, nuts, two main bearing bolts nuts, one set of connecting bolts nuts, one set each feed & bilge pump valves, iron of various sizes, a quantity of assorted bolts, nuts etc., one set of air pump valves, 20 condenser ferrules, 4 piston bolts, 12 gauge glasses, 2 check valves.*

The foregoing is a correct description,
PER PRO **UNITED ENGINEERING CO. LTD.**
Thomas Tate Managing Director Manufacturer.
Dates of Survey *9/10 - May 22 29 Jun 8 16 30 Jul 15 8 13 Aug 29 11 23 30 Sep 14 Oct 17 18 19 20 25 27 28 30 31*
of Survey while building *During erection on board vessel - - - - - Nov 12 3 8 9 11 14 16 21 22 24 28*
Total No. of visits *37* Is the approved plan of main boiler forwarded herewith *Mbs Rj*

Dates of Examination of principal parts—Cylinders *HP 13.16 IP 27.16 LP 27.16* Slides *8.7.16* Covers *8.7.16* Pistons *2.8.16* Rods *2.8.16*
Connecting rods *13.7.16* Crank shafts *23.8.16* Thrust shafts *23.8.16* Tunnel shafts *✓* Screw shaft *2.8.16* Propeller *11.8.16*
Stern tube *11.8.16* Steam pipes tested *9.11.16* Engine and boiler seatings *14.9.16* Engines holding down bolts *1.11.16*
Completion of pumping arrangements *16.11.16* Boilers fixed *8.11.16* Engines tried under steam *22.11.16*
Main boiler safety valves adjusted *21.11.16* Thickness of adjusting washers *SV 13/32 PV 1/4 fall*
Material of Crank shaft *Steel* Identification Mark on Do. *1435* Material of Thrust shaft *Steel* Identification Mark on Do. *1435*
Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *1434*
Material of Steam Pipes *Copper Solid drawn* Test pressure *360lbs. hyd. pressure*
Is an installation fitted for burning oil fuel *✓* 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 *✓* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c.) *These engines have been originally built under Special Surber in accordance with the rules, they have now been overhauled and reconstructed, and with the boiler have been tried under full working conditions & found satisfactory, and are in my opinion eligible to be reclassified with record of +HMC 11.16 Note Engines built 1900, refitted 1916, in the Register book.*

For renewals & repairs see list attached.
As submitted that this vessel is eligible for THE RECORD + LMC 11.16 + NB 11.16 180 1/2 + NE 10.00 refitted 16 N.S. 11.16

The amount of Entry Fee ... £ 1 : 0 : 0 When applied for, *21/12 1916*
Special ... £ 5 : 7 : 0
Donkey Boiler Fee ... £ ... When received, *27/12 1916*
Travelling Expenses (if any) £ ... *16 1/4*
Committee's Minute *FRI DEC 29 1916*
Assigned *+ Lmb 11.16 + N.B 11.16 + N.E 10.00 refitted 16* MACHINERY CERTIFICATE WRITTEN

SS "MAGRIX" Renewals & repairs

All parts of engines opened out, examined, the following repairs carried out viz:-
HP cylinder tested to 360lbs. IP cylinder tested to 125lbs. LP cylinder & Condenser tested to 25lbs. all hydraulic pressure. HP piston rings renewed. IP piston renewed. LP piston renewed. New end welded on HP piston rod, rod skinned up & rebushed. IP & LP piston rods skinned up & rebushed. HP & LP valve spindle renewed. Bushes bored to suit. LP valve spindle skinned up & rebushed. HP top end connecting rod brasses renewed. HP valve spindle guide brasses renewed. Air recirculating pump valve guards renewed. Crank shaft rebored in main bearing, & new gauge made for same. Thrust and Tail shafts renewed. Stop and Safety valve chests tested by hyd. press. to 360lbs.

These engines were originally fitted in the Steam Trawler BEN WYVIS. - Let Aberdeen rept. N° 6543.

J.G. Mackillop