

Rpt. 4.

REPORT ON MACHINERY.

No. 83416

Received at London Office

Hull Rph No. 32311
Date of writing Report 16th Aug 1920 When handed in at Local Office 17 AUG 1920 Port of Ipswich.
No. in Survey held at Gt Yarmouth Date, First Survey Jan Dec^r 1919 Last Survey 16th Aug 1920
Reg. Book. on the "INVERTEST." (Number of Visits)
Master Built at Hessel By whom built Messrs Henry Seaton N^o 283 When built
Engines made at Gt Yarmouth By whom made Messrs Crabtree & Co Ltd N^o 547 when made 1920.
Boilers made at Lincoln By whom made Ruston & Hornsby Ltd. when made 1920
Registered Horse Power Owners British Mexican Pet Co Port belonging to London
Nom. Horse Power as per Section 28 40 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No.

GINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 9 $\frac{1}{2}$ 15 24 Length of Stroke 18" Revs. per minute 130 Dia. of Screw shaft as fitted 5 $\frac{3}{4}$ Material of screw shaft Steel
the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight
the propeller boss ☒ 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
ers are fitted, is the shaft lapped or protected between the liners ☒ Length of stern bush 24 $\frac{3}{4}$ "
Dia. of Crank shaft journals as fitted 5" Dia. of Crank pin 5" Size of Crank webs 7 $\frac{1}{2}$ x 3 $\frac{1}{2}$ " Dia. of thrust shaft under
lars 5" Dia. of screw 6-4" Pitch of Screw 8-0" No. of Blades 4 State whether moveable No Total surface 15 $\frac{1}{2}$
of Feed pumps one Diameter of ditto 2 $\frac{1}{8}$ " Stroke 8" Can one be overhauled while the other is at work ☒
of Bilge pumps one Diameter of ditto 2 $\frac{1}{8}$ " Stroke 8" Can one be overhauled while the other is at work ☒
of Donkey Engines 1 WORTHINGTON Sizes of Pumps 5 x 12 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
Engine Room 2" dia. In Holds, &c. one 2" in forepeak & one 2" in
Bump room.
of Bilge Injections 1 sizes 3 $\frac{1}{2}$ " Connected to condenser, or to circulating pump C pump Is a separate Donkey Suction fitted in Engine room & size one 2"
all the bilge suction pipes fitted with roses ☒ Are the roses in Engine room always accessible ☒ Are the sluices on Engine room bulkheads always accessible ☒
all connections with the sea direct on the skin of the ship ☒ Are they Valves or Cocks Both.
they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates ☒ Are the Discharge Pipes above or below the deep water line Above
they each fitted with a Discharge Valve always accessible on the plating of the vessel ☒ Are the Blow Off Cocks fitted with a spigot and brass covering plate ☒
at pipes are carried through the bunkers ☒ How are they protected ☒
all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times ☒
the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges ☒
the Screw Shaft Tunnel watertight ☒ Is it fitted with a watertight door ☒ worked from ☒

ERS, &c.—(Letter for record) Manufacturers of Steel See separate report.
al Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers One cyl. mouth.
Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate
each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to
boiler Area of each valve Pressure to which they are adjusted Are they fitted with easing gear
least distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates
kness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams
seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps
percentages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell
of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter
th of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings
king pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom
of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules
rial of stays Area at smallest part Area supported by each stay Working pressure by rules End plates in steam space:
rial Thickness Pitch of stays How are stays secured Working pressure by rules Material of stays
at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom
kness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules
eter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays
across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and
ness of girder at centre Length as per rule Distance apart Number and pitch of stays in each
king pressure by rules Steam dome: description of joint to shell % of strength of joint
eter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
of rivets Working pressure of shell by rules Crown plates Thickness How stayed
ERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to
ate of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
iameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

003401-003408-0064

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IS A DONKEY BOILER FITTED?

None.

If so, is a report now forwarded?

SPARE GEAR.

State the articles supplied:—

Two top end, two bottom end, two main bearings & one set coupling bolts & nuts, one set air feed & bilge pump valves, one main & one donkey check valve, one spare burner & gear for oil fuel, & aux. pumps, a quantity of assorted bolts & nuts & iron of various sizes.

The foregoing is a correct description,

CRABTREE & CO., LTD

J. A. Chamberlain. Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1919 Dec 2, 10, 31 1920 Jan 14 Mar 25 Apr 9, 19 May 6 July 14, 26 Aug 10, 16
During erection on board vessel -- 1920 (Hull) Jun 10 Sep 25 Oct 1, 11, 18, 29 Nov 8, 15, 25, 26
Total No. of visits 22

Is the approved plan of main boiler forwarded herewith No

" " " donkey " " " "

Dates of Examination of principal parts—Cylinders 10-12-19 31-12-19 Slides 31-12-19 Covers 31-12-19 Pistons 10-12-19 31-12-19 Rods 10-12-19

Connecting rods 31-12-19 Crank shaft Thrust shaft INT 25-3-20 9-4-20 Screw shaft 9-4-20 6-5-20 Propeller 19-4-20 6-5-20

Stern tube 25-3-20 Steam pipes tested 1/10/20 Engine and boiler seatings 11/10/20 Engines holding down bolts 11/10/20

Completion of pumping arrangements 26/10/20 Boilers fixed 26/11/20 Engines tried under steam 26/11/20

Completion of fitting sea connections 25/9/20 Stern tube 25/9/20 Screw shaft and propeller 25/9/20

Main boiler safety valves adjusted 25/11/20 Thickness of adjusting washers 7/8" 5/8"

Material of Crank shaft Steel Identification Mark on Do. 3768 Material of Thrust shaft Steel Identification Mark on Do. 155

Material of Tunnel shafts Steel Identification Marks on Do. 155 Material of Screw shafts Steel Identification Marks on Do. 155

Material of Steam Pipes Copper Test pressure 360 lbs/sq in

Is an installation fitted for burning oil fuel Yes 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 Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel Eng N° 546. S.S. INVERTYNE.

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

The Engines have been constructed under Special Survey, in accordance with the approved plans, and Society's Rules, the materials and workmanship are sound and good.

The engines & boiler have been satisfactorily fitted on board the vessel. On completion they were examined while running full power trials in the Harbour.

The machinery throughout is now in good & efficient condition & eligible in my opinion to have the record F.L.M.C. - 20 marked in Red in the Society's Register Book, also fitted for oil fuel F.P. above 150°. The requirements of Section 49 of the rules are fully complied with.

It is submitted that this vessel is eligible for THE RECORD. F.L.M.C. 11. 20

FITTED FOR OIL FUEL 11.20 F.P. ABOVE 150°F.

Recd. 2/12/20

Robert Rae.

Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ 2-5-0

Special 1/2 d. per ... £ 4-10-0

Donkey Boiler Fee ... £ :

Travelling Expenses (if any) £ 2-14-6

Committee's Minute

Assigned

+ L.M.C. 11.20

Fitted for oil fuel 11.20 F.P. above 150°F

CERTIFICATE WRITTEN



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