

REPORT ON MACHINERY.

Received at London Office

Date of writing Report 15-12-1919 When handed in at Local Office 15-12-1919 Port of SHEFFIELD

No. in Survey held at SOWEBY BRIDGE Date, First Survey 29/2/19 Last Survey Nov 24 1920

Reg. Book. on the DRIFTER ENGINE for S.D. "RADIATION" (Number of Visits)

Master Built at Goole By whom built Osse S.B. Coy No. 68 When built 1920

Engines made at SOWEBY BRIDGE By whom made Messrs Pollitt & Niczelle Ltd. when made 1919

Boilers made at Lincoln By whom made Ruston & Hornsby when made 1919

Registered Horse Power 270 Owners Admiralty Port belonging to

Nom. Horse Power as per Section 28 424 43 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

Tons { Gross 95.97
Net 37.31

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 9 1/2" x 15 1/2" x 26" Length of Stroke 18" Revs. per minute 59 Dia. of Screw shaft 5 1/2" Material of screw shaft 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 no 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 24"

Dia. of Tunnel shaft 4 7/8" Dia. of Crank shaft journals 5 1/2" Dia. of Crank pin 5 1/2" Size of Crank webs 10 x 3 1/2" Dia. of thrust shaft under collars 5 1/2" Dia. of screw 6 9/16" Pitch of Screw 8 1/2" No. of Blades 4 State whether moveable no Total surface 18 sq ft

No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 9" Can one be overhauled while the other is at work no

No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 9" Can one be overhauled while the other is at work no

No. of Donkey Engines 1, 2 jets Sizes of Pumps 5 1/4 x 3 1/2 x 5 Duplex No. and size of Suctions connected to both Bilge and Donkey pumps two 2" dia.

In Engine Room two 2" dia. In Holds, &c. one 2" dia.

No. of Bilge Injections 1 sizes 2 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 2" jets

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 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 wood casing

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 yes

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 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 plate

Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings bottom

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Ton Bottom Working pressure by rules

Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads

Material of stays Area 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

Area 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 % of strength of joint

Working pressure by rules Steam dome: description of joint to shell Diam. of rivet holes

Diameter Thickness of shell plates Material Description of longitudinal joint Thickness How stayed

Pitch of rivets Working pressure of shell by rules Crown plates Tested by Hydraulic Pressure to

SUPERHEATER. Type Date of Approval of Plan Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Is Easing Gear fitted

Date of Test Pressure to which each is adjusted

Diameter of Safety Valve

Lloyd's Register
005901-005913-0249
005913-005913-0249

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two top end bolts & nuts; 2 bottom end bolts & nuts, 2 main bearings bolts; 1 set coupling bolts, 1 set air, feed, bilge, & circulating pump valves, 6 condenser tubes & 12 ferrules, 6 cylinder cover studs & nuts; 6 junk ring bolts & nuts; a quantity of bolts & nuts & iron of various sizes; and other articles as per specification.

The foregoing is a correct description, FOR POLLIT & WIGZELL, LIMITED.

E. Pollit

Manufacturer.

Dates of Survey while building: During progress of work in shops -- 2/2 - 4/3 - 2/3 - 2/4 - 2/4 - 1/5 - 2/5 - 12/6 - 2/6 - 2/7 - 2/7 - 2/7 - 1/8 - 1/8 - 4/11 - 15/11 - 1/12 - 10/12/19
During erection on board vessel --- 1919 Jun 12, Jul 1, Dec 30/19, Aug 30/20, Sep 6/20, Oct 6, Nov 16, 18.24
Total No. of visits 28.

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Cylinders 4/36 1/12/19 Slides 4/36 1/12/19 Covers 4/36 1/12/19 Pistons 4/36 1/12/19 Rods 20/36 1/12/19
Connecting rods 20/36 1/12/19 Crank shaft 15/36 1/12/19 Thrust shaft 15/36 1/12/19 Tunnel shafts — Screw shaft 15/36 1/12/19 Propeller 15/36 1/12/19
Stern tube 15/36 1/12/19 Steam pipes tested 6-9-20 Engine and boiler seatings 30-12-19 Engines holding down bolts 12-1-20
Completion of pumping arrangements 18-11-20 Boilers fixed 12-1-20 Engines tried under steam 16-11-20
Completion of fitting sea connections 1-7-19 Stern tube 1-7-19 Screw shaft and propeller 1-7-19
Main boiler safety valves adjusted 16-11-20 Thickness of adjusting washers P. 1/2 S 15/32
Material of Crank shaft *Steel* Identification Mark on Do. 4763 *S.R.M.* Material of Thrust shaft *Steel* Identification Mark on Do. 4703 *S.R.M.*
Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts *Iron* Identification Marks on Do. 4708 *S.R.M.*
Material of Steam Pipes *S.D. Copper.* Test pressure 400 lb per sq in

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 *Duffin Engine*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been built under special survey and in accordance with the specification and the Society's Rules, materials and workmanship all sound and good. This machinery has been properly fitted & secured on board the drifter "Radiation"; the steam pipe has been tested as above, & on completion the machinery was tested under full power as required by the Admiralty and found satisfactory. In my opinion the vessel is eligible for the record + LMC 11,20.*

It is submitted that this vessel is eligible for THE RECORD. + LMC. 11.20. *P. F. Fitzgerald.*

Roll
31/1/21

P. F. Weston
Engineer Surveyor to Lloyd's Register of Shipping.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ : : When applied for, 15/24 1919
Special ... £ 9-0-0 : :
Donkey Boiler Fee ... £ : : When received, 1/12 1920
Travelling Expenses (if any) £ 4 : 10 : 9/6 1920
Installing Mch. 8/12/20
Committee's Minute TUE. JAN. 4 1921

Assigned + LMC 11.20

CERTIFICATE WRITTEN



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Rpt. 5a.
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