

Rpt. 4.

REPORT ON MACHINERY.

No. 30,303

Date of writing Report 21-12-17 When handed in at Local Office 24-12-17 Port of Hull
No. in Survey held at Hull Date, First Survey Oct 4th 1916 Last Survey 18-12-17
Reg. Book. on the steel screw steamer "R.T.A. Francis"
Master Built at Hull By whom built Carlisle & Co
Engines made at Hull By whom made Carlisle & Co
Boilers made at Hull By whom made Carlisle & Co
Registered Horse Power Owners British Admiralty
Nom. Horse Power as per Section 28 603 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
When built 1917-12 when made 1917-12

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks 3
Dia. of Cylinders 26 1/2" - 45" - 76" Length of Stroke 45" Revs. per minute 100 Dia. of Screw shaft as per rule 1 1/4" 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 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 62"

Dia. of Tunnel shaft as per rule 1 3/4" Dia. of Crank shaft journals as per rule 1 1/4" Dia. of Crank pin 1 1/2" Size of Crank webs 23 1/2" x 40 1/2" Dia. of thrust shaft under
collars 15" Dia. of screw 1 1/2" Pitch of Screw 16-6" No. of Blades 4 State whether moveable no Total surface 77 ft²
No. of Feed pumps two Diameters of ditto 9" 12" Stroke 24" Can one be overhauled while the other is at work yes
No. of Bilge pumps two Diameters of ditto 8" 6" Stroke 8" Can one be overhauled while the other is at work
No. of Donkey Engines 3 duplex Sizes of Pumps F.W. 7" x 8" two 1 1/2" x 15" Ball No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Five 3 1/2" in E.R. two 3 1/2" in E.R. two 3 1/2" in E.R. In Holds, &c. (Oil tanks) two 4" F.P. two 2 1/2" F.H. two 4" F.H. one 4" F.H.
No. of Bilge Injections two sizes 1 1/2" E.R. Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes two 3 1/2"

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
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 below
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 none 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
Dates of examination of completion of fitting of Sea Connections 5-10-17 of Stern Tube 20-9-17 Screw shaft and Propeller 10-10-17
Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door entered from deck worked from

OILERS, &c.—(Letter for record 5) Manufacturers of Steel J. Spencer & Co
Total Heating Surface of Boilers 9075 ft² Is Forced Draft fitted yes No. and Description of Boilers Three single ended
Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 5-10-17 No. of Certificate 3242
Can each boiler be worked separately yes Area of fire grate in each boiler 12.56 ft² No. and Description of Safety Valves to
each boiler two spring loaded Area of each valve 12.56 ft² Pressure to which they are adjusted 200 lbs Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers 18 1/2" Mean dia. of boilers 18 1/2" Length 11-6" Material of shell plates steel
Thickness 1 1/2" Range of tensile strength 31-9-35 1/2 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
Pitch of rivets 9 3/4" Lap of plates or width of butt straps 21 1/2"

g. seams 1 R.R.B. Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 3/4" Lap of plates or width of butt straps 21 1/2"
Percentage of strength of longitudinal joint rivets 96.6 Working pressure of shell by rules 232 Size of manhole in shell 19" x 15"
Use of compensating ring 10 1/2" x 1 1/2" No. and Description of Furnaces in each boiler Three upright Material steel Outside diameter 51 3/4"
Length of plain part top Thickness of plates crown 3 3/4" Description of longitudinal joint welded No. of strengthening rings
Working pressure of furnace by the rules 243 Combustion chamber plates: Material steel Thickness: Sides 2 1/2" Back 1 1/2" Top 2 1/2" Bottom 1 3/2"

Thickness of stays to ditto: Sides 3 3/4" x 8 1/2" Back 9 1/4" x 8 1/2" Top 9 1/4" x 7 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 206
Material of stays steel Diameter at smallest part 1 1/8" Area supported by each stay 77.5" Working pressure by rules 212 End plates in steam space:
Material steel Thickness 1 1/2" Pitch of stays 17 3/4" x 16" How are stays secured & H Working pressure by rules 210 Material of stays steel
Diameter at smallest part 6 9/16" Area supported by each stay 266" Working pressure by rules 238 Material of Front plates at bottom steel
Thickness 1" Material of Lower back plate steel Thickness 2 9/32" Greatest pitch of stays 13 1/2" x 10" Working pressure of plate by rules 203

Diameter of tubes 2 1/2" Pitch of tubes 3 1/2" Material of tube plates steel Thickness: Front 1" Back 3/8" Mean pitch of stays 8 3/4"
Pitch across wide water spaces 13" Working pressures by rules 212 Girders to Chamber tops: Material steel Depth and
Thickness of girder at centre 9 1/4" x 1 1/2" Length as per rule 31-5-3 Distance apart 9" Number and pitch of stays in each Three 7 3/4"
Working pressure by rules 203 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 Diam. of rivet

Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
Fitted 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

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IS A DONKEY BOILER FITTED? *Yes*
SPARE GEAR. State the articles supplied:— *Two top end bolts & nuts, Two bottom end bolts & nuts, Four main bearing bolts & nuts, one set of coupling bolts & nuts, 6 gunk ring studs & nuts, 6 cylinder & 6 valve chest studs & nuts, 2 piston rod nuts, one pair of main bearings, one pair of connecting rods top & bottom ends, one in deep rod, one piston rod & retainer, one set of piston valve rings each side, one set of metallic packing each side, one propeller 1/8 crank shaft, one screw shaft not on board, one valve spindle each side, one set of thrust shoes, 2 main two and chest valves, 2 condenser tubes, 2 safety valve spring complete set of valves for all pumps, spare gear as per specification for auxiliaries & a quantity of bolts & nuts & rods of various sizes.*

The foregoing is a correct description,
FOR EARLE'S
SHIPBUILDING & ENGINEERING CO. LIMITED

W. H. Lyette

Manufacturer.

ASSISTANT MANAGER

Oct 4th 1916 to Dec 18th 1917.

Dates of Survey while building
During progress of work in shops --
During erection on board vessel --
Total No. of visits *126*

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

Dates of Examination of principal parts:—Cylinders *24-5-17* & *29-1-17* Slides *4-9-17* Covers *7-3-17* Pistons *19-4-17* & *12-7-17* Rods *16-6-17*
Connecting rods *14-5-17* Crank shaft *17-7-17* Thrust shaft *3-9-17* Tunnel shafts *5-11-17* Screw shaft *28-9-17* Propeller *28-9-17*
Stern tube *20-9-17* Steam pipes tested *27-10-17* & *29-11-17* Engine and boiler seatings *5-10-17* Engines holding down bolts *29-11-17*
Completion of pumping arrangements *11-12-17* Boilers fixed *21-11-17* Engines tried under steam *18-12-17*
Main boiler safety valves adjusted *1-12-17* Thickness of adjusting washers: *Port 1 1/16 S 7/16, Star 1 1/16 S 1/2, Fore 1 1/16 S 1/16*
Material of Crank shaft *steel* Identification Mark on Do *2353D.M.R.* Material of Thrust shaft *steel* Identification Mark on Do *2858D.M.*
Material of Tunnel shafts *iron* Identification Marks on Do *2353D.M.R.* Material of Screw shafts *iron* Identification Marks on Do *2353D.M.*
Material of Steam Pipes *solid drawn steel* Test pressure *6 rolls*

Is an installation fitted for burning oil fuel *yes* Is the flash point of the oil to be used over 150°F. *yes*

Have the requirements of Section 49 of the Rules been complied with *yes*

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 machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rule of this Society, the specification has been carried out, the materials & workmanship are good. The Boiler & steam pipes have been tested as above found sound & tight. The machinery has been properly fitted & secured on board the vessel & on completion was tested under full power for two hours as required by the Admiralty officer (Mr. Davis) & found satisfactory. The safety valves have been adjusted under steam & tested for accumulation which did not exceed 206 lbs. All pipes in connection with the oil fuel installation have been tested after fitting in place (Delong 300 suction 100 lbs) & found sound & tight. In my opinion the vessel is eligible for the record & L.M.C. 12-17 F.D. for burning oil fuel.*

It is submitted that
this vessel is eligible for
THE RECORD, + L.M.C. 12.17. F.D.

Fitted for oil fuel 12.17. F.P. above 150°F

The amount of Entry Fee ... £ *3* : *0* :
Special *Yes* ... £ *50* : *3* :
Donkey Boiler Fee ... £ *60* : *0* :
Travelling Expenses (if any) £

When applied for,
27-12-1917

When received,
24-1-18

Frank L. Stanger

Engineer-Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute

Assigned

*F.D. Fitted for oil fuel 12.17
F.P. above 150°F.*

This Certificate is
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