

REPORT ON MACHINERY.

No. 25517

Received at London Office

Date of writing Report 19 When handed in at Local Office 10.10.12 Port of Hull SAT. OCT. 12 1912
 No. in Survey held at Hull Date First Survey Jun. 11th Last Survey Oct 7th 1912
 Reg. Book. pl-17 on the steel screw trawler Isa (Number of Visits)
 Master Built at Selby By whom built Cochran & Sons Tons { Gross 218
 Engines made at Hull By whom made Earle's Co. Ltd. when built 1912-10
 Boilers made at Hull By whom made Earle's Co. Ltd. when made 1912-10
 Registered Horse Power Owners Loc. Anon. Pecheries a Vapeur Port belonging to Ostend
 Nom. Horse Power as per Section 28 70 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion Surface Brake No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 12-20-32 Length of Stroke 23 Revs. per minute Dia. of Screw shaft as per rule 6.96" Material of steel
 as fitted 7 7/16" screw shaft
 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 36"
 Dia. of Tunnel shaft as per rule 6 1/2" Dia. of Crank shaft journals as per rule 6 1/4" Dia. of Crank pin 6 1/2" Size of Crank webs 12 1/2" x 4 1/4" Dia. of thrust shaft under
 collars 6 1/2" Dia. of screw 8-8" Pitch of Screw 11-0" No. of Blades 4 State whether moveable no Total surface 27 #
 No. of Feed pumps one Diameter of ditto 2 3/4" Stroke 10" Can one be overhauled while the other is at work
 No. of Bilge pumps one Diameter of ditto 2 3/4" Stroke 10" Can one be overhauled while the other is at work
 No. of Donkey Engines two 2 1/2" 3/4" of Pumps 2 x 4.5" x 2 1/2" x 5" 6 x 6 x 6 Dup. No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room one 2" In Holds, &c. one 2" in each slush well also
 connected to 2 1/2" Suctions
 No. of Bilge Injections one sizes 3 1/2" Connected to condenser, or to circulating pump pumps a separate Donkey Suction fitted in Engine room & size 2 1/2" extra
 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 none
 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 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 27-9-12 of Stern Tube 27-9-12 Screw shaft and Propeller 25-9-12
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel Beardmore & Co.
 Total Heating Surface of Boilers 1300 # Is Forced Draft fitted no No. and Description of Boilers one single ended
 Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 17-8-12 No. of Certificate 1919
 Can each boiler be worked separately Area of fire grate in each boiler 32 # No. and Description of Safety Valves to
 each boiler two spring loaded Area of each valve 3.99 # Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 6" boiler lap dia. of boilers 150" Length 10'-3" Material of shell plates steel
 Thickness 1 1/8" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: ctr. seams double
 long. seams J. R. & B. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 9/16" Lap of plates or width of butt straps 18 1/4"
 Per centages of strength of longitudinal joint rivets 92.2 plate 85.4 Working pressure of shell by rules 206 lbs Size of manhole in shell 12" x 16"
 Size of compensating ring 9" x 1 1/8" No. and Description of Furnaces in each boiler two daylight Material steel Outside diameter 44 1/2"
 Length of plain part top Thickness of plates crown 1 1/8" Description of longitudinal joint welded No. of strengthening rings
 bottom Working pressure of furnace by the rules 212 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 2 1/8" Top 2 1/8" Bottom 3/4"
 Pitch of stays to ditto: Sides 9 1/2" x 1 1/2" Back 8 3/4" x 1 1/2" Top 8 1/2" x 1 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 212
 Material of stays steel Diameter at smallest part 1.76 # Area supported by each stay 70 # Working pressure by rules 201 End plates in steam space:
 Material steel Thickness 1 1/8" Pitch of stays 16 1/2" x 17" How are stays secured J. T. Working pressure by rules 202 Material of stays steel
 Diameter at smallest part 6 23 # Area supported by each stay 290 # Working pressure by rules 231 Material of Front plates at bottom steel
 Thickness 1" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 14 1/2" x 1 3/4" Working pressure of plate by rules 212
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/8" x 4 1/8" Material of tube plates steel Thickness: Front 1" Back 3/8" Mean pitch of stays 9 3/8"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 207 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 9 1/2" x 1 3/4" Length as per rule 35 1/2" Distance apart 8 1/2" Number and pitch of stays in each three 8 1/4"
 Working pressure by rules 205 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
 plates Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 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



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. _____ Description _____
 Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____ Fire grate area _____ Description of Safety _____
 Valves _____ No. of Safety Valves _____ Area of each _____ Pressure to which they are adjusted _____ Date of adjustment _____
 If fitted with casing gear _____ If steam from main boilers can enter the donkey boiler _____ Dia. of donkey boiler _____ Length _____
 Material of shell plates _____ Thickness _____ Range of tensile strength _____ Descrip. of riveting long. seams _____
 Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____ Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Plates _____
 Working pressure of shell by rules _____ Thickness of shell crown plates _____ Radius of do. _____ No. of stays to do. _____ Dia. of stays _____
 Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____
 Working pressure of furnace by rules _____ Thickness of furnace crown plates _____ Radius of do. _____ Stayed by _____
 Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— *Two top-end bolts & nuts, Two bottom end bolts & nuts, Two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of pump valves, & a quantity of iron bolts & nuts of various sizes.*

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

Dates of Survey while building: During progress of work in shops — 1912: Jun 11. 13. 20. July 16. 18. 22, 24. 26. 27. 29. 31. Aug 1. 2. 3. 9. 12. 14. 17. 21. 28. 30.
 During erection on board vessel — Sep. 9. 10. 16. 23. 24. 25. 27. 28. 30. Oct 1. 2. 3. 5. 7
 Total No. of visits 35

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

Dates of Examination of principal parts—Cylinders 21-8-12 Slides 21-8-12 Covers 21-8-12 Pistons 21-8-12 Rods 17-8-12
 Connecting rods 17-8-12 Crank shaft 28-8-12 Thrust shaft 3-8-12 Tunnel shafts ✓ Screw shaft 25-9-12 Propeller 25-9-12
 Stern tube 27-9-12 Steam pipes tested 1-10-12 Engine and boiler seatings 23-9-12 Engines holding down bolts 2-10-12
 Completion of pumping arrangements 3-10-12 Boilers fixed 30-9-12 Engines tried under steam 5-10-12
 Main boiler safety valves adjusted 5-10-12 Thickness of adjusting washers *Proc 7/16 Lr 13/32*

Material of Crank shaft *Steel* Identification Mark on Do. *3102GAH* Material of Thrust shaft *Steel* Identification Mark on Do. *96176D*
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts *Steel* Identification Marks on Do. *906JWG*
 Material of Steam Pipes *Copper solid drawn* ✓ Test pressure *400 lbs.* ✓

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 rules of this society, the materials & workmanship are good. The Boiler has been tested by Hydraulic pressure to 400 lbs & found sound & tight. The machinery has been properly fitted on board & on completion was tested under steam & found satisfactory, the safety valves have been adjusted & tested for accumulation (PPM).*

These engines were designed, as in the case of the sister vessel Emmanuel, for a working pressure of 180 lbs. the owners desired the boiler to be constructed for a pressure of 200 lbs to be worked at 180 lbs.

In my opinion this vessel is eligible for a record of + L.M.C. 10.12 working pressure to be noted 180 lbs.
It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.12.

The amount of Entry Fee .. £ 1 : 0 :
 Special .. £ 10 : 10 :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 11. 10. 12
 When received, 24. 10. 12

180 lbs.
Frank A. Sturgeon
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. OCT. 15. 1912
 Assigned *Hmc 10.12*

Certificate (if registered) to be sent to
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

