

REPORT ON MACHINERY.

No. 12416
THU. 18. MAR. 1920

Date of writing Report 11th March 1920 When handed in at Local Office 12th March 1920 Port of Aberdeen.
 No. in Survey held at Aberdeen Date, First Survey 23rd Sep^r 1919 Last Survey 10th March 1920
 Reg. Book. on the machinery & boiler of S/S "BEAULY FIRTH" (Number of visits 21.)
 Master Built at Aberdeen By whom built John Lewis & Sons (82) When built 1920.
 Engines made at Aberdeen By whom made John Lewis & Sons (153) when made 1920.
 Boilers made at do. By whom made do. (92) when made 1920.
 Registered Horse Power Owners The Furum S.S. Co., Newcastle. Port belonging to Glasgow.
 Nom. Horse Power as per Section 28 83 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 12¹/₂" - 21" - 34" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft as per rule 4.24 as fitted 4.58 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 1 length 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 space If two
 liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 2'-6"
 Dia. of Tunnel shaft as per rule 6.34 as fitted none Dia. of Crank shaft journals as per rule 6.68 as fitted 4 Dia. of Crank pin 4 Size of Crank webs 12³/₄" x 4¹/₂" Dia. of thrust shaft under
 collars 1/2" Dia. of screw 9'-0" Pitch of Screw 11'-0" No. of Blades 4 State whether moveable No Total surface 30 sq ft
 No. of Feed pumps 2 Diameter of ditto 2¹/₂" Stroke 12" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 2¹/₂" Stroke 12" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two Sizes of Pumps BALLAST 6" x 4" x 8" GENERAL 5¹/₄" x 3¹/₂" x 5" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 1 @ 2¹/₂", 2 @ 2" + 1 @ 2" in Blk. Room In Holds, &c. 2 @ 2" in Hold 1 @ 2¹/₂" in aft peak.
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes 2¹/₂"
 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 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 Hold Suctions How are they protected Strong 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 No tunnel Is it fitted with a watertight door Yes worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel The Steel Company of Scotland.
 Total Heating Surface of Boilers 1543 sq ft Is Forced Draft fitted No No. and Description of Boilers One Single Ended marine.
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 14. 1. 20. No. of Certificate 981
 Can each boiler be worked separately Yes Area of fire grate in each boiler 52.14 sq ft No. and Description of Safety Valves to
 each boiler 2 Direct Spring Area of each valve 5.94 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear Yes
 Smallest distance between boilers or uptakes and bunkers or woodwork BUNKERS Mean dia. of boilers 13'-0" Length 10'-6" Material of shell plates S
 Thickness 1¹/₈" Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D.R. Lap.
 g. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1³/₁₆" Pitch of rivets 8¹/₄" Lap of plates or width of butt straps 1¹/₈"
 Percentages of strength of longitudinal joint rivets 88.9 plate 85.6 Working pressure of shell by rules 193 Size of manhole in shell 16" x 12"
 Size of compensating ring In shell 1¹/₄" No. and Description of Furnaces in each boiler 3 Plain Material S Outside diameter 3'-3¹/₂"
 Length of plain part top 6'-10¹/₂" bottom 6'-3¹/₂" Thickness of plates crown 3³/₄" Description of longitudinal joint Welded No. of strengthening rings 1
 Working pressure of furnace by the rules 181.4 Combustion chamber plates: Material S Thickness: Sides 1¹/₈" Back 2¹/₃₂" Top 1¹/₈" Bottom 1¹/₈"
 Pitch of stays to ditto: Sides 9¹/₂" x 8¹/₄" Back 9¹/₂" x 8" Top 9¹/₂" x 1¹/₂" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 193.
 Material of stays S Area at smallest part 1.46 sq in Area supported by each stay 46 sq in Working pressure by rules 185.2 End plates in steam space:
 Material S Thickness 1¹/₈" Pitch of stays 18" x 18" How are stays secured DOUBLE NUTS WORKERS Working pressure by rules 185 Material of stays S
 Area at smallest part 6.33 sq in Area supported by each stay 324 sq in Working pressure by rules 203 Material of Front plates at bottom S
 Thickness 1¹/₃₂" Material of Lower back plate S Thickness 2⁹/₃₂" Greatest pitch of stays 14¹/₄" x 9¹/₂" Working pressure of plate by rules 194
 Diameter of tubes 3¹/₂" Pitch of tubes 4³/₄" x 4³/₄" Material of tube plates S Thickness: Front 1¹/₃₂" Back 2¹/₃₂" Mean pitch of stays 9¹/₂" x 9¹/₂"
 Pitch across wide water spaces 14¹/₂" Working pressures by rules 181.2 Girders to Chamber tops: Material S Depth and
 thickness of girder at centre 8¹/₄" x 9¹/₈" (2) Length as per rule 24¹/₂" Distance apart 1¹/₂" Number and pitch of stays in each 2 @ 9¹/₂"
 Working pressure by rules 225 Steam dome: description of joint to shell NONE % of strength of joint
 Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
 Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed
 SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to
 Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
 Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED? *No.*

If so, is a report now forwarded? ☒

SPARE GEAR. State the articles supplied:— *2 Bottom end Bolts & nuts, 2 Top end Bolts & nuts, 2 main bearing bolts & nuts, one set of coupling bolts, one set each of feed, bilge, air & circulating pumps, one main & one donkey check valve, one safety valve spring, 6 junk ring studs & nuts, a quantity of assorted bolts, nuts and iron rod & plate.*

The foregoing is a correct description,
FOR JOHN LEWIS & SONS, LTD.,

Car J. Donald

Manufacturer.

Dates of Survey while building { During progress of work in shops -- SEPT. 23rd, OCT. 1, 14, 21, 31, NOV. 10, DEC. 9, 23 JAN. 13, 14, 16, 20, 22, 23, 26, FEB. 21,
During erection on board vessel --- MARCH 1, 3, 5, 8, 10.
Total No. of visits 21.

Is the approved plan of main boiler forwarded herewith *Yes.*

" " " donkey " " " *Yes.*

Dates of Examination of principal parts—Cylinders *9.12.19.* Slides *9.12.19.* Covers *9.12.19.* Pistons *9.12.19.* Rods *9.12.19.*

Connecting rods, *9.12.19.* Crank shaft *LEITH* Thrust shaft *23.12.19* Tunnel shafts *✓* Screw shaft *23.12.19* Propeller *26.1.20.*

Stern tube *20.1.20.* Steam pipes tested *5.3.20* Engine and boiler seatings *21.2.20* Engines holding down bolts *1.3.20.*

Completion of pumping arrangements *10.3.20.* Boilers fixed *1.3.20* Engines tried under steam *10.3.20*

Completion of fitting sea connections *21.2.20* Stern tube *21.2.20* Screw shaft and propeller *21.2.20.*

Main boiler safety valves adjusted *10.3.20.* Thickness of adjusting washers *Port 13/32" Starb 3/8"*

Material of Crank shaft *Steel* Identification Mark on Do. *LLOYDS 4560 GAH* Material of Thrust shaft *Steel* Identification Mark on Do. *LLOYDS 1181 A 23/12/19 WNF*

Material of Tunnel shafts *none* Identification Marks on Do. *LLOYDS 1182 A 23.12.19 WNF* Material of Screw shafts *Iron* Identification Marks on Do. *LLOYDS 1182 A 23.12.19 WNF*

Material of Steam Pipes *Solid drawn Copper 3 1/2 bore x 6 W.G.* Test pressure *360 lbs/sq"*

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 *No.* If so, state name of vessel *✓*

General Remarks (State quality of workmanship, opinions as to class, &c. *These engines and boiler have been constructed under Special Survey in accordance with the approved drawing and the Rules of the Society. The materials and workmanship are of good quality.*

The machinery has been securely fitted on board the vessel and tried under steam with satisfactory results. It is eligible in our opinion, to have record of L.M.C. 3.20. in the Register Book.

It is submitted that
this vessel is eligible for

THE RULES + L.M.C. 3.20 20/3/20

For

G. R. S.

The amount of Entry Fee ... £ *1* : *0* :
Special ... £ *12* : *9* :
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ *✓* : :
When applied for, *14/3 1920*
When received, *7/4/20 RBN*

Committee's Minute

TUE. MAY. 11 1920

Assigned

+ L.M.C. 3.20

CERTIFICATE WRITTEN

M. H. Haset *W. Wilson*
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation