

REPORT ON MACHINERY.

No. 17493.

Date of writing Report 1st July 1919 When handed in at Local Office 4th July 1919 Port of Greenock
 No. in Survey held at Greenock Date, First Survey 19th June 1918 Last Survey 1st July 1919
 Reg. Book. on the Steel screw steamer "SAINT BEDE" (Number of Visits 72)
 Master H. Hill Built at Port Glasgow By whom built Lithgows Limited Tons { Gross 4662.61
 Engines made at Greenock By whom made Rankin and Blackmore Limited Net 2885.55
 Boilers made at Greenock By whom made Rankin and Blackmore Limited When built 1919
 Registered Horse Power 517 Owners Rankin, Gilmore & Co. Ltd. when made 1919
 Nom. Horse Power as per Section 28 517 Is Refrigerating Machinery fitted for cargo purposes No Port belonging to Liverpool
 Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 27"-44"-73"Length of Stroke 48"Revs. per minute 62Dia. of Screw shaft as per rule 14.69Material of screw shaft 2. SteelIs the screw shaft fitted with a continuous liner the whole length of the stern tube YesIs the after end of the liner made water tight Yesin the propeller boss Yes If the liner is in more than one length are the joints burned YesIf the liner does not fit tightly at the part Yesbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yesliners are fitted, is the shaft lapped or protected between the liners YesLength of stern bush 61 1/4"Dia. of Tunnel shaft as per rule 13.3Dia. of Crank shaft journals as per rule 13.99Dia. of Crank pin 14 1/2"Size of Crank webs 28"x9"Dia. of thrust shaft under collars 14 3/4"Dia. of screw 17.9"Pitch of Screw 18'-0"No. of Blades 4State whether moveable Solid Total surface 100 sq. ft.No. of Feed pumps 3 1/2Diameter of ditto 4"Stroke 24"Can one be overhauled while the other is at work YesNo. of Bilge pumps 2Diameter of ditto 4"Stroke 24"Can one be overhauled while the other is at work YesNo. of Donkey Engines 4Sizes of Pumps GENERAL SERVICE - 7" dia x 18" stroke
BALLAST PUMP - 11" dia x 24" stroke
DUPLEX - 5" dia x 8" strokeNo. and size of Suctions connected to both Bilge and Donkey pumps 6 - 3 1/2" dia for Forward Holds
4 - 3 1/2" " Aft HoldsIn Engine Room 4 - 3 1/2" dia for F.R. Bilge
1 - 2 1/2" " Turbine Well

3 1/2 x 6" In Holds, &c.

No. of Bilge Injections 1sizes 12"Connected to condenser, or to circulating pump Circulating pumpIs a separate Donkey Suction fitted in Engine room & size Yes - 1 - 3 1/2"Are all the bilge suction pipes fitted with roses YesAre the roses in Engine room always accessible YesAre the sluices on Engine room bulkheads always accessible YesAre all connections with the sea direct on the skin of the ship YesAre they Valves or Cocks BothAre they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates YesAre the Discharge Pipes above or below the deep water line BelowAre they each fitted with a Discharge Valve always accessible on the plating of the vessel YesAre the Blow Off Cocks fitted with a spigot and brass covering plate YesWhat pipes are carried through the bunkers NoneHow are they protected YesAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesIs the Screw Shaft Tunnel watertight YesIs it fitted with a watertight door Yesworked from Top platform.BOILERS, &c.—(Letter for record S.)Manufacturers of Steel Steel Company of Scotland Ltd.Total Heating Surface of Boilers 7668 sq. ft.Is Forced Draft fitted YesNo. and Description of Boilers Three single endedWorking Pressure 180 lbs. sq. in.Tested by hydraulic pressure to 360 lbs. sq. in.Date of test 18/4/19No. of Certificate 1379Can each boiler be worked separately YesArea of fire grate in each boiler 63.3 sq. ft.No. and Description of Safety Valves to each boiler Two - Spring loadedArea of each valve 9.62 sq. in.Pressure to which they are adjusted 185 lbs. sq. in.Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 20"Mean dia. of boilers 15' 6"Length 11' 6"Material of shell plates SteelThickness 1 1/4"Range of tensile strength 28/32Are the shell plates welded or flanged NoDescrip. of riveting: air. EN. D.R.long. seams D.B.S. & T.R.Diameter of rivet holes in long. seams 1 5/16"Pitch of rivets 9 1/8"Lap of plates or width of butt straps 19 1/2"Per centages of strength of longitudinal joint 88.3Working pressure of shell by rules 182 lbs. sq. in.Size of manhole in End. 16" x 12"Size of compensating ring plate flangedNo. and Description of Furnaces in each boiler 3 - DeightonMaterial SteelOutside diameter 50 3/4"Length of plain part top 19"Thickness of plates crown 19/32"Description of longitudinal joint weldedNo. of strengthening rings CorrugatedWorking pressure of furnace by the rules 188 lbs. sq. in.Combustion chamber plates: Material SteelThickness: Sides 2 3/32"Back 1/16"Top 2 3/32"Bottom 2 3/32"Pitch of stays to ditto: Sides 10 5/8" x 9 1/4"Back 10 1/4" x 8 3/4"Top 10 5/8" x 9 1/4"If stays are fitted with nuts or riveted heads NutsWorking pressure by rules 180 lbs. sq. in.Material of stays SteelArea at smallest part 2.395 sq. in.Area supported by each stay 98.3 sq. in.Working pressure by rules 220 lbs. sq. in.End plates in steam space: Material SteelThickness 1 1/32"Pitch of stays 21 3/4"How are stays secured D.N. and W.Working pressure by rules 181 lbs. sq. in.Material of stays SteelArea at smallest part 8.48 sq. in.Area supported by each stay 4.73 sq. in.Working pressure by rules 186 lbs. sq. in.Material of Front plates at bottom SteelThickness 2 3/32"Material of Lower back plate SteelThickness 2 3/32"Greatest pitch of stays 13 5/8"Working pressure of plate by rules 187.6 lbs. sq. in.Diameter of tubes 2 3/4"Pitch of tubes 4" x 3 3/8"Material of tube plates SteelThickness: Front 3 1/32"Back 3/4"Mean pitch of stays 9 7/8"Pitch across wide water spaces 13 5/8"Working pressures by rules 181.2 lbs. sq. in.Girders to Chamber tops: Material SteelDepth and thickness of girder at centre 10" x 13 1/4"Length as per rule 35 9/16"Distance apart 10 5/8"Working pressure by rules 188 lbs. sq. in.Steam dome: description of joint to shell Yes% of strength of joint YesDiameter YesThickness of shell plates YesMaterial YesDescription of longitudinal joint YesDiam. of rivet holes YesPitch of rivets YesWorking pressure of shell by rules YesCrown plates YesThickness YesHow stayed YesUPERHEATER. Type YesDate of Approval of Plan YesTested by Hydraulic Pressure to YesDate of Test YesIs a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler YesDiameter of Safety Valve YesPressure to which each is adjusted YesIs Easing Gear fitted Yes

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded? *✓*

SPARE GEAR. State the articles supplied:— *Two top end bolts - Two bottom end bolts - Two main bearing bolts - One set Coupling bolts - One set feed pump valves - One set bilge pump valves - One propeller - One propeller shaft (Continuous liner) - One pair bottom end bearings - One eccentric strap - One feed pump escape valve spring - One set main chuck valves - One set auxiliary chuck valves - Bolts, nuts, and c.*

The foregoing is a correct description,
RANKIN & BLACKMORE, LTD.

M. Rankin
Director

Manufacturer.

Dates of Survey while building { During progress of work in shops - - (1918). June 19. July 22-25-30. Aug. 19-27. Sept. 2-12-16-20-24-27. Oct. 1-9-17-21-23-29-31. Nov. 5-21. Dec. 17-18.
During erection on board vessel - - 20-24 (1919). Jan. 8-14-17-23-27. Feb. 4-12-17-21-27-28. Mar. 4-6-7-10-12-14-17-19-24-27-31. Apr. 7-16-18-25-30. May 1-9-13-14-15-21. June 2-4-6-9-10-11-12-13-16-23-25-28-30. July 1-12.
Total No. of visits *12*

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

" " " donkey " " *✓*

Dates of Examination of principal parts—Cylinders *18/1/19* Slides *23/1/19* Covers *23/1/19* Pistons *23/1/19* Rods *26/2/19*
Connecting rods *26/2/19* Crank shaft *18/1/19* Thrust shaft *7/4/19* Tunnel shafts *9/5/19* Screw shaft *9/5/19* Propeller *6/6/19*
Stern tube *16/4/19* Steam pipes tested *11/6/19* Engine and boiler seatings *21/5/19* Engines holding down bolts *23/6/19*
Completion of pumping arrangements *23/6/19* Boilers fixed *23/6/19* Engines tried under steam *1/7/19*
Completion of fitting sea connections *4/6/19* Stern tube *6/5/19* Screw shaft and propeller *13/6/19*
Main boiler safety valves adjusted *28/6/19* Thickness of adjusting washers *P.B. P 9/16, S 5/16; C.B. P 3/16, S 1/16. S.B. P 5/16, S 3/16.*
Material of Crank shaft *2. Steel* Identification Mark on Do. *309* Material of Thrust shaft *2. Steel* Identification Mark on Do. *309*
Material of Tunnel shafts *2. Steel* Identification Marks on Do. *309* Material of Screw shafts *2. Steel* Identification Marks on Do. *309*
Material of Steam Pipes *Iron* Test pressure *600 lbs"*

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 *✓*

If so, state name of vessel *S.S. Bronte*

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

The Machinery and Boilers of this vessel have been built under Special Survey and placed onboard in accordance with the Rules of the Society. They are now, in my opinion, in safe working condition and respectfully submitted for the notation E.D. + L.M.C 7-19 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 7-19 FD

Roll

9.7.19

J.M.

The amount of Entry Fee ... £ *3* : —
Special *Charge* ... £ *45* : *17* : *22nd July 1919.*
Donkey Boiler Fee ... £ *20* : — : *22nd July 1919.*
Travelling Expenses (if any) £ — : — : *3rd July 1919.*

Geo. A. Spring
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW* *8-JUL-1919*

Assigned *+ L.M.C 7-19*

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MACHINERY CERTIFICATE
WRITTEN
9.7.19



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