

Rpt. 4.

REPORT ON MACHINERY.

No. 40671.

Received at London Office

DEC. 15 1920

Date of writing Report *3rd Dec 20* When handed in at Local Office *9th Dec. 20* Port of *Glasgow*
 No. in Survey held at *Glasgow* Date, First Survey *2nd Sept 1919* Last Survey *7th Dec 1920*
 Reg. Book. on the *SS "Clan Macnab"* (Number of Visits *74*)
 Master *Ironie* Built at *By whom built* *Ayrshire Dockyard. Shk 485* Tons } Gross }
 Engines made at *Glasgow* By whom made *Dunsen & Jackson. Shk 518* when made *1920* Net }
 Boilers made at *Glasgow* By whom made *Dunsen & Jackson. Shk 518* when made *1920*
 Registered Horse Power *560* Owners *Clan Line* Port belonging to *Glasgow*
 Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Triple Expansion* No. of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *27 1/2" x 45 1/2" x 75"* Length of Stroke *54"* Revs. per minute *42* Dia. of Screw shaft *as per rule 15 7/8"* Material of screw shaft *as fitted 18"*
 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 *99"*
 Dia. of Tunnel shaft *as per rule 14 5/8"* Dia. of Crank shaft journals *as per rule 15 3/4"* Dia. of Crank pin *15 3/4"* Size of Crank webs *24 3/4" x 10 1/2"* Dia. of thrust shaft under collars *15 1/4"* Dia. of screw *18-6"* Pitch of Screw *19'-0"* No. of Blades *4* State whether moveable *Yes* Total surface *105 1/2" #*
 No. of Feed pumps *2* Diameter of ditto *4 3/4"* Stroke *30"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *4 3/4"* Stroke *30"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *2* Sizes of Pumps *2* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *2 @ 3 1/2": Strokehold 2 @ 3 1/2": Tunnel 1 @ 2 1/2"* In Holds, &c. *no 1 - 2 @ 3 1/2": no 2 - 2 @ 3 1/2": no 3 (of daf tank) 2 @ 3 1/2": no 4 - 2 @ 3 1/2": no 5 - 1 @ 3 1/2"*
 No. of Bilge Injections *1* sizes *8"* Connected to condenser, or to circulating pump *C.P.* Is a separate Donkey Suction fitted in Engine room & size *Yes - 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 *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 *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*
 Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Engine room top platform.*

BOILERS, &c.—(Letter for record *5*) Manufacturers of Steel *J. Spence & Sons, Lanarkshire S. Co. Beardmore & Co.*
 Total Heating Surface of Boilers *7806 sq ft* Is Forced Draft fitted *Yes* No. and Description of Boilers *3 Single ended multitubular*
 Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs* Date of test *11-8-20* No. of Certificate *15412*
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *10 1/2 sq ft* No. and Description of Safety Valves to each boiler *Two spring loaded* Area of each valve *9.62 sq in* Pressure to which they are adjusted *205 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *30"* dia. of boilers *15'-0 3/8"* Length *12'-0"* Material of shell plates *S*
 Thickness *1 3/8"* Range of tensile strength *28-32 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *L.D.R.*
 long. seams *T.R. Double Strap* Diameter of rivet holes in long. seams *1 7/16"* Pitch of rivets *10"* Lap of plates or width of butt straps *21 5/8"*
 Per centages of strength of longitudinal joint *87.6* Working pressure of shell by rules *208* Size of manhole in shell *16" x 12"*
 Size of compensating ring *Flanged 1 3/8"* No. and Description of Furnaces in each boiler *3 Corrugated* Material *S* Outside diameter *48"*
 Length of plain part *top 3 5/8"* Thickness of plates *bottom 3 5/8"* Description of longitudinal joint *Weld* No. of strengthening rings *None*
 Working pressure of furnace by the rules *209* Combustion chamber plates: Material *S* Thickness: Sides *1 1/16"* Back *4 5/16"* Top *1 1/16"* Bottom *1"*
 Pitch of stays to ditto: Sides *9 1/4" x 8 1/2"* Buck *9 3/8" x 8 1/8"* Top *8 3/4" x 8 3/4"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *212*
 Material of stays *S* Area at smallest part *1.98 sq in* Area supported by each stay *78.6 sq in* Working pressure by rules *227* End plates in steam space: Material *S* Thickness *1 1/4"* Pitch of stays *20 3/4" x 15 3/4"* How are stays secured *S. Nuts* Working pressure by rules *209* Material of stays *S*
 Area at smallest part *67 sq in* Area supported by each stay *326.8 sq in* Working pressure by rules *219* Material of Front plates at bottom *S*
 Thickness *1 1/4"* Material of Lower back plate *S* Thickness *2 3/32"* Greatest pitch of stays *15" x 8 1/2"* Working pressure of plate by rules *218*
 Diameter of tubes *2 1/2"* Pitch of tubes *3 3/4" x 3 1/16"* Material of tube plates *S* Thickness: Front *1 1/4"* Back *7/8"* Mean pitch of stays *10 7/16"*
 Pitch across wide water spaces *13 1/2"* Working pressures by rules *203 lbs* Girders to Chamber tops: Material *S* Depth and thickness of girder at centre *16" x 1 3/4"* Length as per rule *34 27/32"* Distance apart *8 3/4"* Number and pitch of stays in each *3 @ 8 3/4"*
 Working pressure by rules *206* Steam dome: description of joint to shell *✓* % 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? *Yes*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— *1 set of top & bottom end, main bearing & coupling bolts true
1 Impeller shaft, 1 air pump rod, 1 set of rings for each piston, 1 valve spindle for main engine, 1 pair of top
end & one pair of bottom end braces, 1 screw shaft, 1 set of feed & bilge tank pump valves, assorted
bar iron, plates, bolts true.*

The foregoing is a correct description,
DUNSMUIR & JACKSON, Limited.

James H. H. H.

Manufacturer.

Dates of Survey while building
During progress of work in shops:— *1919: Sep 2-11-25-30 Oct 3-9-14-20-30 Nov 3-25 Dec 1-5-8-11-16-19-23-29 (1920) Jan 12-16-21-28-30 Feb 5-17-26 Mar 2-4-15*
During erection on board vessel:— *17-23-29 Apr 14-20-29 May 3-13-19-23-24-28 Jun 4-9-17-21-29 July 1-7-13-14-27-29 Aug 11-20-27-31 Sep 6-8-10-16-21-28*
Total No. of visits *74.*

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

Is the approved plan of donkey boiler forwarded herewith *Yes*

Dates of Examination of principal parts—Cylinders *1-7-20* Slides *7-7-20* Covers *14-7-20* Pistons *7-7-20* Rods *7-7-20*
Connecting rods *29-3-20* Crank shaft *29-12-19* Thrust shaft *29-12-19* Tunnel shafts *16-9-20* Screw shaft *17-7-20* Propeller *13-7-20*
Stern tube *27-7-20* Steam pipes tested *27-8-19* Engine and boiler seatings *29-7-20* Engines holding down bolts *14-10-20*
Completion of pumping arrangements *7-12-20* Boilers fixed *14-10-20* Engines tried under steam *7-12-20*
Completion of fitting sea connections *29-7-20* Stern tube *29-7-20* Screw shaft and propeller *29-7-20*
Main boiler safety valves adjusted *12-11-20* Thickness of adjusting washers *P.A. $\frac{25}{16}$ S. $\frac{5}{16}$: C.A. $\frac{25}{16}$ S. $\frac{5}{16}$: S.P. $\frac{3}{8}$ S. $\frac{25}{16}$*
Material of Crank shaft *S* Identification Mark on Do. *29-12-19 J.E.S.* Material of Thrust shaft *S* Identification Mark on Do. *29-12-19 J.E.*
Material of Tunnel shafts *S* Identification Marks on Do. *16-9-20 J.E.S.* Material of Screw shafts *S* Identification Marks on Do. *17-7-20 J.E.*
Material of Steam Pipes *Lapwelded iron* Test pressure *600 lbs*
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 *Yes* If so, state name of vessel *S.S. "Clan Murdoch"*

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

These engines and boilers have been built under Special Survey and in accordance with the Rules, the materials and workmanship are sound and good. They have been fitted on board in an efficient manner, tried under working conditions and found satisfactory and are eligible in my opinion to be classed with record of L.M.C. 12-20: and the notation of fitted for Oil fuel F.P. above 150°F.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 12-20 Fitted for Oil fuel 12-20. F.P. above 150°F.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ *3* :
Special ... £ *48* :
Donkey Boiler Fee ... £ :
Travelling Expenses (if any) £ :
When applied for, *9/12/1920*
When received, *21/12/1920*

Committee's Minute *Glasgow 14 DEC 1920*
Assigned *+ L.M.C. 12-20 F.D.*

Fitted for oil fuel 12-20 F.P. above 150°F.

Engineer Surveyor to Lloyd's Register of Shipping.
FRIDAY 13 1921 © 2019
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