

REPORT ON MACHINERY.

No. 8304

MON. 15 MAR. 1920

Date of writing Report *9th March 1920* When handed in at Local Office *10* Port of *Belfast*
 No. in Survey held at *Belfast* Date, First Survey *4th Nov. 1918* Last Survey *4th March 1920*
 Reg. Book. *S.S. Maine* (Number of Visits *6*)
 on the *Belfast* Master *Belfast* Built at *Belfast* By whom built *Hauland & Wolff L^{rs}* Tons { Gross *6600*
 Engines made at *Belfast* By whom made *-* when made *-* Net *4973*
 Boilers made at *-* By whom made *-* when made *-* When built *1920*
 Registered Horse Power *-* Owners *Atlantic Transport Corporation* belonging to *-*
 Nom. Horse Power as per Section 28 *578 517* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines *Single Screw Triple Expansion* of Cylinders *3* No. of Cranks *3*
 Dia. of Cylinders *27"-44"-73"* Length of Stroke *48"* Revs. per minute *79* Dia. of Screw shaft *as per rule 14.76* Material of *Steel*
 as fitted *15.75* 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 *Yes* 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 *Yes* If two
 liners are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *63"*
 Dia. of Tunnel shaft *as per rule 13.33* Dia. of Crank shaft journals *as per rule 13.99* Dia. of Crank pin *14 3/4* Size of Crank webs *28" x 9"* Dia. of thrust shaft under
 as fitted *13.87* as fitted *14.75*
 collars *15"* Dia. of screw *17"-9"* Pitch of Screw *16"-6"* No. of Blades *4* State whether moveable *No* Total surface *100 sq ft*
 No. of Feed pumps *2* Diameter of ditto *4 1/2"* Stroke *24"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *4 1/2"* Stroke *24"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *See other sheets* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *4-3 1/2"* In Holds, &c. *8-3 1/2" 2-4 1/2" 1-3" 6-2 1/2"*

No. of Bilge Injections *1* sizes *13"* Connected to condenser, or to circulating pump *Pumps* 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 *Yes*
 Are all connections with the sea direct on the skin of the ship *Yes-Except Main Tank Injections* 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 *Live hold Suctions* How are they protected *Iron 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*
 Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *Upper deck*

BOILERS, &c.—(Letter for record *S.S.*) Manufacturers of Steel *D. Colville & Sons L^{rs}* *3.S.B.*
 Total Heating Surface of Boilers *7668 sq ft* Forced Draft fitted *Yes* No. and Description of Boilers *3 Single End bylin^g*
 Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *29-10-19* No. of Certificate *538*
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *63 1/2 sq ft* No. and Description of Safety Valves to
 each boiler *2- Good Springs* Area of each valve *9.62 sq* 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 *14"* Mean dia. of boilers *15'-6"* Length *11'-6"* Material of shell plates *Steel*
 Thickness *1 1/4"* Range of tensile strength *28-32 tons* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *Lap Rivets*
 long. seams *B. Butt Rivets* Diameter of rivet holes in long. seams *1 5/16"* Pitch of rivets *9 1/2"* Lap of plates or width of butt straps *19 1/2"*
 Per centages of strength of longitudinal joint *88.1* Working pressure of shell by rules *182 lbs* Size of manhole in shell *16" x 12"*
 plate *85.6* Size of compensating ring *Plate Flange* and Description of Furnaces in each boiler *3- Daylight* Material *Steel* Outside diameter *50 3/8"*
 Length of plain part *top 5"* Thickness of plates *bottom 3 1/2"* Description of longitudinal joint *Weld* No. of strengthening rings *0*
 Working pressure of furnace by the rules *188 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *3/32"* Back *1/16"* Top *23/32"* Bottom *23/32"*
 Pitch of stays to ditto: Sides *10 1/2" x 9 1/2"* Back *9 1/2" x 8 1/2"* Top *10 1/2" x 9 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *180 lbs*
 Material of stay *Steel* Area at smallest part *2.39 sq ft* supported by *each* stay *98 1/2 sq* Working pressure by rules *186 lbs* End plates in steam space:
 Material *Steel* Thickness *1 1/2"* Pitch of stays *2 1/2" x 2 1/2"* How are stays secured *Nuts* Working pressure by rules *180 lbs* Material of stays *Steel*
 Area at smallest part *8.29 sq* Area supported by *each* stay *45.9 sq* Working pressure by rules *187 lbs* Material of Front plates at bottom *Steel*
 Thickness *3/32"* Material of Lower back plate *Steel* Thickness *27/32"* Greatest pitch of stays *18 1/2"* Working pressure of plate by rules *189 lbs*
 Diameter of tubes *2 1/2"* Pitch of tubes *4" x 3 1/2"* Material of tube plate *Steel* Thickness: Front *31/32"* Back *3/4"* Mean pitch of stays *2" x 7 1/2"*
 Pitch across wide water spaces *13 1/2"* Working pressures by rules *181 lbs* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *10" x (8" x 2)* Length as per rule *35 9/16"* Distance apart *10 1/2"* Number and pitch of stays in each *3-9 1/4"*
 Working pressure by rules *182 lbs* 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 *V* 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 *-*

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Stringer I

and plank

Upper D

Stringer I

FRAMES

REVERSE

LOWER M

Bowsprit

Topmasts

Rigging

Sails

IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *See other sheet*

The foregoing is a correct description,

For HARLAND & WOLFF Ltd.

W. E. Cobbeck

Manufacturer.

Dates of Survey
During progress of work in shops -- *4th Nov^r 1918 to 4th March 1920*
During erection on board vessel ---
building
Total No. of visits *61*

Is the approved plan of main boiler forwarded herewith *No* *No*

Dates of Examination of principal parts—Cylinders *4 - 19* Covers *5* Pistons *5* Rods
Connecting rods *17-11-19* Crank shaft *26-11-19* Tunnel shafts *5* Screw shaft *19* Propeller *7-11-19*
Stern tube *7-11-19* Steam pipes tested *1-12-19* Engine and boiler seatings *12-12-19* Engines holding down bolts *12-12-19*
Completion of pumping arrangements *1-3-20* Boilers fixed *5-12-19* Engines tried under steam *4-3-20*
Completion of fitting sea connections *18-11-19* Stern tube *18-11-19* Screw shaft and propeller *18-11-19*
Main boiler safety valves adjusted *26-2-20* Thickness of adjusting washers *8-11*
Material of Crank shaft *Steel* Identification Mark on Do. *44485* Material of Thrust shaft *Do* Identification Mark on Do. *Do*
Material of Tunnel shafts *Do* Identification Marks on Do. *Do* Material of Screw shafts *Do* Identification Marks on Do. *Do*
Material of Steam Pipes *Steel* Test pressure *540 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 *Yes* If so, state name of vessel *S. New Toronto*

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

The machinery of this vessel has been constructed under Special Survey, and in accordance with the Rules. The workmanship, and the materials are of good description, and on trial under steam in Belfast Lough the machinery worked satisfactorily. In our opinion, it is eligible for record + L.M.C. 3-20, with notation "Forced Draft" and "Electric Light".

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 3-20 F.D.

Certificate (if required) to be sent to *This Office*

The amount of Entry Fee ... £ *3 : 0 :* When applied for,
Special ... £ *45 : 18 :* *2-3-1920*
Donkey Boiler Fee ... £ *34 : 0 :* When received,
Travelling Expenses (if any) £ *13/4/1920*

Committee's Minute

Assigned

+ L.M.C. 3-20 F.D.

MADE BY CERTIFICATE
11/1/20

Rpt. 9a.

Port of *Belfast* Continuation of Report No. 830A dated *9th March 1920* on the

S.S. Maine

auxiliary pumps

Feed *9 1/2" x 7" x 18"*
General *9 1/2" x 7" x 18"*
Ballast *10 1/2" x 14" x 24"*
Fresh Water *3" x 3" x 4"*

Principal items of Spare Gear.

2 Connecting rods top and bottom flange ✓
2 Main bearing bolts flange ✓
6 Shaft coupling - ✓
2 Feed Pump valves ✓
2 Bilge - ✓
3 Main Feed Check - ✓
3 Donkey -
12 Condenser Tubes & 50 females
6 Air pump valves
1 Filter bucket & 50 lbs Coir Fibres
1 Spring feed pump escape valve
12 Boiler tubes, plain.
Set H.P. piston rings & springs
1 Paw top end, bushes
1 - bottom -
1 Circulating pump impeller & spindle
1 Air pump bucket & rods.
1 Set boiler safety valves & springs
Spare gear for aux. pumps
Bass wire, bolts, nuts, etc.

R. F. Pennington

R. F. Pennington
Engineer Surveyor to Lloyd's Register of Shipping.