

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

Date of writing Report

19

When handed in at Local Office

22 MAY 1928

Port of Sunderland

No. in Survey held at Sunderland

Date, First Survey 28 Oct 27

Last Survey 17 May 1928

Reg. Book.

(Number of Visits 43)

40978 on the Single Screw Steamer "BOTHNIA"

Tons { Gross 2402  
Net 1209

Built at Sunderland By whom built Messrs L. Thompson &amp; Sons, Ltd.

Yard No. 562

When built 1928

Engines made at Sunderland

By whom made John Dickinson &amp; Sons, Ltd.

Engine No. 893

when made 1928

Boilers made at Sunderland

By whom made John Dickinson &amp; Sons, Ltd.

Boiler No. 893

when made 1928

Registered Horse Power

Owners America-Levant, Line, Ltd.

Port belonging to London

Nom. Horse Power as per Rule 403

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

Trade for which Vessel is intended General Cargo

ENGINES, &amp;c.—Description of Engines Triple Expansion—Single Screw

Revs. per minute 46

Dia. of Cylinders 24" - 40" - 66"

Length of Stroke 45"

No. of Cylinders 3

No. of Cranks 3

Crank shaft, dia. of journals

as per Rule 12.568"

as fitted 12 3/4"

Crank pin dia. 12 3/4"

Crank webs

Mid. length breadth 24 1/4"

shrunk

Thickness parallel to axis 8"

Intermediate Shafts, diameter

as per Rule 11.94"

as fitted 12 1/8"

Thrust shaft, diameter at collars

as per Rule 12.568"

as fitted 12 3/4"

Tube Shafts, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule 13.34"

as fitted 13 1/2"

Is the

{ tube }

shaft fitted with a continuous liner

{ screw }

{

Yes

Bronze Liners, thickness in way of bushes

as per Rule 4.04"

as fitted 3 1/4"

Thickness between bushes

as per Rule .53"

as fitted 2 1/2"

Is the after end of the liner made watertight in the

propeller boss Yes

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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

Is an approved Oil Gland or other appliance fitted at the after

end of the tube shaft

Length of Bearing in Stern Bush next to and supporting propeller 4'-6"

Propeller, dia. 16'-6"

Pitch 15'-9"

No. of Blades 4

Material Bronze

whether Moveable No

Total Developed Surface 82 sq. feet

Feed Pumps worked from the Main Engines, No. None

Diameter

Stroke

Can one be overhauled while the other is at work

Bilge Pumps worked from the Main Engines, No. Two

Diameter 4"

Stroke 22 1/2"

Can one be overhauled while the other is at work Yes

Feed Pumps { No. and size One - Mumford 4 1/2 x 5 x 4"

Pumps connected to the

{ No. and size One - Fire Pump 4 1/2 x 5 x 4"

How driven Steam

Main Bilge Line

{ How driven Steam

Ballast Pumps, No. and size One 8" x 10" x 10"

Lubricating Oil Pumps, including Spare Pump, No. and size

Are two independent means arranged for circulating water through the Oil Cooler

Suctions, connected to both Main Bilge Pumps and Auxiliary

Bilge Pumps;—In Engine and Boiler Room 4 at 2 1/2" dia. &amp; 1 at 3" dia.

In Holds, &amp;c. Fore Hold 2 at 2 1/2" dia. Main Hold 2 at 3" dia.

Aft Hold 2 at 3" dia. Tunnel Well 1 at 2 1/2" dia.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 1 at 8" dia.

Independent Power Pump Direct Suctions to the Engine Room Bilges,

No. and size 1 at 4 1/2" dia.

Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes

Yes

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

Yes

Are all Sea Connections fitted direct on the skin of the ship

Yes

Are they fitted with 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 Overboard Discharges 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 pass through the bunkers

None

How are they protected

What pipes pass through the deep tanks

None

Have they been tested as per Rule

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Yes

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

compartment to another

Yes

Is the Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from Top platform

MAIN BOILERS, &amp;c.—(Letter for record (S)) Total Heating Surface of Boilers 5944 sq. ft.

Is Forced Draft fitted

Yes

No. and Description of Boilers 2—Single Ended Marine Type, Working Pressure 180 lbs. sq.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes

IS A DONKEY BOILER FITTED? Yes

If so, is a report now forwarded? Yes

PLANS. Are approved plans forwarded herewith for Shafting

Main Boilers

Yes

Auxiliary Boilers

Donkey Boilers

Yes

(If not state date of approval)

Superheaters General Pumping Arrangements Yes (with Ship Rpt) Oil fuel Burning Piping Arrangements

SPARE GEAR. State the articles supplied:— 1 C.I. Propeller, 1 Set Coupling bolts &amp; nuts, 2 Main Bearing bolts

&amp; nuts, 2 Top End bolts &amp; nuts, 2 Bottom End bolts &amp; nuts, 1 Set Feed Pump Valves, 1 Set Bilge

Pump Valves, 50 Assorted Bolts &amp; Nuts, 3 Bars of assorted Iron, 30 Condenser Tubes, 6 Plain

Boiler Tubes, 1 cwt. Steel Plate, 1 Safety Valve Spring, 3 Patent Tube Stoppers, 3 Common Tube

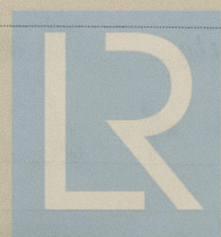
Stoppers, 1 Bottom End bearing, 6 Junk-Ring bolts &amp; nuts,

The foregoing is a correct description,

John Dickinson &amp; Sons, Limited.

Manufacturer.

Director.



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Lloyd's Register  
Foundation

008597 . 008607 . 0011



During progress of work in shops - - 1927. Oct 28 Nov 23 Dec 8 1928 Jan 9 10 11 Feb 2 15 24 28 29 Mar 1 2 8 12 13 16 21 27 28 29 30 Apr 2 3 4 11 13 17 19 24 25 26 27 30 May 1 3 5 8 9 11 16 17 18  
Dates of Survey while building During erection on board vessel - - -  
Total No. of visits 43

Dates of Examination of principal parts—Cylinders 13-4-28 Slides 3-4-28 Covers 13-4-28  
Pistons 12-3-28 Piston Rods 9-1-28 Connecting rods 15-2-28  
Crank shaft 2-4-28 Thrust shaft 17-4-28 Intermediate shafts 17-4-28  
Tube shaft ✓ Screw shaft 19-4-28 Propeller 19-4-28  
Stern tube 11-4-28 Engine and boiler seatings 25-4-28 Engines holding down bolts 5-5-28  
Completion of fitting sea connections 4-4-28  
Completion of pumping arrangements 16-5-28 Boilers fixed 3-5-28 Engines tried under steam 8-5-28  
Main boiler safety valves adjusted 8-5-28 Thickness of adjusting washers P.F. 7/16" P.A. 11/32" S.F. 13/32" S.A. 13/32"  
Crank shaft material Ingot Steel Identification Mark A.T.G. 2-4-28 Thrust shaft material Ingot Steel Identification Mark A.T.G. 17-4-28  
Intermediate shafts, material Ingot Steel Identification Marks A.T.G. 17-4-28 Tube shaft, material HOT ROLLED Steel Identification Mark ✓  
Screw shaft, material Ingot Steel Identification Mark A.T.G. 19-4-28 Steam Pipes, material Steel Test pressure 540 lbs Date of Test 26-4-28  
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 the Rules for carrying and burning oil fuel been complied with ✓  
Is this machinery duplicate of a previous case YES If so, state name of vessel S.S. "Bosnia" (Std. Rpt. No. 29682) S.S. "Bactria" (Std. Rpt. No. 2971)

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The materials and workmanship are good.  
The Machinery has been constructed under Special Survey, and satisfactorily fitted in the vessel, and is eligible in my opinion for classification and the notation LMC 5, 28.

CERTIFICATE TO BE SENT TO  
SUNDERLAND.

The Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee ... £ 5 : : When applied for,  
Special ... £ 85 : 9 : 18 May 1928  
Donkey Boiler Fee ... £ 7 : 2 :  
Travelling Expenses (if any) £ : : When received, 24 5 1928

A. I. Griffiths.  
Engineer/Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 25 MAY 1928  
Assigned + LMC 5:28

CERTIFICATE WRITTEN.