

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

Date of writing Report 24<sup>th</sup> OCT. 1942. When handed in at Local Office 30<sup>th</sup> OCT. 1942. Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey 21<sup>st</sup> JANUARY 1942. Last Survey 23<sup>rd</sup> OCTOBER 1942.

Reg. Book.

on the

"EMPIRE PIBROCH."

(Number of Visits 56)

Gross 7046

Net 4906

Built at Port Glasgow

By whom built

Lithgows Ltd.

Yard No. 980

When built 1942

Engines made at

Glasgow

By whom made

Rankin &amp; Blackmore Ltd.

Engine No. 488

When made 1942

Boilers made at

Glasgow

By whom made

Rankin &amp; Blackmore Ltd.

Boiler No. 488

When made 1942

Registered Horse Power

Owners

Ministry of War Transport

Port belonging to

Glasgow

Nom. Horse Power as per Rule 544

Is Refrigerating Machinery fitted for cargo purposes

Yes

Is Electric Light fitted

Yes

Trade for which Vessel is intended

Foreign

MACHINES, &amp;c.—Description of Engines

Triple Expansion Steam Reciprocating

Revs. per minute 70

Dia. of Cylinders

23 1/2" 37 1/2" 68"

Length of Stroke 48"

No. of Cylinders 3

No. of Cranks 3

Crank shaft, dia. of journals

as per Rule 13 1/2"

as fitted 13 3/4"

Crank pin dia.

13 3/4"

Crank webs

Mid. length breadth

Thick. parallel to axis

Intermediate Shafts, diameter

as per Rule 12.98"

as fitted 13"

Thrust shaft, diameter at collars

as per Rule 13 1/2"

as fitted 13 3/4"

Tube Shafts, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule 14.5"

as fitted 14 3/4"

Is the

shaft fitted with a continuous liner

Yes

Bronze Liners, thickness in way of bushes

as per Rule 7.42"

as fitted 5/4"

Thickness between bushes

as per Rule 9/16"

as fitted 5/8"

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

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

No

If so, state type

Propeller, dia. 18-3"

Pitch 17-3"

No. of Blades 4

Material C.I.

whether Moveable No

Total Developed Surface 108

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. 2

Diameter 4"

Stroke 24"

Can one be overhauled while the other is at work

Feed Pumps

No. and size One 8-10 1/2" x 22" Min. One 9 1/2" x 21"

Pumps connected to the

No. and size One 10 1/2" x 22" x 21"

One 9 1/2" x 21"

How driven

Steam

Main Bilge Line

How driven

Steam

Ballast Pumps, No. and size One 10 1/2" x 22" x 21"

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

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

Bilge Pumps;—In Engine and Boiler Room

3 at 3" dia.

Suctions, connected to both Main Bilge Pumps and Auxiliary

Pump Room

Officiant 1 @ 2 1/2" dia.

N<sup>o</sup> 3 Hold 2 @ 3" dia.In Holds, &c. N<sup>o</sup> 1-2 @ 3" dia.N<sup>o</sup> 2-2 @ 3 1/2" dia.

Cross Bunker 2 @ 2 1/2" dia.

Main Water Circulating Pump Direct Bilge Suctions, No. and size One @ 8" dia.

Independent Power Pump Direct Suctions to the Engine Room Bilges,

No. and size One @ 5" 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

Main Tank below

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

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

Tail Pipes pass through the bunkers

Found Bilge Suctions.

How are they protected

Wood covers.

Tail pipes pass through the deep tanks

Have they been tested as per Rule

Yes

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

No

Access from upper decks by tank

MAIN BOILERS, &amp;c.—(Letter for record 5)

Total Heating Surface of Boilers 2 Main 5830 + One Aux 2416 = 8246

Which Boilers are fitted with Forced Draft

2 Main &amp; 1 Auxiliary

Which Boilers are fitted with Superheaters

No. and Description of Boilers

Single Ended Scotch Multitubular

Working Pressure

220 lbs

A REPORT ON MAIN BOILERS NOW FORWARDED?

Yes

A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

Is the donkey boiler be used for domestic purposes only

PLANS. Are approved plans forwarded herewith for Shafting

7/5/40

Main Boilers

1/1/41

Auxiliary Boilers

Glo. Rpt

Donkey Boilers

(If not state date of approval)

General Pumping Arrangements

Yes

Oil fuel Burning Piping Arrangements

SPARE GEAR.

Is the spare gear required by the Rules been supplied

Yes

Is the principal additional spare gear supplied

The foregoing is a correct description.

RANKIN &amp; BLACKMORE LTD.

MANAGING DIRECTOR.

The foregoing is a correct description.

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(1942) JAN. 21. MAR. 5. 29. 31. APRIL 6. 9. 14. 22. 28. MAY 5. 9. 12. 14. 19. 27. 29. JUNE 3. 8.  
 During progress of work in shops -- 11. 15. 18. 23. 26. 30. JULY 2. 21. 22. 29. AUG. 3. 6. 7. 10. 14. 20. 21. 24. 27. 28. SEPT. 1. 4. 16. 21.  
 Dates of Survey while building During erection on board vessel --- 23. 25. 28. 29. OCT. 5. 6. 9. 12. 14. 16. 19. 21. 22. 23.  
 Total No. of visits 56.

Dates of Examination of principal parts—Cylinders 3/8/42. Slides 18/8/42. Covers 18/8/42.  
 Pistons 18/8/42. Piston Rods 22/7/42. Connecting rods 22/7/42.  
 Crank shaft 2/7/42. Thrust shaft 2/7/42. Intermediate shafts 11/6/42.  
 Tube shaft / Screw shaft 3/8/42. Propeller 27/8/42.  
 Stern tube 7/8/42. Engine and boiler seatings 27/8/42. Engines holding down bolts 9/10/42.  
 Completion of fitting sea connections 27/8/42.  
 Completion of pumping arrangements 19/10/42. Boilers fixed 16/9/42. Engines tried under steam  
 Main boiler safety valves adjusted 16/10/42. Thickness of adjusting washers P. 5 3/8" S. 5 3/8" Amp. 5 9/8" No. 10577  
 Crank shaft material S.M. Steel. Identification Mark MC. 2/7/42. Thrust shaft material S.M. Steel. Identification Mark 2/7/42  
 Intermediate shafts, material S.M. Steel. Identification Marks MC. 11/6/42. Tube shaft, material Bessener Steel. Identification Mark ---  
 Screw shaft, material S.M. Steel. Identification Mark No. 133 MC. 3/8/42. Steam Pipes, material --- Test pressure 660/lbs. Date of Test 28/9/42.  
 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 the use of oil as fuel been complied with ---  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No. If so, have the requirements of the Rules been complied with ---  
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have 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 boilers have been built under Special Survey, in accordance with the rules and the approved plans. The materials and workmanship are good. They have been securely fitted in the vessel, tried under steam and found satisfactory. The machinery is eligible, in my opinion, to have the Record of LMC 10.42. and T.S. (CL) and the Notation 2SB. 1 aux. B. F.D.

As requested in the London Letter dated 4<sup>th</sup> March 1940 the plans and Specification have been re-examined and a copy of the Certificate issued is attached.

The amount of Entry Fee ... £ 6 : 0 :  
 Special ... £ 86 : 4 :  
 Donkey Boiler Fee + 25% ... £ 21 : 11 :  
 Travelling Expenses (if any) £ : :  
 When applied for, 31<sup>st</sup> OCT. 1942.  
 When received, 19.....

Committee's Minute GLASGOW 3 NOV 1942

Assigned -/- LMC No. 42 28

M. Caldwell  
 Engineer Surveyor to Lloyd's Register of Shipping.



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 Foundation