

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

18 FEB 1931

Date of writing Report

10

When handed in at Local Office

16 FEB. 1931

Port of

LIVERPOOL

No. in Survey held at

Birkenhead

Date, First Survey

11th June/30

Last Survey

4th Feb'y/1931

Reg. Book.

(Number of Visits)

67

89465 on the

S. S. 'Aire'

Tons

Gross 1045

Net

Built at

Birkenhead

By whom built

Messrs. Cammell Laird & Co. Ltd

Yard No.

978

When built

1931

Engines made at

Do

By whom made

Cammell Laird & Co. Ltd

Engine No.

978

when made

1931

Boilers made at

Do

By whom made

Cammell Laird & Co. Ltd

Boiler No.

978

when made

1931

Registered Horse Power

Owners

London Midland & Scottish Rail Co

Port belonging to

Goole

Nom. Horse Power as per Rule

352

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yls.

Trade for which Vessel is intended

ENGINES, &c.—Description of Engines

Vertical Triple Expansion

Revs. per minute

95

Dia. of Cylinders

22, 36, 61"

Length of Stroke

39"

No. of Cylinders

Three

No. of Cranks

Three

Crank shaft, dia. of journals

as per Rule 11.73

as fitted 12.14

Crank pin dia.

12.34

Crank webs

Mid. length breadth 23.34

Mid. length thickness 7.16

Thickness parallel to axis 7.16

Thickness around eye-hole 5.12

Intermediate Shafts, diameter

as per Rule 11.18

as fitted 11.4

Thrust shaft, diameter at collars

as per Rule 11.73

as fitted 12.14

Tube Shafts, diameter

as per Rule 12.74

as fitted 14.14

Screw Shaft, diameter

as per Rule 12.74

as fitted 14.14

Is the

tube

shaft fitted with a continuous liner

No lines

Bronze Liners, thickness in way of bushes

as per Rule 11.73

as fitted 11.73

Thickness between bushes

as per Rule 11.73

as fitted 11.73

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

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

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

shaft

Yes

If so, state type

Pickers

Length of Bearing in Stern Bush next to and supporting propeller

4'9"

Propeller, dia.

13'0"

Pitch

16'6"

No. of Blades

4

Material

Cast iron

Whether Movable

No

Total Developed Surface

64

sq. feet

Feed Pumps worked from the Main Engines, No.

None

Diameter

Stroke

Can one be overhauled while the other is at work

Yes

Bilge Pumps worked from the Main Engines, No.

2

Diameter

Stroke

20"

Can one be overhauled while the other is at work

Yes

Feed

No. and size

2-9 1/2 x 7 x 21 stroke

Pumps connected to the

No. and size

1-8 x 9 x 8"

1-7 x 7 x 12"

How driven

Steam

Main Bilge Line

How driven

Steam

Ballast Pumps, No. and size

1-8 x 9 x 8"

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

Yes

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

Yes

Suctions, connected to both Main Bilge Pumps and Auxiliary

Bilge Pumps;—In Engine and Boiler Room

Engine Room 2-2 1/2"

Boiler Room 2-2 1/2"

In Holds, &c.

87 hold 2-2 1/2"; 12 hold 2-2 1/2"; 13 hold 2-2 1/2"; Tunnel 1-2 1/2"

Main Water Circulating Pump Direct Bilge Suctions, No. and size

1-7 1/2 dia"

Independent Power Pump Direct Suctions to the Engine Room Bilges,

No. and size

1-3 1/2 dia"

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

Yls.

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

Yls.

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

Yls.

Are they fixed with Valves or Cocks

Both.

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Yls.

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

Yls.

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Yls.

What Pipes pass through the bunkers

Bilge, Ballast pipes

How are they protected

Thick wood casing

What pipes pass through the deep tanks

Yls.

Have they been tested as per Rule

Yls.

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

Yls.

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

Yls.

Is the Shaft Tunnel watertight

Yls.

Is it fitted with a watertight door

Yls.

worked from

upper deck.

MAIN BOILERS, &c.—(Letter for record)

S.

Total Heating Surface of Boilers

5220 sq.

Is Forced Draft fitted

Yls.

No. and Description of Boiler

Two Cylindrical Multitube

Working Pressure

200 lb/sq.

IS A REPORT ON MAIN BOILERS NOW FORWARDED?

Yls.

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

Yls.

PLANS. Are approved plans forwarded herewith for Shafting

Main Boilers

Yls.

Auxiliary Boilers

Yls.

Donkey Boilers

Yls.

(If not state date of approval)

Superheaters

General Pumping Arrangements

Yls.

Oil fuel Burning Piping Arrangements

Yls.

SPARE GEAR. State the articles supplied:—

one crank shaft, set of crank pin braces, set of crosshead

brasses, 6 pin ring bolts, air pump bucket rod, circulating pump impeller,

spindle, piston pump rod for feed pump & ballast pump, fan engine

crank shaft, and other items in accordance with list attached to Report

on S.S. 'Calder'

The foregoing is a correct description,
CAMMELL LAIRD AND COMPANY LIMITED.

J. W. Laird

SECRETARY.

Manufacturer.



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Lloyd's Register

Foundation

NOTE.—The words which do not apply should be deleted.

7088P

Dates of Survey while building
During progress of work in shops -- June 11. 23. July 1. 7. 10. 11. 14. 16. 18. 21. 24. 29. Aug 12. 15. 18. 20. 22. 25. Sept 1. 2. 5. 9. 11. 15. 19. 22. 24. 30. Oct 1. 2. 6. 8. 13. 16. 15. 16. 17. 23. 28. 29. 31. Nov 7. 10. 11. 13. 17. 18. 20. 21. 24. 26. Dec 1. 3. 4. 8. 9. 10. 11. 13. 15. 19. 30. Jan 5. 8. 21. 26. Feb 4.
During erection on board vessel --
Total No. of visits 67.

Dates of Examination of principal parts—Cylinders 25/8/30 23/10/30 13/11/30 20/11/30 Slides 2/9/30 23/10/30 Covers 25/8/30 20/11/30
Pistons 2/9/30 9/9/30 Piston Rods 24/7/30 23/10/30 Connecting rods 2/9/30 23/10/30
Crank shaft 2/9/30 2/9/30 20/9/30 23/10/30 13/11/30 Thrust shaft 25/8/30 20/9/30 23/10/30 Intermediate shafts 12/8/30 31/10/30 23/10/30 13/11/30
Tube shaft 2/9/30 2/9/30 20/9/30 23/10/30 Screw shaft 23/10/30 13/11/30 Propeller 2/9/30 24/11/30
Stern tube 29/10/30 28/11/30 Engine and boiler seatings 4/11/30 Engines holding down bolts 5/11/30
Completion of fitting sea connections 9/12/30 Boilers fixed 30/12/30 Engines tried under steam 4/2/31
Completion of pumping arrangements 8/1/31 Thickness of adjusting washers 100th both 3/8" 100th 13/32" 5 3/8"
Main boiler safety valves adjusted 21/1/31 Crank shaft material steel Identification Mark 6840.D. Thrust shaft material steel Identification Mark 3967
Intermediate shafts, material steel Identification Marks 3980 3986 Tube shaft, material steel Identification Mark 3986
Screw shaft, material steel Identification Mark 3986 Steam Pipes, material steel Test pressure 600lbs Date of Test
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 ✓ If so, have the requirements of the Rules been complied with ✓
Is this machinery duplicate of a previous case Yls. If so, state name of vessel s/s 'Calder' (the RPT No. 97993).

General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under special survey, and is in accordance with the Rules and the approved plans.
The workmanship is good.
On completion, the machinery was examined under full working conditions during sea trials and found satisfactory, and is eligible in my opinion for record of LMC 2.31 in Register's book.

Committee's Minute
Assigned + LMC 2.31
CERTIFICATE WRITTEN. Elec Light.

The amount of Entry Fee ... £ 5.00.
Special ... £ 77.16.0.
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 17 FEB. 1931
When received, 27.2.31
J. S. Milton
Engineer Surveyor to Lloyd's Register of Shipping.
LIVERPOOL 17 FEB. 1931
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