

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

JAN 22 1941

Date of writing Report

When handed in at Local Office

14/1/41

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at  
Reg. Book.

South Shields

Date, First Survey

15 March

Last Survey

Dec 31

1940

(Number of Visits)

131

81995 on the

S.S. EMPIRE RAIN

Tons

Gross 7290.13

Net 5122.82

Built at

S. Shields

By whom built

J. Readhead &amp; Sons Ltd

Yard No.

520

When built

1940

Engines made at

South Shields

By whom made

J. Readhead &amp; Sons Ltd

Engine No.

520

When made

1940

Boilers made at

South Shields

By whom made

J. Readhead &amp; Sons Ltd

Boiler No.

520

When made

1940

Registered Horse Power

Owners

Ministry of Shipping

Port belonging to

S. Shields

Nom. Horse Power as per Rule

435

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

Revs. per minute 62

Dia. of Cylinders

25 x 42 x 71

Length of Stroke

48"

No. of Cylinders

3

No. of Cranks

3

Crank shaft, dia. of journals

as per Rule 14.115"

as fitted 14 1/4"

Crank pin dia.

14 1/4"

Crank webs

Mid. length breadth 11-8 1/2"

Mid. length thickness 9"

Thrust shaft, diameter at collars

as per Rule 14.175"

as fitted 14 1/4"

Intermediate Shafts, diameter

as per Rule 13 1/2"

as fitted 13 1/2"

Tube Shafts, diameter

as per Rule 15.04"

as fitted 15 1/4"

Bronze Liners, thickness in way of bushes

as per Rule 7.65"

as fitted 7 1/2"

Thickness between bushes

as per Rule 15.04"

as fitted 15 1/4"

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

Yes

shaft

If so, state type

Yes

Length of Bearing in Stern Bush next to and supporting propeller

5'-1 1/4"

Propeller, dia.

10-3"

Pitch

17-9"

No. of Blades

4

Material

C.I.

whether Moveable

No

Total Developed Surface

110

sq. feet

Feed Pumps worked from the Main Engines, No.

2

Diameter

4 3/8"

Stroke

24"

Can one be overhauled while the other is at work

Yes

Bilge Pumps worked from the Main Engines, No.

2

Diameter

4 1/2"

Stroke

24"

Can one be overhauled while the other is at work

Yes

Feed Pumps

No. and size

(2) 9 x 12 x 24 (1) 9 x 12 x 24

How driven

Steam

Ballast Pumps, No. and size

(1) 9 1/2 x 12 x 18 (1) 8 x 11 x 18

How driven

Steam

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

1

No. and size

(1) 9 1/2 x 12 x 18 (1) 8 x 11 x 18

How driven

Steam

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

3-3" dia

In Pump Room

In Holds, &amp;c.

N°1 hold 2-3" dia N°2 hold 2-3 1/2" dia N°3 hold

2-2 1/2" dia N°4 hold 2-2 1/2" dia N°5 hold 2-3" dia

Tunnel well 1-2 1/2" dia

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

One 9" 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

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

What Pipes pass through the bunkers

Bilge—side ports

How are they protected

Wood casing

What pipes pass through the deep tanks

Yes

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

worked from

Yes

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

Total Heating Surface of Boilers

5486 sq

Is Forced Draft fitted

Yes

No. and Description of Boilers

2 S.E.M.

Working Pressure

220 lb/sq

IS A REPORT ON MAIN BOILERS NOW FORWARDED?

Yes

IS A DONKEY BOILER FITTED?

No

If so, is a report now forwarded?

Yes

Is the donkey boiler intended to be used for domestic purposes only

PLANS.

Are approved plans forwarded herewith for Shafting

8-4-40

Main Boilers

21-10-20

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

24-9-40

Oil fuel Burning Piping Arrangements

Yes

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

Additional spare gear (Managers) 50 Brass ferrules for condenser tubes & 100 packings  
 3 Taper gauge glasses. 4 Taper packing washers for gauge glasses. 12 Piston studs  
 1 Set piston rings for M.P. & L.P. pistons. 10 Condenser tubes. 12 Plain tubes for boilers.  
 6 Complete sets of furnace front baffle plates. 9 Back bridge plates. 100 Firebars  
 for boilers. Wood patterns for baffle plates, bridge plates & firebars.

FOR JOHN READHEAD &amp; SONS LTD.

The foregoing is a correct description,

C. H. Power

MANAGING DIRECTOR.

Manufacturer.



© 2020

Lloyd's Register  
Foundation

005020-005028-0205

1940  
Mar. 15, 28. Apr. 4, 9, 18, 19, 22, 23, 24, 25, 26, 27, 29. May 6, 17, 23, 29. June 4, 6, 7, 10, 11, 13, 14. July 1, 3, 4, 5, 8, 9, 12, 15, 16, 17, 18, 19, 23, 24, 25, 26, 29, 30, 31. Aug. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31. Sep. 2, 4, 5, 6, 10, 16, 18, 19, 20, 23, 24, 25, 26, 27, 30. Oct. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31. Nov. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31. Dec. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31.

Dates of Survey while building  
During progress of work in shops --  
During erection on board vessel --  
Total No. of visits 131

Dates of Examination of principal parts—Cylinders 14-11-40 Slides 14-11-40 Covers 19-11-40  
Pistons 19-11-40 Piston Rods 12-11-40 Connecting rods 12-11-40  
Crank shaft 30-9-40 Thrust shaft 7-12-40 Intermediate shafts 7-12-40  
Tube shaft ✓ Screw shaft 30-10-40 Propeller 30-10-40  
Stern tube 23-10-40 Engine and boiler seatings 12-11-40 Engines holding down bolts 5-12-40  
Completion of fitting sea connections 29-10-40  
Completion of pumping arrangements 31-12-40 Boilers fixed 6-12-40 Engines tried under steam 7-12-40  
Main boiler safety valves adjusted 30-12-40 Thickness of adjusting washers P-5/8 P-5/16  
Crank shaft material S.M. Steel Identification Mark 375 Thrust shaft material S.M. Steel Identification Mark 4998  
Intermediate shafts, material S.M. Steel Identification Marks 4992 4995 4993 4996 4994 4997 Tube shaft, material ✓ Identification Mark 12-11-40  
Screw shaft, material S.M. Steel Identification Mark 4991 Steam Pipes, material S.S. Steel Test pressure 660 lbs Date of Test 2-12-40  
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 ✓  
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.)  
The machinery of this vessel has been constructed under special survey in accordance with rule requirements & approved plans. Materials & workmanship are good. The machinery was satisfactorily tested on moving trials & in my opinion is eligible for classification with records of + L.M.C. 12, 40, F.D. C.L.

The amount of Entry Fee ... £ 5 : 0 : 0 When applied for,  
Special ... £ 112 : 16 : 3 120 JAN 1941  
Donkey Boiler Fee ... £ ✓ : ✓ : When received,  
Travelling Expenses (if any) £ ✓ : ✓ : 19

Committee's Minute TUE. 28 JAN 1941  
Assigned J. H. Matthews  
Engineer Surveyor to Lloyd's Register of Shipping.

