

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Date of writing Report

19

When handed in at Local Office

17/6/37 Port of

Received at London Office JUN 18 1937
NEWCASTLE-ON-TYNENo. in Survey held at
Reg. Book.

Newcastle on Tyne

Date, First Survey 26 Nov 136 Last Survey 15 June 1937

(Number of Visits 25)

Gross
Tons
Net

Built at Sunderland

By whom built Messrs Short Bros

Yard No. 450

When built 1937

Engines made at

Newcastle on Tyne (Hartam)

By whom made White's Mar. Engrs. Co. Ltd

Engine No. 11.C.

When made 1937

LP Turbine " "

ditto 1st Peter

By whom made Hawthorn, Leslie & Co. Ltd

Turbine No 9934.

When made 1937

Boilers made at

Middlesbrough

By whom made STOCKTON CHEMICAL ENGINEERING

Boiler No. 6245-6.

When made 1937

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power as per Rule

348

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which Vessel is intended

Ocean going.

ENGINES, &c.—Description of Engines

Comp. 4 Cyls. S.R. Geared and L.P. Turbine D.R. Geared

Recip Eng 304

Dia. of Cylinders

2 of 10 1/8 + 2 of 20 1/4

Length of Stroke 13"

No. of Cylinders 4

No. of Cranks 4

Crank shaft, dia. of journals

as per Rule 4.79"

Crank pin dia. 7 3/4"

Crank webs

Mid. length breadth 9 3/4"

Thickness parallel to axis

Intermediate Shafts, diameter

as per Rule 11.40"

as fitted 11 7/8"

Thrust shaft, diameter at collars

as per Rule 11.97"

as fitted 12 1/2"

Tube Shafts, diameter

as per Rule 12.87"

Screw Shaft, diameter

as per Rule 13 3/8"

Is the

tube screw

shaft fitted with a continuous liner

Yes

Bronze Liners, thickness in way of bushes

as per Rule 22.25"

as fitted 22 3/32"

Thickness between bushes

as per Rule 16.7"

as fitted 16 7/32"

Is the after end of the liner made watertight in the

propeller boss

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

in one piece.

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

tight fit.

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

If so, state type

Length of Bearing in Stern Bush next to and supporting propeller

Propeller, dia. 17 7/8"

Pitch

Yes

No. of Blades

Yes

Material

Yes

whether Moveable

Yes

Total Developed Surface

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. None

Diameter

Stroke

Can one be overhauled while the other is at work

Yes

Feed Pumps

No. and size

One 6" x 8 1/2" x 13" Stroke

Pumps connected to the

No. and size

How driven

Ballast Pumps, No. and size

Yes

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

One 6" x 5 1/2" x 15" Stroke

How driven

One Rotary

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

Yes

In Pump Room

Yes

In Holds, &c.

Yes

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

Yes

Independent Power Pump Direct Suctions to the Engine Room Bilges,

No. and size

Yes

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

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

Yes

Are they fitted with Valves or Cocks

Yes

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

Yes

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

Yes

How are they protected

Yes

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

Is the Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from

Yes

MAIN BOILERS, &c.—(Letter for record)

Total Heating Surface of Boilers 4886 sq. ft.

(1/2 of 2 Main, 3400 sq. ft.)

or Auxy. 1486 sq. ft.)

Is Forced Draft fitted

Yes

No. and Description of Boilers

2 MAIN & 1 AUXY.

Working Pressure

240 lbs/sq. in.

IS A REPORT ON MAIN BOILERS NOW FORWARDED? See Mdd. Rpts. No.

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

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

Yes

PLANS.

Are approved plans forwarded herewith for Shafting

Yes

Auxiliary Boilers

Yes

Donkey Boilers

Yes

Superheaters

Yes

General Pumping Arrangements

Yes

Oil fuel Burning Piping Arrangements

Yes

SPARE GEAR.

Has the spare gear required by the Rules been supplied

Yes

State the principal additional spare gear supplied

2 Top end bolts + nuts

2 Bottom end bolts + nuts

2 main Bearing bolts + nuts

18 Piston Junk ring studs + nuts

20 Condenser tubes + 50 ferrules

1 set of valves for water ends of auxy. pumps.

1 HP + 1 LP Escape Valve Springs

Quantity of assorted Bolts, Studs + Nuts

+ iron of various sizes.

6 HP Piston Rings, 2 LP Piston Rings

6 Shaft coupling bolts, 1 Spare Screw Shaft

and One Cast Iron Propeller.

The foregoing is a correct description,
For White's Marine Engineering Co. Ltd.

Manufacturer.

Lloyd's Register
Foundation

W188 - 0019

1936 1937
 During progress of work in shops - - Nov. 26 Jan 4. 20. 27. 29. Feb. 4. 10. 15. Mar. 10. 12. 15. 25. Apr. 7. 15. 21.
 During erection on board vessel - - - May 4. 11. 25. 26. 28. June 1. 4. 7. 11. 15.
 Dates of Survey while building
 Total No. of visits 25.

Dates of Examination of principal parts—Cylinders 27/4/37 29/11/37 14/2/37 12/2/37 Slides 4/5/37 Covers As for Cylinders.
 Pistons 4/5/37 Piston Rods 7/4/37 Connecting rods 7/4/37
 Crank shaft 25/3/37 (Bedded in main Brge.) Thrust shaft ✓ Intermediate shafts ✓
 Tube shaft ✓ Screw shaft ✓ Propeller ✓
 Stern tube 4/5/37 (3000/100 hyd. test.) Engine and boiler seatings ✓ Engines holding down bolts ✓
 Completion of fitting sea connections ✓
 Completion of pumping arrangements ✓ Boilers fixed ✓ Engines tried under steam on test-bed 27/5/37
 Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓
 Crank shaft material Forged Steel Identification Mark LLOYDS 2499 + 2500 25.5/2/37 Thrust shaft material ✓ Identification Mark ✓
 Intermediate shafts, material ✓ Identification Marks ✓ Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material ✓ Identification Mark ✓ Steam Pipes, material ✓ Test pressure ✓ Date of Test ✓
 Is an installation fitted for burning oil fuel ✓ 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 ✓ If so, state name of vessel

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

This Reciprocating Engine has been constructed under special survey in accordance with the Rules and approved plans. The materials and workmanship are good. The Engine has been sent to Sunderland to be installed on S/S BIDDLESTONE, Messrs Short Bros' Yard No 450.

The installation is eligible, when completed, for record + LMC. with date.

NHP of Installation } Basis: - Recip Eng 1HP = 930 x .90 = 837 SHP; 2 Main Bln = 3400 sq ft HS.
 = 348 } L.P. Turbine (Rating as per spec by H. Leslie) = 640 SHP F.Draft
 NHP = $\frac{240 + 590}{1500} \left(\frac{1477}{6} + \frac{3400}{12} + \frac{1486}{15} \right)$ 1 Auxy Bln = 1486 sq ft HS. hab. Draft
 = $\frac{830}{1500} (246.16 + 283.33 + 99.07) = 347.8$ (say 348 NHP)

LMC FEE for above = 1st 250 NHP x 5/- = 1250/-
 Remj. 98 " x 3/- = 294/- = 1544/- = £ 77-4-0

X Allotment of Fees.
 Recip Eng £ 9-5-0
 L.P. Turb. £ 10-12-0
 DR/SR Gear. £ 9-0-0 + Exps 7/- London Surveyors
 2 main Bln £ 23-0-0 } as charged
 Auxy Bln £ 9-18-0 } by M&B Surveyors.
 Installing Mchry £ 15-9-0
 TOTAL £ 77-4-0
 1st Entry Fee 5-0-0

The amount of Entry Fee ... £ 5 : 0 :
 Special LMC as above £ 77 : 4 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : 7/-
 Committee's Minute TUE 20 JUL 1937

Assigned See Sld 22319

A Watt.
 Engineer Surveyor to Lloyd's Register of Shipping.