

16 DEC 1931
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pt. 4b.

REPORT ON OIL ENGINE MACHINERY

No. 87428

14 AUG 1931

Received at London Office

10 AUG 1931

Port of

NEWCASTLE-ON-TYNE

ite of writing Report

When handed in at Local Office

o. in Survey held at
g. Book.

Wallsend-on-Tyne

Date, First Survey September 1930

Last Survey Aug 1931

Number of Visits 73

Tons { Gross
Net

on the ^{Single} Twin ^{Triple} Screw vessel

uilt at Belfast
Engines made at Wallsend

By whom built

Workman Clark & Co Ltd
North Eastern Har & Co Ltd

Yard No. 519

When built 1931

By whom made

Engine No. 2434

When made 1931

By whom made

Boiler No.

When made

ake Horse Power 4000

Owners

Port belonging to

om. Horse Power as per Rule

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

ade for which vessel is intended

ENGINES, &c.

Type of Engines

Twin screw Warkworth Supercharged.

2 or 4 stroke cycle 4

Single or double acting S.A.

imum pressure in cylinders

550 lbs.

Diameter of cylinders

630 mm

Length of stroke

1100 mm

No. of cylinders

12

No. of cranks

12

an of bearings, adjacent to the Crank, measured from inner edge to inner edge

840 mm

Is there a bearing between each crank

yes

olutions per minute

135

Flywheel dia.

2260 mm

Weight

6 1/2 tons

Means of ignition

compression

Kind of fuel used F.P. above 150° F

ank Shaft, dia. of journals

as per Rule 398 mm

as fitted 410 mm

Crank pin dia.

410 mm

Crank Webs

Mid. length breadth 410 mm

Mid. length thickness 245 mm

shrunk

Thickness parallel to axis 245 mm

Thickness around eyehole 149 mm

owheel Shaft, diameter

as per Rule 398 mm

as fitted 410 mm

Intermediate Shafts, diameter

as per Rule

as fitted

Thrust Shaft, diameter at collars

as per Rule 284 mm

as fitted 300 mm

be Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

Is the tube screw shaft fitted with a continuous liner

ronze Liners, thickness in way of bushes

as per Rule

as fitted

Thickness between bushes

as per rule

as fitted

Is the after end of the liner made watertight in the

opeller boss

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

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

Length of Bearing in Stern Bush next to and supporting propeller

If so, state type

propeller, dia.

Pitch

No. of blades

Material

whether Moveable

Total Developed Surface

sq. feet

ethod of reversing Engines compressed air

Is a governor or other arrangement fitted to prevent racing of the engine when disconnected

yes

Means of lubrication

Thickness of cylinder liners

40 mm

Are the cylinders fitted with safety valves

yes

Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material

yes

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine

ooling Water Pumps, No. 2 @ 250 dia x 254 stroke D.A.

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Can one be overhauled while the other is at work

yes

ilge Pumps worked from the Main Engines, No. 4

Diameter 2 @ 150 mm

Stroke 254 mm

No. and Size

How driven

umps connected to the Main Bilge Line

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

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

In Pump Room

allast Pumps, No. and size

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

umps, No. and size:—In Machinery Spaces

n Holds, &c.

ndependent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

re all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

d from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

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

Are they fitted with Valves or Cocks

Are the Overboard Discharges above or below the deep water line

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

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

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

How are they protected

That pipes pass through the bunkers

Have they been tested as per Rule

That pipes pass through the deep tanks

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

s 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

mpartment to another

Is the Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

f a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

HP 120 ; 440 ; 520

LP 450

Driven by main engine

lain Air Compressors, No. Two

No. of stages Three

Diameters 120 ; 440 ; 520

Stroke 450

Driven by

uxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

mall Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

evacuating Air Pumps, No.

Diameter

Stroke

Driven by

uxiliary Engines crank shafts, diameter

as per Rule

as fitted

Position

RE RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Is a drain fitted at the lowest part of each receiver

in the internal surfaces of the receivers be examined and cleaned

High Pressure Air Receivers, No. Two

Cubic capacity of each 400 Litres

Internal diameter 450 mm

thickness 21 mm

Range of tensile strength 39 to 36 tons

Working pressure by Rules 155 lbs

Actual 1100 lbs

Material Seamless

Internal diameter

thickness

Working pressure by Rules

Actual

Material

Range of tensile strength

Working pressure by Rules

Actual

Material

Range of tensile strength

Working pressure by Rules

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Range of tensile strength

Working pressure by Rules

Actual

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

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

PLANS. Are approved plans forwarded herewith for Shafting *sent with to 27/1-2* Receivers *Separate Tanks*
(If not, state date of approval)

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes.*State the principal additional spare gear supplied *as per list enclosed.*THE NORTH BRITISH ENGINEERING CO., LTD.
The foregoing is a correct description.

Manufacturer.

Dates of Survey while building

During progress of work in shops--	Sept. 1. 8. Oct. 3. 9. 15. 20. 25. 26. Dec. 14. Jan. 19. 26. Feb. 16. 19. 24. 27. Mar. 2. 6. 11. 12. 20. 27. 30. 31.
During erection on board vessel--	April. 8. 20. 21. 28. 29. May. 1. 5. 6. 8. 11. 13. 15. 18. 20. 22. 26. 28. 29. June. 1. 3. 4. 5. 6. 8. 9. 10. 12. 15. 17. 18. 19. 22. 29. 30. July. 1. 3. 7. 8. 9.
Total No. of visits	73.

Dates of Examination of principal parts—Cylinders 6-3-31 to 6-3-31 to 8-5-31 8-4-31
Crank shaft 8-30-1 on 13-8-30 Flywheel shaft 20-10-30 Thrust shaft 25-11-30 Intermediate shafts 31-4-31
Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections

Completion of pumping arrangements

Engines tried under working conditions

Crank shaft, Material *OH Steel* Identification Mark *8281-7 J.L. 8320-1* Flywheel shaft, Material *OH Steel* Identification Mark *3888 wps*Thrust shaft, Material *OH Steel* Identification Mark *3888 wps. AF* Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

Is the flash point of the oil to be used over 150° F.

Have the requirements of the Rules for oil fuel pipes and tank fittings 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 *yes* If so, state name of vessel *27/1-2*

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

This machinery has been built under Special Survey. Materials & workmanship good, hydraulic tests satisfactory. It has been shipped to Belfast for installation in the vessel. Belfast surveyors have been notified.

The amount of Entry Fee .. £ 6 : 00 :
Special *1/2* fee £ 88 : 11 : 0
Donkey Boiler Fee ... £ : :
Travelling Expenses (if any) £ : :
When applied for, 13 AUG 1931
When received, 2nd Sept 1931

Committee's Minute TUE. 22 DEC 1931

Assigned

Sec. F.E. Rpt.

William D. Little
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation