

REPORT ON OIL ENGINE MACHINERY.

No. 82968

7 JUL 1928

Received at London Office

5/7/28 Port of Newcastle-on-Tyne

of writing Report

When handed in at Local Office

Wallsend-on-Tyne

Date, First Survey 21 Jan 1928

Last Survey July 5th 1928

Number of Trials 128

in Survey held at

Wallsend-on-Tyne

Book.

Single
Twin
Triple
Quadruple

Screw vessel

"Optic"

Gross Tons 8281
Net Tons 5111

t at

Wallsend-on-Tyne

By whom built Swan Hunter Wigham & Co Ltd

Yard No. 1319 When built 1928

ines made at

Wallsend

By whom made Wallsend Slipways & E. Co Ltd

Engine No. 864 When made 1928

key Boilers made at

Stockton on Tees & others

By whom made Ribby Bros & Dalcock & Wiles

Boiler No. 5411; When made 1928

ke Horse Power

Owners Shaw Saville & Albion Coy Ltd

Port belonging to London

u. Horse Power as per Rule

2020

Is Refrigerating Machinery fitted for cargo purposes yes

Is Electric Light fitted yes

de for which vessel is intended

New Zealand

Frozen meat & General cargo

ENGINE, &c.—Type of Engines

Wallsend Sulzer

2 or 4 stroke cycle 2 Single or double acting S.A.

imum pressure in cylinders

540

Diameter of cylinders 31" Length of stroke 43" No. of cylinders 12 No. of cranks 12

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

3.52"

Is there a bearing between each crank yes

utions per minute

112

Flywheel dia. 22.2939" Weight 3 tons 12 cwt

Means of ignition Compression Kind of fuel used above 150° F. Flash P.

ck Shaft, dia. of journals

as per Rule 20" 19.93

as fitted 20.2" Crank pin dia. 2.08"

Crank Webs Mid. length breadth variable Mid. length thickness 12 3/4

heel Shaft, diameter

as per Rule 20.0

as fitted 20.2" Intermediate Shafts, diameter as per Rule 15.4"

Thrust Shaft, diameter at collars as per Rule 16.4"

ce Shaft, diameter

as per Rule 15.55

as fitted 17.4" Is the tube screw shaft fitted with a continuous liner yes

ize Liners, thickness in way of bushes

as per Rule 1/8"

as fitted 7/8" Thickness between bushes as per rule 25.22"

Is the after end of the liner made watertight in the after boss yes

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

yes

wo 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

opper, dia.

15.9"

Pitch 15.0" No. of blades 4 Material Bronze whether Moveable yes

Total Developed Surface 82 sq. feet

ethod of reversing Engines Compressed Air

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

yes

Means of lubrication

eed Thickness of cylinder liners

2 1/4"

Are the cylinders fitted with safety valves yes

Are the exhaust pipes and silencers water cooled or lagged with conducting material yes

oling Water Pumps, No.

Three

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

yes

ge Pumps worked from the Main Engines, No.

none

Diameter Stroke Can one be overhauled while the other is at work

2 centre pumps 5" disc & 1 centre piston cooling drain tank 5" disc

mps connected to the Main Bilge Line

No. and Size 2 centre pumps 5" disc & 1 centre piston cooling drain tank 5" disc

How driven all electric motor driven

Lubricating Oil Pumps, including Spare Pump, No. and size 2

last Pumps, No. and size

one centre 4" disc

Lubricating Oil Pumps, including Spare Pump, No. and size 2

two independent means arranged for circulating water through the Oil Cooler

mps, No. and size:—In Machinery Spaces

4 @ 3 1/2" dia + 1 @ 3" in Tunnel well

Holds, &c. 1 @ 2 @ 3 1/2", 1 @ 2 @ 3 1/2", 1 @ 2 @ 2 1/4", 1 @ 2 @ 3", 1 @ 5 @ 3", 1 @ 6 @ 3",

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Three. 2 @ 5 1/2" + 1 @ 4" dia

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

yes

Are the Bilge Suctions in the Machinery Spaces

yes

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

yes

Are they fitted with Valves or Cocks

both

all Sea Connections fitted direct on the skin of the ship

yes

Are the Overboard Discharges above or below the deep water line

below

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

yes

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

yes

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

yes

How are they protected

yes

at pipes pass through the bunkers

none

Have they been tested as per Rule

yes

at pipes pass through the deep tanks

yes

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

yes

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 apartment to another

yes

Is the Shaft Tunnel watertight

yes

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

yes

Is it fitted with a watertight door

yes

ain Air Compressors, No.

Two

No. of stages Three

Driven by main engines

ixiliary Air Compressors, No.

Two

No. of stages Three

Driven by Electric motor

mall Auxiliary Air Compressors, No.

One

No. of stages Two

Driven by Steam

aving Air Pumps, No.

Two Turbo Blowers

Capacity 39000 Cub ft per min @ 1.5 lbs sq" 2850 R.P.M.

Driven by Electric motor

axiliary Engines crank shafts, diameter

as per Rule see separate reports

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

yes

What means are provided for cleaning their inner surfaces

manhole in ends.

in the internal surfaces of the receivers be examined

yes

Is there a drain arrangement fitted at the lowest part of each receiver

yes

igh Pressure Air Receivers, No.

4

Cubic capacity of each 2 @ 28 cub ft 2 @ 5.5 " Internal diameter 2 @ 20" 2 @ 11 1/8" thickness 2 @ 1", 2 @ 3/8"

Material Seamless Range of tensile strength 28 to 32 tons Working pressure by Rules 1000 lbs

eamless, lap welded or riveted longitudinal joint

3 @ 600 lbs

Material Steel Range of tensile strength 28 to 32 tons Working pressure by Rules 627.4 lbs

Material riveted Total cubic capacity 216 " Internal diameter 4'-0" thickness 1 1/8"

004411-004417-0088

IS A DONKEY BOILER FITTED? *Yes, 1 oil fired waste heat* If so, is a report now forwarded? *Yes*

PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *yes* Separate Tanks *yes*

Donkey Boilers *yes* General Pumping Arrangements *yes* Oil Fuel Burning Arrangements *yes*

SPARE GEAR *2 Cylinders covers complete 6 fuel valve needle valves, 2 pistons complete, 36 piston rings, 1 piston rod, 6 telescope pipes for piston cooling. Gear wheels & skew wheels for cam shaft. Saw each bolts & nuts for top & bottom ends & main bearings, 1 set crank shaft coupling bolts, 1 set intermediate shaft coupling bolts. 2 sets pads for thrust blocks, 6 plungers for fuel pumps & all parts for one pump. 1 propeller shaft. 2 Bronze propeller blades. Spare gear as required for main engine air compressor. 2 sets piston rings, one full set of valves etc as per list. Spare gear for aux diesel engine as per rules. Set of suction & delivery valve for oil fuel pumps, ludge pumps, donkey feed pump & lubricating oil pumps. Quantity of assorted bolts nuts & iron also additional spare gear as per list hereint*

The foregoing is a correct description,

Manufacturer.

Hain

Dates of Survey while building	During progress of work in shops --	1927. JAN. 21. 25. FEB. 2. MAR. 17. 23. APR. 4. 22. MAY. 3. 5. 13. JUNE. 3. 8. 15. 30. JULY. 6. AUG. 15. 19. 22. 25. 26. 27. 29. 30. 31. SEP. 1. 5. 6. 9. 12.
	During erection on board vessel --	16. 19. 20. 21. 22. 23. 26. 28. 30. OCT. 3. 5. 6. 10. 12. 13. 17. 18. 19. 20. 21. 24. 26. 27. 31. NOV. 1. 7. 9. 10. 11. 14. 15. 16. 17. 21. 22. 24. 28. 29. 30.
	Total No. of visits	DEC. 2. 5. 8. 9. 12. 16. 19. 20. 23. 29. 30. 1928 JAN. 4. 10. 11. 12. 16. 17. 20. 23. 24. 25. 26. 30. FEB. 1. 2. 7. 9. 15. 17. 24. 29. MAR. 7. 9. 13. 20. 27. APR. 2. 3. 4. 19. 20. 24. MAY. 2. 8. 11. 16. 17. 21. 23. 30. JUNE. 7. 8. 18. 19. 20. 21. JULY. 2. 5.

Dates of Examination of principal parts	Cylinders	Covers	Pistons	Rods	Connecting rods	Area of F
	30-8-27 to 10-10-27	29-8-27 to 10-10-27	19-10-27 to 10-10-27	20-9-27 to 28-9-27	28-9-27 to 3-10-27	
Crank shaft	25-8-27, 19-9-27	Flywheel shaft	28-9-27 to 15-9-27	Thrust shaft	28-9-27 to 15-9-27	Area of ed
Screw shaft	27-10-27	Propeller	10-11-27, 11-1-28	Stern tube	23-9-27 to 12-12-27	State whet
Completion of fitting sea connections	17-2-28	Completion of pumping arrangements	2-5-28	Engines tried under working conditions	5-4-28	or woodwo
Crank shaft, Material	Old Steel	Identification Mark	1948 0975, 1971 090 2094	Flywheel shaft, Material	Old Steel	Identification Mark
Thrust shaft, Material	Old Steel	Identification Mark	1999, 2001	Intermediate shafts, Material	Steel	Identification Mark
Tube shaft, Material	Iron	Identification Mark	✓	Screw shaft, Material	Old Steel	Identification Mark

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes*

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 *✓*

Is this machinery duplicate of a previous case *yes* If so, state name of vessel *M.S. Zealandic.*

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

The Machinery of this vessel has been built under Special Survey. Materials & Workmanship good. Hydraulic tests satisfactory. The whole of the machinery has been efficiently installed & fixed in the vessel and has been tried and maneuvered under working conditions as required by the Rules and is in good & safe working condition and eligible in my opinion to be classed and have records L.M.C. 7-28. Tail Shaft C.L. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 7-28 C.L. OIL ENGINES 280 SA. 200 100 H.P. 12cy 31-43" N.H.P. 2020.

The amount of Entry Fee ... £ 6 : 0 : 0 When applied for

Special ... £ 150 : 10 : 0 JULY 1928

Donkey Boiler Fee ... £ ✓ : When received, 17.7.28

Travelling Expenses (if any) £ ✓ : 19

Committee's Minute TUES. 10 JUL 1928

Assigned + R.M.C. 7:28 C.L. Oil engines 2 SA 100 H

Engineer Surveyor to Lloyd's Register of Shipping. *William R. Bates*

NEWCASTLE-ON-TYNE

Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)

