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2 JUL 1946

IN D.O.

REPORT ON OIL ENGINE MACHINERY.

No. 53546

Pm 16187

Received at London Office

HULL

21 JUL 1946

No. 70176

Date of writing Report 19 When handed in at Local Office

Port of

No. in Survey held at
Reg. Book.

Goole and Hull.

Date, First Survey

13.12.45

Last Survey

12.6.1946

Number of Visits

16

Single
on the Twin
Triple
Quadruple

Screw vessel

"CATO"

Tons { Gross 940
Net 497

Built at

Goole

By whom built Goole S.B. & R. Co. Ltd.

Yard No. 442 When built 1946

Engines made at

Glasgow

By whom made British Polar Engines Ltd.

Engine No. 584 When made 1946

Donkey Boilers made at

none

By whom made

✓

Boiler No. ✓ When made ✓

Brake Horse Power

520 ✓

Owners The Bristol Steam Nav. Co. Ltd.

Port belonging to Bristol

Nom. Horse Power as per Rule

118 ✓

Is Refrigerating Machinery fitted for cargo purposes

no ✓

Is Electric Light fitted

yes ✓

Trade for which vessel is intended

MN 134 ✓

Coastal Service

L. ENGINES, &c.—Type of Engines Vertical Airless Injection Oil Eng. 2 or 4 stroke cycle 2 Single or double acting S.A.

Maximum pressure in cylinders 78.2 lbs ✓

Mean Indicated Pressure 96.4 lbs ✓

Diameter of cylinders 250 mm or 9 7/8" ✓

Length of stroke 420 mm ✓

No. of cylinders 7 ✓

No. of cranks 7 ✓

Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge 365 mm ✓

Revolutions per minute 300 ✓

Flywheel dia. 1050 mm ✓

Weight 605 lbs ✓

Means of ignition compression ✓

Kind of fuel used Heavy oil ✓

Crank Shaft, { Solid forged as per Rule 155 mm ✓

Semi built dia. of journals as fitted 170 mm ✓

Crank pin dia. 170 mm ✓

Crank Webs Mid. length breadth 226 mm ✓

Thrust Shaft, diameter as per Rule 123 mm ✓

Intermediate Shafts, diameter as fitted 5 3/8" ✓

Screw Shaft, diameter as per Rule 5 3/4" ✓

Is the tube screw shaft fitted with a continuous liner { No ✓

Thickness between bushes as per Rule 6 3/8" ✓

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 ✓

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

ft. Yes If so, state type 4. B. & R. Co. Ltd. ✓

Length of Bearing in Stern Bush next to and supporting propeller 2'0" ✓

Propeller, dia. 6'6" ✓

Pitch 3'1" 43.3" No. of blades 4 ✓

Material M.P. whether Moveable No ✓

Total Developed Surface 18.38 sq. feet ✓

Method of reversing Engines Air direct ✓

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

Means of lubrication Forced ✓

Thickness of cylinder liners 19.5 mm ✓

Are the cylinders fitted with safety valves yes ✓

Are the exhaust pipes and silencers water cooled or lagged with

conducting material Lagged ✓

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

Cooling Water Pumps, No. 1 M.E. 130 x 60 mm. 1 Aux. 50 ton/hr. ✓

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

Bilge Pumps worked from the Main Engines, No. One Diameter 120 mm Stroke 60 mm Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line { No. and Size 1-120-60 mm. One 50 ton/hr. (D.O.) One pulcometer 50 ton/hr. ✓

How driven M.E. El. Motor El. Motor ✓

the cooling water led to the bilges no ✓

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

arrangements ✓

Lubricating Pumps, No. and size Two 50 ton/hr. as above ✓

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Two 2. 7.15 gal/hr. each ✓

two independent means arranged for circulating water through the Oil Cooler yes ✓

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

pumps, No. and size:—In Machinery Spaces Two 2 1/2" ✓

In Pump Room ✓

Holds, &c. 2-3" ✓

2-2 1/2" ✓

oil bilge 2-2" ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2-2" ✓

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

Are the Bilge Suctions in the Machinery Spaces

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

all Sea Connections fitted direct on the skin of the ship yes, or on robust E.W. all ✓

Are they fitted with Valves or Cocks Both ✓

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

Are the Overboard Discharges above or below the deep water line above ✓

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 ✓

at pipes pass through the bunkers Forward bilge ✓

How are they protected Last thro' conduit as per approved plan. ✓

at pipes pass through the deep tanks none ✓

Have they been tested as per Rule ✓

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 Part of E.R. Is it fitted with a watertight door ✓

worked from ✓

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

n Air Compressors, No. One No. of stages 2 Diameters 70 x 75 mm Stroke 170 mm Driven by M.E. ✓

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 4 1/2" x 1 1/8" Stroke 3 1/4" Driven by Aux oil eng. ✓

Small Auxiliary Air Compressors, No. No. of stages 1 Diameters Stroke Driven by ✓

what provision is made for first Charging the Air Receivers Above Aux oil engine - Hand starting ✓

Averaging Air Pumps, No. One Diameter 650 mm Stroke 170 mm Driven by M.E. ✓

Auxiliary Engines crank shafts, diameter as per Rule approx. 4 3/16" No. 241223 241224 60/24587

Position PS. ER SS. ER SSER AFT. ✓

Are the Auxiliary Engines been constructed under special survey yes ✓

Is a report sent herewith Yes ✓

Rustin Hornby 4 Cy
Not. Culi C 3989
3988Lloyd's Register
Foundation

003154-003161-0164

CATO

AIR RECEIVERS:—Have they been made under survey *yes* ✓ State No. of Report or Certificate *Glasgow No. 70176*

Is each receiver, which can be isolated, fitted with a safety valve as per Rule *yes* ✓

Can the internal surfaces of the receivers be examined and cleaned *yes* ✓ Is a drain fitted at the lowest part of each receiver *yes* ✓

Injection Air Receivers, No. *none* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *by Rules* *✓*

Starting Air Receivers, No. *Two* ✓ Total cubic capacity *30 cu. ft.* ✓ Internal diameter *1'-9"* thickness *13/32"* ✓

Seamless, lap welded or riveted longitudinal joint *riveted* Material *all* Range of tensile strength *5 Rods 28-32 tons* Working pressure *by Rules* *355 lbs.* Actual *355 lbs.*

IS A DONKEY BOILER FITTED? *No* ✓ 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 *20-2-45* Receivers *26-12-44* Separate Fuel Tanks *22-3-43*

Donkey Boilers *✓* General Pumping Arrangements *12-3-45* Pumping Arrangements in Machinery Space *11-4-45*

Oil Fuel Burning Arrangements *16-4-45, 24-7-45*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes* ✓

State the principal additional spare gear supplied *As per attached list.*

It is stated by the Engine Builders that the Torsional Vibration Calculations as required by Notice No. 1803 have been submitted by the shipbuilders & have been approved.

The foregoing is a correct description,

Manufacturer.

Sa Glas. Rpt. No. 70176. 28

Dates of Survey while building { During progress of work in shops-- } 1945 DEC 13 1946 JAN 14, 22, FEB 15, 27 MAR 12, 15, 18 APR 8, 12 MAY 2, 22 JUN 4, 6, 12

{ During erection on board vessel-- }

Total No. of visits *16*

Dates of Examination of principal parts—Cylinders *✓* Covers *✓* Pistons *✓* Rods *✓* Connecting rods *✓*

Crank shaft *See* Flywheel shaft *Gls. Rpt.* Thrust shaft *✓* Intermediate shafts *2-5-46* Tube shaft *70176*

Screw shaft *28-3-46* Propeller *28-3-46* Stern tube *28-3-46* Engine seatings *18-3-46* Engines holding down bolts *2-5-46*

Completion of fitting sea connections *28-3-46* Completion of pumping arrangements *4-6-46* Engines tried under working conditions *99/ See letter*

Crank shaft, Material *See* Identification Mark *✓* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *See* Identification Mark *✓* Intermediate shafts, Material *F-1, STL* Identification Marks *B 473, FW, 23/4/45*

Tube shaft, Material *NONE* Identification Mark *✓* Screw shaft, Material *DE* Identification Mark *✓*

Identification Marks on Air Receivers

Both receivers at aft end of engine room, port side.

Bottom No. 56170 B TEST 555# *Top No. 56171 B TEST 555#*

Receivers 1/8" 45 W.A.L. WP 355# *Receivers 1/8" 45 W.A.L. WP 355#*

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 *✓*

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 *NO* HULL RPT. No.

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

The above machinery installed in CATO by Eadie & Co. Ltd. in accordance with the Secretary's letters, approves plans & the Rules. The workmanship and materials are good. The machinery was tried under working conditions and found satisfactory but no torsionograph readings were taken. It was stated this would probably be done at an early date.

Eligible on completion of the above to be classed, in my opinion, in the Register Book

** LMC 6,46. O.G. OR ENG. 7 CYL. 9 13/16" - 16 9/16" 25C SA MN 118*

A brass plate has been fixed to the main engine, at control station, denoting "Main engine not to be run continuously between 103 - 149"

The amount of Entry Fee *See* Special *See* When applied for, *19*

Donkey Boiler Fee *£* When received, *19*

Travelling Expenses (if any) *£*

Committee's Minute

Assigned *+ LMC 6,46 Oil Eng. O.G.*

W.S. Shields
Engineer Surveyor to Lloyd's Register of Shipping.



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