

REPORT ON OIL ENGINE MACHINERY.

No. 8732

Received at London Office

7 JAN 1946

Survey Report Dec 10 1945 When handed in at Local Office

Port of PHILADELPHIA, PA.

Survey held at Philadelphia

Date, First Survey Sept 14

Last Survey Nov 18 1945

Number of Visits 28

on the ~~Single~~ ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel

"FOZ DO DOURO"

Tons Gross 2323
Net 1984

Glasgow

By whom built C. Connell & Company

Yard No. 859953

When built 1892 - 2

made at Beloit, Wis.

By whom made Fairbanks Morse & Co.

Engine No. 860900

When made 1944

Boilers made at

By whom made

Boiler No.

When made

Horse Power 690 (Each)

Owners Julio Ribeiro Campos

Port belonging to Oporto

Horse Power as per Rule 413

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

For which vessel is intended

General Cargo - Foreign

Engines, &c. Type of Engines Marine Vertical

2 or 4 stroke cycle 2 Single or double acting Single

Pressure in cylinders 860

Diameter of cylinders 14"

Length of stroke 17"

No. of cylinders 6

No. of cranks 6

Rated Pressure 78.4

Bearings, adjacent to the Crank, measured from inner edge to inner edge

16.75" 17 1/2

Is there a bearing between each crank Yes

Revolutions per minute 300

Flywheel dia. 48"

Weight 4612 lbs.

Means of ignition Compression

Kind of fuel used Diesel

(Solid forged

dia. of journals as per Rule 7.75

Crank pin dia. 9"

Crank Webs

Mid. length breadth 12"

Thickness parallel to axis -

(Solid forged

as fitted 9"

Mid. length thickness 4.5625"

Thickness around eyehole -

Shaft, diameter as per Rule

None

Intermediate Shafts, diameter as per Rule

5.52"

Thrust Shaft, diameter at collars as per Rule

5.8

Shaft, diameter as fitted

7"

Screw Shaft, diameter as per Rule

6.08"

as fitted 7"

Is the ~~link~~ screw shaft fitted with a continuous liner

No

Liners, thickness in way of bushes as per Rule

.48

Thickness between bushes as per Rule

9/16"

as fitted same

Is the after end of the liner made watertight in the

Yes

Does the liner 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

Is an approved Oil Gland or other appliance fitted at the after end of the tube

Yes

Is the shaft lapped or protected between the liners

Yes

Is so, state type

-

Length of Bearing in Stern Bush next to and supporting propeller 24-3/4"

Propeller, dia. 81"

Pitch 56"

No. of blades 3

Material Bronze

whether Moveable No

Total Developed Surface 16.5

sq. feet

Direct Mechanical

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

Yes

Means of lubrication

wall 1"

Are the cylinders fitted with safety valves

Yes

Are the exhaust pipes and silencers water cooled or lagged with

lagged

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

up stack

Water Pumps, No. 2 Cent. 234 GPM each

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

Yes

Pumps worked from the Main Engines, No. none

Diameter

Stroke

Can one be overhauled while the other is at work

Yes

No. and Size 1 - 405 GPM

1 - 250 GPM

1 - 150 GPM

Connected to the Main Bilge Line

How driven Motor driven

Motor driven

Ising water led to the bilges

system

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

its

Pumps, No. and size 1 - 150 GPM

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 Rotary 115 GPM

Independent means arranged for circulating water through the Oil Cooler

Yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

In Pump Room

No. and size:—In Machinery Spaces 3 - 2-1/2"

In Pump Room

No. 1 hold 1 - 3"

No. 2 hold 2 - 2-1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 - 4"

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

Yes

Are the Bilge Suctions in the Machinery Spaces

Yes

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

Yes

Are Connections fitted direct on the skin of the ship

Yes

Are they fitted with Valves or Cocks

Yes

Are they 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

below

Are they 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

None

Do they pass through the bunkers

None

How are they protected

None

Do they pass through the deep tanks

None

Have they been tested as per Rule

Yes

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

Yes

Are arrangements 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

t to another

Yes

Is the Shaft Tunnel watertight

-

Is it fitted with a watertight door

None

worked from

-

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

-

Compressors, No. 1 on each engine

No. of stages 1

Diameters 8"

Stroke 6"

Driven by Main Crank Shaft

Air Compressors, No. 1

No. of stages 2

Diameters 5-3/4 x

Stroke 5"

Driven by Diesel engine

Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Is provision made for first Charging the Air Receivers

electric starter from batteries to start Diesel motor

Air Pumps, No. 1

Diameter 32"

Stroke 17"

Driven by Main crank shaft

Engines crank shafts, diameter as per Rule

3"

No.

Position stb. side aft end of engine room

Auxiliary Engines been constructed under special survey

No; under 100 KW

Is a report sent herewith

Yes

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Lloyd's Register

Foundation

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AIR RECEIVERS:—Have they been made under survey Yes State No. of Report or Certificate 745
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. Cubic capacity of each 55 to 65,000 Internal diameter 55 to 65,000 thickness by Rules
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure Actual
Starting Air Receivers, No. 8 Total cubic capacity Internal diameter thickness by Rules
Seamless, lap welded or riveted longitudinal joint butt welded Material O.H. Steel Range of tensile strength 55 to 65,000 lb Working pressure Actual 250
If so, is a report now forwarded?

IS A DONKEY BOILER FITTED?
Is the donkey boiler intended to be used for domestic purposes only Yes Receivers Yes Separate Fuel Tanks Yes
PLANS. Are approved plans forwarded herewith for Shafting Yes (If not, state date of approval) Pumping Arrangements in Machinery Space Yes
Donkey Boilers General Pumping Arrangements Yes
Oil Fuel Burning Arrangements SPARE GEAR.
Has the spare gear required by the Rules been supplied Yes
State the principal additional spare gear supplied See attached report.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- }
During erection on board vessel -- }
Total No. of visits 28
Dates of Examination of principal parts—Cylinders Nov. 10 Covers Nov. 10 Pistons Nov. 10 Rods Nov. 10 Connecting rods Nov. 10
Crank shaft Nov. 12 Flywheel shaft - Thrust shaft - Intermediate shafts - Tube shaft -
Screw shaft 11 Oct. '45 Propeller 11 Oct. 1945 Stern tube 2 Oct. 1945 Engine seatings 14 Sept. Engines holding down bolts 16 Oct.
Completion of fitting sea connections 2 Oct 1945 Completion of pumping arrangements 9 Nov 1945 Engines tried under working conditions 9 Nov
Crank shaft, Material O.H. Steel Identification Mark AB 177 Flywheel shaft, Material O.H. Steel Identification Mark 359
Thrust shaft, Material O.H. Steel Identification Mark 359 Intermediate shafts, Material O.H. Steel Identification Marks 359
Tube shaft, Material O.H. Steel Identification Mark 359 Screw shafts, Material O.H. Steel Identification Mark 359
Identification Marks on Air Receivers Lloyd's Test 425 lb. 745 W.H.R.

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 No If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c.) These engines have not been constructed by Special Survey, they have however been built with the American Bureau of Shipping's highest classification. Copies of the test results are attached. The main engines and auxiliaries have been satisfactorily installed on board the vessel, tried out under full power with satisfactory results.

data & critical speed calculations as supplied by the manufacturerers are attached.
The installation in my opinion is entitled to receive the record of NE 11-45 LMC 11-45 TS 11-45.

The amount of Entry Fee .. \$ 434.00 : When applied for, Nov. 16 1945
Installation .. £ 1172.00 : GW
Late fee 10.00 : When received, Nov. 21 1945
Expenses 14.00 :
Travelling Expenses (if any) £ :
Committee's Minute NEW YORK DEC 27 1945

Assigned NE - 45.
LMC - 11-45
T.S. 11-45.

Engineer Surveyor to Lloyd's Register of Shipping



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