

REPORT ON OIL ENGINE MACHINERY.

No. 16618
20 MAY 1955 6 JAN 1956

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o. in Survey held at Reddish Date, First Survey 19th Jan. 1954 Last Survey 25th April 1955
eg. Book. Single) on the Twin) Screw vessel. Tanker - *Bushyrig Light "Edward Pioneer"* Triple) Quadruple)

lb/suilt at By whom built Richard Dunstan Ltd. Yard No. 1.190 910
Engines made at Reddish By whom made Messrs. Crossley Bros. Ltd. Cont. 15498 113168
onkey Boilers made at By whom made Boiler No. When made 1955

Yesake Horse Power 250 Owners Boston Deep Sea Fishing and Ice Co. Port belonging to
N. Power as per Rule 50 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ade for which vessel is intended

of L ENGINES, &c. Type of Engines One ERL 5 heavy oil 2 or 4 stroke cycle 2 Single or double acting Single
aximum pressure in cylinders 1250 psi Diameter of cylinders 7" Length of stroke 9" No. of cylinders 5 No. of cranks 5
ean Indicated Pressure 92 psi Ahead Firing Order in Cylinders 1.5.2.3.4 Span of bearings, adjacent to the crank, measured
om inner edge to inner edge 8 7/8" Is there a bearing between each crank Yes Revolutions per minute 750
lywheel dia. 27" Weight 1136 Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 1136 Means of ignition Comp. Kind of fuel used Diesel
rank (Solid forged dia. of journals as per Rule. Crank pin dia. 4 3/4 Crank webs Mid. length breadth 7 1/2 Thickness parallel to axis
haft, Semi built as fitted 1 1/2 Mid. length thickness 2.5/16 shrunk Thickness around eyehole
All built

lywheel Shaft, diameter as per Rule. Intermediate Shafts, diameter as per Rule. Thrust Shaft, diameter at collars as fitted
as fitted. as fitted. as per Rule.

ube Shaft, diameter as per Rule. Screw Shaft, diameter as per Rule. Is the (tube) shaft fitted with a continuous liner (No
as fitted. as fitted. as fitted. screw)

ronze Liners, thickness in way of bushes as per Rule. Thickness between bushes as per Rule. Is the after end of the liner made watertight in the
as fitted. as fitted. as fitted. propeller boss.

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

f 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-
orrosive. If 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

d of tube shaft. If so, state type. Length of bearing in Stern Bush next to and supporting propeller.

- ropeller, dia. Pitch No. of blades Material whether moveable Total developed surface sq. feet

55 oment of inertia of propeller (lbs. in² or Kg. cm.²) Kind of damper, if fitted.

/55 ethod of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched. Means of
abrication Forced Thickness of cylinder liners 11/16" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled
Water Cooled.

lagged with non-conducting material. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned
back to the engine. 1 - 1800 C.P.H.

27/ Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

5. ilge Pumps worked from the Main Engines, No. 1 Diameter 2 1/2 Stroke 2 1/4 Can one be overhauled while the other is at work

umps connected to the Main Bilge Line (No. and size. How driven.

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

allast Pumps, No. and size. Power Driven Lubricating Oil Pumps, including spare pump, No. and size. 1 - 960 GPH
1 - 1140 GPH.

ore two independent means arranged for circulating water through the Oil Cooler. Suctions, connected to both main bilge pumps and auxiliary
lge pumps, No. and size:—In machinery spaces. In pump room.

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. Are the bilge suction in the machinery spaces led from easily
cessible 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 they fixed

fficiently high on the ship's side to be seen without lifting the platform plates. Are the overboard discharges above or below the deep water line.

re they each fitted with a discharge valve always accessible on the plating of the vessel. Are the blow off cocks fitted with a spigot and brass covering plate.

on hat pipes pass through the bunkers. How are they protected.

hat pipes pass through the deep tanks. Have they been tested as per Rule.

re all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times.

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
aces, or from one compartment to another. Is the shaft tunnel watertight. Is it fitted with a watertight door. worked from.

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

ain Air Compressors, No. 1 No. of stages 1 diameters 3 1/2 stroke 2 1/4 driven by Main Engine

uxiliary Air Compressors, No. No. of stages diameters stroke driven by

all Auxiliary Air Compressors, No. No. of stages diameters stroke driven by

at provision is made for first charging the air receivers.

avenging Air Pumps, No. 1 diameter 13 1/4 stroke 6 1/4 driven by Main Engine.

uxiliary Engines crank shafts, diameter as per Rule. No. Position.

ve the auxiliary engines been constructed under special survey. Is a report sent herewith.

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AIR RECEIVERS:—Have they been made under survey ☒ State No. of report or certificate 9-20863, x-20309

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

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

Injection Air Receivers, No. Cubic capacity of each Internal diameter thickness

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

Starting Air Receivers, No. Total cubic capacity Internal diameter thickness Actual

Seamless, welded or riveted longitudinal joint ☒ Material Range of tensile strength Working pressure by Rules App

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 3.3.55 Receivers Separate fuel tanks

Donkey boilers General pumping arrangements Pumping arrangements in machinery space

Oil fuel burning arrangements

Have Torsional Vibration characteristics been approved Yes Date of approval 22.1.55

SPARE GEAR.

Has the spare gear required by the Rules been supplied As per Rule requirements.

State the principal additional spare gear supplied

The foregoing is a correct description, and the particulars of the engine, as supplied, are as approved for Torsional Vibration Character

Dates of Survey while building During progress of work in shops - - 1951 Jan. 19. Apr. 13. Aug. 18. Nov. 9. 15. 18. Dec. 21. 1955 Jan. 14. Mch. 11. April 22. 25.

Total No. of visits

Dates of examination of principal parts—Cylinders 9.11.54 Covers 21.12.54 Pistons Rods Connecting rods 13.4.54

Crank shaft 19.1.54 Flywheel shaft Thrust shaft Intermediate shafts Tube shaft

Screw shaft Propeller Stern tube Engine seatings Engine holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions

Crank shaft, material O.H. Steel Identification mark LEM. 2790. LR. 3678 L.V.H. 19.1.54

Thrust shaft, material Identification mark Intermediate shafts, material Identification marks

Tube shaft, material Identification mark Screw shaft, material Identification mark

Identification marks on air receivers None

Welded receivers, state Makers' Name

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

Description of fire extinguishing apparatus fitted

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, Speed restrictions, &c. This heavy oil propulsion engine has been built under special survey of tested materials and in accordance with the Secretary's letters, approved plans and Rule requirements. The material is sound and free from defects. The workmanship is good. The engine, direct coupled to

dynamometer, was successfully tested at the Engine Builder's works under the following conditions of loading - 1 hour engine rating, 1 hour 10% overload, 1/2 hour astern, slow running, Governing tests. The engine was also tested under load conditions coupled to a Burne silent 2:1 reduction gear. The torsional vibration characteristics of the shafts and installation have been examined in conjunction with the Engine Builder's calculations and will be provisionally approved for an engine speed of 750 r.p.m. and the corresponding propeller speed of 375 r.p.m. In my opinion this engine is suitable for installation in a vessel to be classed by the Society, when the particulars of the complete propulsion installation, as fitted, are verified to be as approved for torsional vibration characteristics. Crankcase explosion devices have not been fitted.

Attached hereto. Shaft Certs. F.1109, F.919

The above machinery has been efficiently installed in the above vessel and tried under full power working conditions satisfactorily. No Recommendations have been made. F.S. Rep No 61827. King James

The amount of Entry Fee ... £ 19 : 0 : 0

Special ... £ : : When applied for 19-5-1955

Donkey Boiler Fee... £ : : When received 19

Travelling Expenses (if any) £ 1 : 5 : 0

Committee's Minute TUESDAY 20 MAR 1956

Assigned See Rpt. 46.



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