

REPORT ON OIL ENGINE MACHINERY.

No. 77946
5- DEC 1951

Received at London Office

Date of writing Report 16th Nov. 1951 When handed in at Local Office 28.11.1951 Port of Glasgow
 in Survey held at Glasgow Date, First Survey 27th Aug. 1951 Last Survey 16th Nov. 1951
 g. Book. Number of Visits 16
 Single on the Port Screw vessel "MARGARET" Tons Gross Net
 Triple
 Quadruple
 Built at Hull By whom built Messrs. Buchanan & Sons Ltd Yard No. 374 When built 1951
 Engines made at Glasgow By whom made Harrold British Polar Engines Ltd Engine No. E852 When made 1951
 Monkey Boilers made at By whom made Boiler No. When made
 Brake Horse Power 450 Owners Charrington, Landace, Rocket & Co Ltd Port belonging to London
 N. Power as per Rule 114 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Made for which vessel is intended Open sea service
 L ENGINES, &c. — Type of Engines Heavy Oil Engine H461 Type 2 or 4 stroke cycle 2 Single or double acting Single
 Maximum pressure in cylinders 180 lbs/sq. in Diameter of cylinders 250 mm Length of stroke 420 mm No. of cylinders 6 No. of cranks 6
 Mean Indicated Pressure 96 lbs/sq. in Ahead Firing Order in Cylinders 6-2-4-3-5-1 Span of bearings, adjacent to the crank, measured
 from inner edge to inner edge 366 mm Is there a bearing between each crank YES Revolutions per minute 300
 Flywheel dia. 900 mm Weight 1178 lb Moment of inertia of flywheel (lbs. in² or Kg. cm²) 600 Means of ignition CONR Kind of fuel used S.H.O.
 Crank shaft, (Solid forged as per Rule app dia. of journals 170 mm Crank pin dia. 170 mm Crank webs Mid. length breadth 226 mm Thickness parallel to axis
 (Semi built as fitted 170 mm Mid. length thickness 95 mm shrunk Thickness around eye hole
 (All built as fitted 170 mm Thrust Shaft, diameter at collars 190 mm
 Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted
 Tube 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
 Bronze 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
 propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner
 If 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 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
 end of tube shaft If so, state type Length of bearing in Stern Bush next to and supporting propeller
 Propeller, dia. Pitch No. of blades Material whether moveable Total developed surface sq. feet
 Moment of inertia of propeller (lbs. in² or Kg. cm²) Kind of damper, if fitted
 Method of reversing Engines 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 non-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. ONE Is the sea suction provided with an efficient strainer which can be cleared within the vessel
 Bilge Pumps worked from the Main Engines, No. ONE Diameter 110 mm Stroke 60 mm Can one be overhauled while the other is at work
 Pumps connected to the Main Bilge Line (No. and size How driven
 Is 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
 arrangements
 Ballast Pumps, No. and size Power Driven Lubricating Oil Pumps, including spare pump, No. and size
 Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both main bilge pumps and auxiliary
 bilge pumps, No. and size:—In machinery spaces In pump room
 In holds, &c.
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size
 Are 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
 accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges
 Are all Sea Connections fitted direct on the skin of the Ship Are they fitted with valves or cocks Are they fixed
 sufficiently 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
 Are 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
 What pipes pass through the bunkers How are they protected
 What pipes pass through the deep tanks Have they been tested as per Rule
 Are all pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times
 Is 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 compartment to another Is the shaft tunnel watertight Is it fitted with a watertight door worked from
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork
 Main Air Compressors, No. ONE No. of stages TWO diameters 140, 55 mm stroke 240 mm driven by MAIN ENG
 Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
 Small Auxiliary Air Compressors, No. No. of stages diameters stroke driven by
 What provision is made for first charging the air receivers
 Scavenging Air Pumps, No. ONE diameter 120 mm stroke 240 mm driven by MAIN ENG
 Auxiliary Engines crank shafts, diameter as per Rule No. Position
 Have the auxiliary engines been constructed under special survey Is a report sent herewith

AIR RECEIVERS:—Have they been made under survey... YES State No. of report or certificate C87776. C87777
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... Internal diameter... thickness...
Seamless, welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure...
Starting Air Receivers, No. TWO Total cubic capacity 30 CUB. FT. Internal diameter 22 1/4" thickness 7/16"
Seamless, welded or riveted longitudinal joint RIVETED Material M.S. Range of tensile strength 28,000 LBS. Working pressure... 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... YES 12-6-51 Receivers... 12-6-51 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 4 July 1951.

SPARE GEAR.
Has the spare gear required by the Rules been supplied... YES.
State the principal additional spare gear supplied...
The foregoing is a correct description.

At 2nd. for British. Pole Engine. Manufacturer.
Dates of Survey while building
During progress of work in shops - - Aug. 27th Sept. 3rd to 22nd Oct 10th to 24th Nov. 7th to 16th
During erection on board vessel - -
Total No. of visits ENG 10.
Dates of examination of principal parts—Cylinders 27-8-51 Covers 10-9-51 Pistons 17-9-51 Rods ✓ Connecting rods 1-4-4
Crank shaft 8-5-51 SCAV Flywheel shaft 29-12-49 Thrust shaft 2-11-51 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 7562 GA SCAV Flywheel shaft, material O.H. STEEL Identification mark 20092/4783
Thrust shaft, material S.H. INGOT STEEL Identification mark 5398 G.H. Intermediate shafts, material... Identification marks...
Tube shaft, material... Identification mark... Screw shaft, material... Identification mark...
Identification marks on air receivers 1049 29-8-51 TMS. 1050 29-8-51 TMS.

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, &c.) This engine has been built under Special Survey in accordance with the Secretary's letter and approved plans. The materials & workmanship are good and on completion the engine was tried on the test bed at the makers works with satisfactory results.
The torsional vibration characteristics have been approved for a service speed of 300 R.P.M. provided a notice board be fitted at the control station stating that the engine is not to be operated continuously between 180 and 212 R.P.M. and the engine tachometer be worked accordingly.
It has now been dispatched to Messrs Buchanan Son Ltd., Hull, to be fitted to their Jan N° 1374 and is eligible in my opinion for the record of 1 H.M.C. (with date) when efficiently installed on board.

The amount of Entry Fee 3/6 G.L.S. £ 30 : 8 ✓ 4 DEC 1951
Special ... 1/3 H.M.C. £ 15 : 4 ✓ When applied for... 19
Donkey Boiler Fee... £ : : When received... 19
Travelling Expenses (if any) £ : :
Committee's Minute GLASGOW 4 DEC 1951
Assigned... Deferred for completion
A. G. Smith.
Engineer Surveyor to Lloyd's Register of Shipping
FRI. 28 MAR 1952
See F.E. Moly. 14th Feb 58/89
Foundation