

REPORT ON OIL ENGINE MACHINERY.

No. 1847

Date of writing Report 12th May 1920 When handed in at Local Office 18th May 1920 Port of Barrow-in-Furness
No. in Survey held at Barrow-in-Furness Date, First Survey 26th Feb 1919 Last Survey 11th May 1920
Reg. Book. 33/30 on the Single } Screw vessels "NARRAGANSETT"
Twin }
Triple }
Master W. Gray - 04. Built at Barrow-in-Furness By whom built Vickers Ltd Yard No. 570 When built 1920
Engines made at Barrow-in-Furness By whom made Vickers Ltd Engine No. 570 When made 1920
Aux^r Boilers made at Barrow-in-Furness By whom made Vickers Ltd Boiler No. 570 When made 1920
Brake Horse Power 2500 Owners Anglo-American Oil Co Ltd Port belonging to Barrow
Nom. Horse Power as per Rule 562 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

OIL ENGINES, &c. Type of Engines Twin Screw Diesel 2 or 4 stroke cycle 4 Single or double acting Single
Maximum pressure in cylinders 500 lbs per sq. in. No. of cylinders 12 No. of cranks 12 Diameter of cylinders 24 1/2"
Length of stroke 39" Revolutions per minute 118 Means of ignition Diesel type of Engine Kind of fuel used 9 Spec. Gravity
Is there a bearing between each crank Yes Span of bearings (Page 92, Section 2, par. 7 of Rules) 35 1/2"
Distance between centres of main bearings 4'-3 1/2" Is a flywheel fitted Yes on crank shaft coupling Diameter of crank shaft journals as per Rule 14.85
as fitted 15 1/2"
Diameter of crank pins 15 1/2" Breadth of crank webs as per Rule 19.75" as fitted 21" Thickness of ditto as per Rule 8.3"
as fitted 9.55"
Diameter of flywheel shaft as per Rule 14" as fitted 14 7/8" Diameter of tunnel shaft as per Rule 12.47" as fitted 14" Diameter of thrust shaft as per Rule 13.1" as fitted 14"
Diameter of screw shaft as per Rule 14" as fitted 14 7/8" Is the screw shaft fitted with a continuous liner the whole length of the stern tube No
Is the after end of the liner made watertight in the propeller boss Yes If the liner is in more than one length are the joints burned
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 Yes If without liners, is the shaft arranged to run in oil Yes
Type of outer gland fitted to stern tube oil lubricated shafts Length of stern bush 5'-0 3/4" Diameter of propeller 12'-3"
Pitch of propeller 11'-3" No. of blades 3 state whether moveable No Total surface 44 square feet
Method of reversing on screw motor Is a governor or other arrangement fitted to prevent racing of the engine when declutched
Are the cylinders fitted with safety valves Yes Means of lubrication Forced Are the exhaust pipes and silencers water cooled or lagged with
non-conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine
Exhaust led up funnel No. of cooling water pumps 2 Is the sea suction provided with an efficient strainer which can be cleared
within the vessel Yes No. of bilge pumps fitted to the main engines One each Engine Diameter of ditto 6" Stroke 12" Double acting
Can one be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge lines Two How driven Steam
Sizes of pumps Ballast 10" x 8" x 12" duplex No. and sizes of suctions connected to both main bilge pumps and auxiliary bilge pumps:—In engine room 2-3 1/2", 2-6"
and in holds, etc. 2-3 1/2" in forehold 1-6" in fore hold No. of ballast pumps One in fore hold How driven Steam Sizes of pumps 7" x 8" x 12" duplex
Is the ballast pump fitted with a direct suction from the engine room bilges Yes State size 6" dia Is a separate auxiliary pump suction fitted in
Engine Room and size Yes - 6" Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine Room always accessible Yes
Are the sluices on Engine Room bulkheads always accessible Are all connections with the sea direct on the skin of the ship Yes
Are they valves or cocks Both Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates Yes
Are the discharge pipes above or below the deep water line Above Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes
Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times yes Are the bilge suction pipes, cocks and valves arranged so as to prevent any
communication between the sea and the bilges Yes Is the screw shaft tunnel watertight None 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
No. of main air compressors One No. of stages 3 Diameters 2 1/8"-10 1/2"-13 1/2" Stroke 6 1/2" Driven by Steam
No. of auxiliary air compressors Nil No. of stages 1 Diameters 1 1/2"-2 1/2" Stroke 6" Driven by
No. of small auxiliary air compressors Nil No. of stages 1 Diameters 1 1/2"-2 1/2" Stroke 6" Driven by
No. of scavenging air pumps Nil Diameter 1 1/2" Stroke 6" Driven by
Diameter of auxiliary Diesel Engine crank shafts as per Rule 14" as fitted 14 7/8" Are the air compressors and their coolers made so as to be easily of access Yes

IR RECEIVERS:—No. of high pressure air receivers Ten Internal diameter 30" Cubic capacity of each 50 cub. ft.
material Steel Seamless, lap welded or riveted longitudinal joint Riveted joint Range of tensile strength 28/32 tons
thickness 7/8" working pressure by Rules 680 lbs No. of starting air receivers Same as above Internal diameter
Total cubic capacity 500 cub. ft. Material Seamless, lap welded or riveted longitudinal joint
Range of tensile strength thickness Working pressure by rules Is each receiver, which can be isolated,
fitted with a safety valve as per Rule No. Air com. Is the internal surfaces of the receivers be examined yes What means are provided for cleaning their
inner surfaces Access through 16" x 12" manhole Is there a drain arrangement fitted at the lowest part of each receiver Yes

WED. 15 APR 1925

TUES. 22 JUL 1924

THURS. 14 OCT 1924

TUE. 45 DEC. 1922

FRI. 27 FEB 1925

TUE. 20 NOV. 1923

FRI. 9 JAN 1925

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS	1-9-19 to 3-12-19 (12 visits)	500 lbs	1000 lbs.	Tested to 1000 lbs J.H.	
COVERS	1-10-19 to 8-5-20 (19 ")	15 lbs	30 lbs.	Tested to 30 lbs J.H.	also tested face of cover to 1000 lbs.
JACKETS	27-8-19 to 3-11-19 (12 ")	15 "	30 "	" "	
PISTON WATER PASSAGES	13-9-19 to 28-10-19 (9 ")	20 "	100 "	Tested to 100 lbs J.H.	
MAIN COMPRESSORS—1st STAGE	Made at Peterboro'				
2nd "					
3rd "					
AIR RECEIVERS—STARTING	3-9-19 to 24-10-19 (10 visits)	600 lbs	800 lbs.	LLOYD'S TEST 800 lbs. W.P. 600 lbs J.H.	
INJECTION	✓			Tested to 1000 lbs J.H.	
AIR PIPES	27-11-19 to 18-4-20 (9 visits)	600 lbs.	1000 lbs.	Tested to 6000 lbs J.H.	
FUEL PIPES	29-10-19 to 20-4-20 (6 ")	4000 lbs	6000 lbs.	Tested to 6000 lbs J.H.	
FUEL PUMPS	25-8-19, 26-8-19.	4000 lbs	6000 lbs.	Tested to 6000 lbs J.H.	
SILENCER	7-11-19, 11-11-19	✓	✓	✓	
WATER JACKET	No water jacket	✓	✓	✓	
SEPARATE FUEL TANKS	10-4-20.	Head of oil	10 lbs.	✓	Ready use tank for Petter Engine.

PLANS. Are approved plans forwarded herewith for shafting

Yes

Receivers

Yes

Separate Tanks ✓

SPARE GEAR & Cylinders covers complete with all valves, valve seats, springs etc fitted. 4 cyl. liners; 12 Inlet valves, 12 exhaust valves, 6 spray valves complete, 12 extra spray valve spindles; 4 extra spray valve nozzles; 1 installation of springs for Inlet Exhaust, spray, air starting & relief valves; 4 pistons complete & 30 extra piston rings; 1 pair crank shaft bearings with studs & nuts; 1 pair crank pin bearings with bolts & nuts; 1 double pair of crosshead bearings with bolts & nuts; 2 each inlet & exhaust ahead cams; 1 each inlet & exhaust astern cams; 1 installation of fuel cam for pistons & 2 air starting cams. One installation of fuel oil pump plungers, valves, seats, guides & springs; 1 installation of water circulating piston cooling bearing oil bilge & sanitary pump valves; one installation of piston rings for ditto; 2 sets of piston cooling pipe; 1 set of crank shaft coupling bolts; 1 set of intermediate shaft coupling bolts; 1 set of life cover studs & nuts; 1 set of fuel & air delivery piping, assorted bolts & nuts; 1 pair of main bearings; 1 connecting rod complete; 1 complete set of piston rings & one each of inlet & delivery valve seats & springs for each stage, piston rod, piston valves & rod, eccentric rod & set of complete.

The foregoing is a correct description,

FOR VICKERS LIMITED.

Vickers Petter Generator Engine: 1 set main bearing bushes; bottom end bearing bolts; 1 set piston rings; 1 fuel pump complete.

Manufacturer.

Also for main engines - grometing material for cylinders covers, armoured rubber hose for exhaust valves, & 1 installation of ball races for vertical shaft drive.

Dates of Survey while building	Feb 1919, 26, 27, Mar 10, 12, 15, 20, 22, 25, 27, 28, 31, Apr 3, 4, 7, 11, 14, 15, 24, 25, 30, May 2, 5, 7, 15, 17, 26, 27, 29, June 3, 5, 6, 10, 11, 15, 18, 19, 24, 30, July 1, 3, 11, 12, 16, 18, 21, 25, Aug 16, 19, 19, 20, 22, 25, 26, 27, 28, 29, Sept. 1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 15, 16, 17, 19, 20, 22, 24, 25, 26, 29, 30, Oct. 1, 2, 3, 6, 7, 8, 9, 10, 14, 15, 16, 17, 18, 20, 22, 23, 24, 27, 28, 29, 30, 31, Nov. 3, 4, 5, 7, 8, 10, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 24, 25, 26, 27, Dec. 1, 3, 4, 6, 8, 11, 15, 16, 17, 18, 19, 22, Jan 1920, 5, 7, 8, 12, 13, 19, 22, 23, 26, 28, 30, Feb. 2, 3, 5, 6, 10, 13, 16, 20, 23, 25, 26, 28, Mar. 2, 4, 5, 9, 10, 12, 15, 16, 19, 25, 26, 29, 30, 31, Apr. 7, 10, 12, 13, 14, 16, 17, 18, 20, 21, 22, 23, 24, 26, 27, 28, 29, May. 3, 4, 5, 6, 7, 11.
During progress of work in shops -	
During erection on board vessel -	
Total No. of visits	194.

Dates of Examination of principal parts—Cylinders 1-9-19 to 3-12-19												Covers	27-8-19 to 8-5-20	Pistons	13-9-19 to 28-10-19	Rods	27/8/19 to 1/10/19	Connecting rods	22/5/19 to 1/10/19.																			
Crank shaft												24/9/19 (3)	Thrust shaft	15/11/19	Tunnel shafts	15/10/19	Screw shafts	10-11-19 (3)	Propellers	24/10/19 (3)	Stern tube	14/11/19	Engine seatings	24-11-19														
Engines holding down bolts												7-4-20	Completion of pumping arrangements												21-4-20	Engines tried under working conditions												22-4-20, 5-5-20, 11-5-20

Completion of fitting sea connections		24-11-19	Stern tube	20-11-19.	Screw shaft and propellers	25-11-19.	
Material of crank shaft	Steel ✓	Identification Mark on Do.	LLOYD'S N° 144 J.H.	Material of thrust shaft	Steel ✓	Identification Mark on Do.	LLOYD'S N° 144 J.H.
Material of tunnel shafts	Steel ✓	Identification Marks on Do.	LLOYD'S N° 144 J.H.	Material of screw shafts	Steel ✓	Identification Marks on Do.	LLOYD'S N° 144 J.H.

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

Yes

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, etc.)

The Machinery of this Vessel has been constructed under special survey, & in accordance with the Rules & approved plans. The materials have been tested & found sound, & the workmanship is good. The cylinder liners & jackets, the coles jackets & piston water passages, the air receivers & air pipes, the fuel pump pipes & connections have been tested as required & found tight & sound.

The Machinery has been efficiently fitted on board, & on completion was tried under full power in dock & at sea with satisfactory results. Manoeuvring trials were carried out & twenty four starts were obtained from the air receivers without recharging.

The Machinery of this vessel is, in my opinion, eligible to be classed + L.M.C. 5-20 in the Register Book.

The amount of Entry Fee ... £ 3 : 0 : 0 When applied for,

Special ... £ 48 : 2 : 0 15th May 1920.

Boiler Fee ... £ 4 : 18 : 0 When received,

Travelling Expenses (if any) £ 6 : 19 : 8 14/6/20

Special Attendance £ 2 : 2 : 0 14/6/20

Committee's Minute

Assigned

+ L.M.C. 5. 50

Fitted for oil fuel 5.20

7.2 above 150° F.

John Houston

Engineer Surveyor to Lloyd's Register of Shipping.

TUE. AUG. 15 1920 FRI. OCT. 15 1920 FRI. FEB. 1921

Lloyd's Register Foundation