

# REPORT ON OIL ENGINE MACHINERY.

No. 110096

Received at London Office

15 JAN 1953  
6 MAY 1953

4b.

of writing Report... When handed in at Local Office 13 JAN 1953 19 Port of **NEWCASTLE-ON-TYNE**

Survey held at **NEWCASTLE ON TYNE** Date, First Survey **4TH MAY 1951** Last Survey **6TH JANUARY 1953**

Book. Single on the Twin Triple Quadruple Screw vessel **M.V. "SILVERBROOK"** Tons { Gross... Net... }

at **SOUTH BANK MIDDLESBROUGH** By whom built **SMITH'S DOCK CO. LD** Yard No. **1225** When built

Engines made at **NEWCASTLE ON TYNE** By whom made **R. W. HAWTHORN LESLIE & CO. LD** Engine No. **4100** When made **1952**

Boilers made at  By whom made  Boiler No.  When made

Horse Power **5,900** Owners  Port belonging to

N. Power as per Rule **1,180** Is Refrigerating Machinery fitted for cargo purposes  Is Electric Light fitted

Trade for which vessel is intended **FOREIGN.**

**ENGINES, &c.** — Type of Engines **HAWTHORN - DOXFORD OPPOSED PISTON** 2 or 4 stroke cycle **2** Single or double acting **SINGLE**

Maximum pressure in cylinders **640 LBS/IN<sup>2</sup>** Diameter of cylinders **670 m/m** Length of stroke **2320 m/m** No. of cylinders **5** No. of cranks **5**

Indicated Pressure **90 LBS/IN<sup>2</sup>** Ahead Firing Order in Cylinders **1, 3, 5, 4, 2** Span of bearings, adjacent to the crank, measured in inner edge to inner edge **2020 m/m** Is there a bearing between each crank **YES** Revolutions per minute **115 SERVICE**

Weight **1.0 TONS** Moment of inertia of flywheel **0.497** Means of ignition **COMP.** Kind of fuel used

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Wheel Shaft, diameter as per Rule... Intermediate Shafts, diameter as per Rule... Thrust Shaft, diameter at collars as fitted... **520 m/m**

Propeller Shaft, diameter as per Rule... Screw Shaft, diameter as fitted... **17 1/2"** Is the shaft fitted with a continuous liner  **YES**

Bronze Liners, thickness in way of bushes as per Rule... Thickness between bushes as fitted... **13"** Is the after end of the liner made watertight in the propeller boss  **YES**

Propeller, dia. **18'-0"** Pitch **11'-7"** No. of blades **4** Material **M. BRONZE** whether moveable  **NO** Total developed surface **120** sq. feet

Moment of inertia of propeller **7.34** Kind of damper, if fitted **DOXFORD - BIBBY DETUNER**

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 **25 m/m** Are the cylinders fitted with safety valves  **YES**

Are the exhaust pipes and silencers water cooled  **YES** 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 to the engine  **ME. DRIVEN**

Cooling Water Pumps, No. **ME. DRIVEN** the sea suction provided with an efficient strainer which can be cleared within the vessel  **YES**

Bilge Pumps worked from the Main Engines, No. **NONE** Diameter... Stroke... 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

Power Driven Lubricating Oil Pumps, including spare pump, No. and size **TWO - ME. DRIVEN 30 TONS/HR EACH.**

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

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 platform of the vessel... Are the blow off cocks fitted with a spigot and brass covering plate...

Are pipes pass through the bunks... How are they protected... 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 shaft tunnel watertight... Is it fitted with a watertight door... worked from...

Are the means provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork... in Air Compressors, No... No. of stages... diameters... stroke... driven by...

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

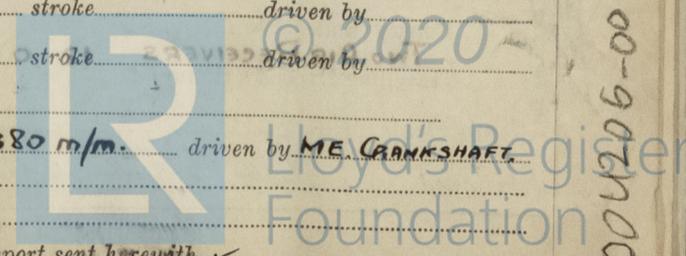
Is provision made for first charging the air receivers... Ventilating Air Pumps, No. **ONE** diameter **1780 m/m** stroke **1380 m/m** driven by **ME. CRANK SHAFT**

Are the auxiliary engines crank shafts, diameter as per Rule... as fitted... Position... Have the auxiliary engines been constructed under special survey  Is a report sent herewith

PLEASE SEE MIDDLESBROUGH REPORT

27/1/53

000206-004212-0096



**AIR RECEIVERS:**—Have they been made under survey... **YES.** State No. of report or certificate...  
 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, welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure...  
**Starting Air Receivers, No.**... **TWO** Total cubic capacity... **300 CU. FT.** Internal diameter... **4'-1 3/8"** thickness... **5/16"**  
 Seamless, welded or riveted longitudinal joint... **FUSION WELDED** Material... **O.H. STEEL** Range of tensile strength... **28-32** Working pressure... **600**  
 ENDS 26-30.

**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.** Receivers... **YES.** 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... **26/10/51**

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied... **YES.**  
 State the principal additional spare gear supplied... **SPARE PROPELLER SHAFT:- F.10177 LRN 22557 HAI. 12-9-52 T.M.**

**NOTE:- DOXFORD-BIBBY DETUNER FITTED:-** FIXED MEMBER WK<sup>2</sup> = 4.5 FT<sup>2</sup> TONS  
 FLOATING MEMBER WK<sup>2</sup> = 11.0 TONS FT<sup>2</sup>.

The foregoing is a correct description, and the particulars of the installation as fitted, are as approved for the Torsional Vibration Characteristics.  
**R. & W. HAWTHORN, LESLIE & CO. LIMITED** Manufacturer.

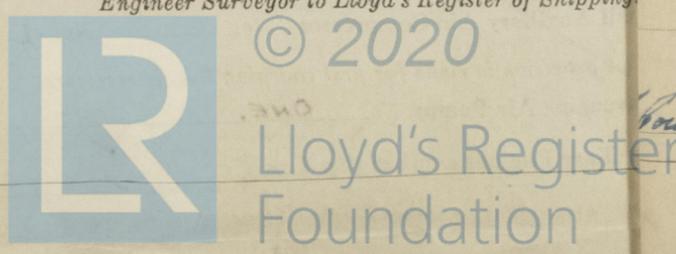
Dates of Survey while building...  
 During progress of work in shops... (1951) MAY 1, (1952) FEB 7, 11, 15, MAR 1, 10, 17, 24, MAY 20, JUNE 4, 6, 13, 17, 19, JULY 1, 2, 9, 11, 15, AUG 5, 7, 11, 13, 15, 19, 21, 29, SEPT 1, 5, 12, 17, 24, 30, OCT 6, 10, 20, 24, 30, NOV 3, DEC 5, 17 (1953) JAN 6.  
 During erection on board vessel...  
 Total No. of visits... **13**

Dates of examination of principal parts—Cylinder... LINERS... Covers... Pistons... 29-5-52 etc. Rods... 29-5-52 etc. Connecting rods... 15-7-52 etc.  
 Crank shaft... 17-7-52 Flywheel shaft... Thrust shaft... ON CRANKSHAFT. Intermediate shafts... 13-8-52 STUB shaft... 6-1-53  
 Screw shaft... 12-9-52 Propeller... 12-9-52 Stern tube... 6-1-53 Engine seatings... Engine holding down bolts...  
 Completion of fitting sea connections... Completion of pumping arrangements... Engines tried under working conditions... 17-9-52  
 Crank shaft, material... F.O.H.I.S. Identification mark... S. 6763. Flywheel shaft, material... Identification mark...  
 STUB shaft, material... F.O.H.I.S. Identification mark... F.10175 LR 22557 Intermediate shafts, material... F.O.H.I.S. Identification marks... 13-8-52  
 Tube shaft, material... Identification mark... 6-1-53 T.M. Screw shaft, material... F.O.H.I.S. Identification mark... 12-9-52 T.M.  
 Identification marks on air receivers... LLOYDS TEST. T.P. 950 LBS. W.P. 600 LBS. T.M.

Welded receivers, state Makers' Name... **R. & W. HAWTHORN, LESLIE & CO. LD.**  
 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.)  
 The engine referred to herein has been constructed under Special Survey in accordance with the Society's Rules, Approved plans and Secretary's letters.  
 The materials and workmanship are good.  
 The engine has been despatched to Messrs Smith's Dock Coy. Ltd. Middlesbrough for installation in their Yard No 1225.

The amount of Entry Fee ... £228 : 0  
 Special E.W. (77 TONS) £ 20 : 10  
 Donkey Boiler Fee... £ :  
**TWO AIR RECEIVERS** £ 12 : 0  
 Travelling Expenses (if any) £ :  
 When applied for... **14 JAN 1953**  
 When received... 19  
**T. J. Morris**  
 Engineer Surveyor to Lloyd's Register of Shipping.  
 Committee's Minute...  
 Assigned... **Su F.E. mchly. rpt.**  
 FRI. 22 MAY 1953



NEWARTI L-ON-TYNE  
 (The Surveyor is requested not to write on or below the space for Committee's Minute.)