

# REPORT ON OIL ENGINE MACHINERY.

No 36141

DEC - 1 1953

Received at London Office

22 DEC 1953

Writing Report

When handed in at Local Office

19

Port of Sunderland.

Survey held at

Sunderland.

Date, First Survey 27 October 1952

Last Survey 22 November 1953

Number of Visits 94

on the Single Screw vessel

M/V "SHEAF ROYAL"

Tons Gross 2305  
Net 4348

at Sunderland.

By whom built

J.L. Thompson & Sons Ltd

Yard No. 677 When built 1953.

made at Sunderland.

By whom made

W. Daxford & Sons Ltd

Engine No. 285 When made 1953.

Boilers made at Sunderland.

By whom made

Geo Clark (1938) Ltd

Boiler No. 1502 When made 1953.

Horse Power 4450.

Owners

Sheaf Steam Shipping Co Ltd

Port belonging to

Horse Power as per Rule NEW. MN 1550

Is Refrigerating Machinery fitted for cargo purposes

No. Is Electric Light fitted Yes.

for which vessel is intended Tanker.

ENGINES, &c. Type of Engines Daxford opposed piston 2 or 4 stroke cycle 2. Single or double acting Single

Mean pressure in cylinders 640 lbd Diameter of cylinders 450 3/4 Length of stroke U. 1050 No. of cylinders Six No. of cranks 6-three throw.

Indicated Pressure 84 lbd Flywheel dia. 2865.5 3/4 Weight 1.8 tons Means of ignition Compression Kind of fuel used Diesel oil.

Revolutions per minute 103. Is there a bearing between each crank Between each three.

Journal dia. of journals 580 3/4 Crank pin dia. 580 3/4 Crank Webs Mid. length breadth 840 3/4 Thickness parallel to axis 320 3/4

Propeller Shaft, diameter as per Rule 460 3/4 Intermediate Shafts, diameter as per Rule 409 3/4 Thrust Shaft, diameter at collars as per Rule 500 3/4

Screw Shaft, diameter as per Rule 441 3/4 Is the screw shaft fitted with a continuous liner Yes.

Liner thickness in way of bushes as per Rule 22 3/4 Thickness between bushes as per Rule 14 3/4 Is the after end of the liner made watertight in the stern tube 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 the spare charged with a plastic material insoluble in water and non-corrosive Yes.

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

Length of Bearing in Stern Bush next to and supporting propeller 6'-2"

Material Brass whether Moveable NO Total Developed Surface 152 sq. feet

Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes. Means of lubrication Hand Operated

Are the cylinders fitted with safety valves Yes. Are the exhaust pipes and silencers water cooled or lagged with lagging material Lagged

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

Can one be overhauled while the other is at work Yes.

No. and Size Bilge Pump. 10" x 11" x 10"; Geo Service 10" x 11" x 10"

How driven Steam

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements NO

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2. Weir - 80 TH

Are the Bilge Suctions in the Machinery Spaces easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes.

Are they fitted with Valves or Cocks Yes.

Are the Overboard Discharges above or below the deep water line below.

Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes.

How are they protected Yes.

Have they been tested as per Rule Yes.

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes.

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 Yes.

Is the Shaft Tunnel watertight NO TUNNEL Is it fitted with a watertight door Yes.

Is it worked from Yes.

What means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes.

Air Compressors, No. 2. Weir No. of stages 3. Diameters 250 Cuft Stroke each. Driven by Steam.

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Is provision made for first Charging the Air Receivers

Enging Air Pumps, No. 3. Diameter 1800 3/4 Stroke 610 3/4 Driven by Revers on main engines.

Auxiliary Engines crank shafts, diameter as per Rule as fitted No. 2. Position on flat above intermediate shafting.

Have the Auxiliary Engines been constructed under special survey Yes. Is a report sent herewith Yes.

**AIR RECEIVERS:** — Have they been made under survey? *Yes*  
 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*  
 State No. of Report or Certificate *C. 99727*

**Injection Air Receivers, No.** *✓* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*  
 Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure *by Rules*  
**Starting Air Receivers, No.** *Two* Total cubic capacity *500 Cuft.* Internal diameter *5'0"* thickness *1 3/8"*  
 Seamless, lap welded or riveted longitudinal joint *Fusion Weld* Material *M. Steel* Range of tensile strength *28-32 T.T.* Working pressure *by Rules*  
 Actual *600*

**IS A DONKEY BOILER FITTED?** *Yes* *Two* If so, is a report now forwarded? *Yes*  
 Is the donkey boiler intended to be used for domestic purposes only? *NO*  
**PLANS.** Are approved plans forwarded herewith for Shafting? *Yes* Receivers *✓* Separate Fuel Tanks  
 Donkey Boilers *Yes* General Pumping Arrangements *Yes* Pumping Arrangements in Machinery Space *Yes*  
 Oil Fuel Burning Arrangements *Yes*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied? *Yes*  
 State the principal additional spare gear supplied: *1. V. Cylinders du lieu Complete, 2 piston heads Complete, 1 upper piston skirt, 1 lower piston rod & skirt, 6 fuel valve bodies, 2 spray plugs, 1 relief valve, 1 C.I. propeller, 1 Piston Shaft, 22 hoses for piston water service, 12 hoses for transverse, 50ft hoses for transverse, 2 Centre top end & units, 2 Centre bottom end bolts & nuts, 2 Side conn top bolts & nuts, 1 NR. Starting valve complete, 1-12 fuel pipe, 2 fuel valve pilot rams, 1 Fuel Pump Suction valve, 1 fuel valve lever, 2 fuel pump relief valves, 1 ram & guide for priming pump, 1-6 ft. T.K. lubricator and Sundry Small items.*

The foregoing is a correct description.  
 For and on behalf of  
**WILLIAM DOXFORD & SONS, LIMITED.**

*J. Rose*  
 Director.

Dates of Survey while building: During progress of work in shops -- 1952 Oct 2, 28, 30, Nov 3, 7, 11, 14, 17, 18, 21, 26, Dec 3, 5, 9, 16, 23, 1953 Jan 2, 13, 15, 19, 22, 26, 29, Feb 3, 10, 20, 24, Mar 5, 11, 12, 13  
 During erection on board vessel -- 27, 30 Apr 8, 13, 14, 16, 17, 20, 21, 22, 27, May 4, 6, 8, 11, 12, 13, 14, 18, 19, 20, 22, 25, 26, 28, 29, Jun 3, 5, 8, 10, 11, 15, 22, 30, Jul 1, 2, 3, 6, 8, Aug 1  
 Total No. of visits *94*

Dates of Examination of principal parts — Cylinders *14/4/53 to 8/5/53* Covers *NONE* Pistons *22/5/53 to 25/5/53* Rods *22/5/53 to 25/5/53* Connecting rods *25/5/53*  
 Crank shaft *21/4/53* Flywheel shaft *21/4/53* Thrust shaft *21/4/53* Intermediate shafts *3/4/53* Tube shaft *✓*  
 Screw shaft *W 3/4/53, S 6/1/53* Propeller *3/4/53 (Z 1085)* Stern tube *Exam 3-7-53, Fitted 6-7-53* Engine sealings *10/7/53* Engines holding down bolts *8/10/53*  
 Completion of fitting sea connections *10/7/53* Completion of pumping arrangements *19/11/53* Engines tried under working conditions *Quay trial 10/11/53, at sea 19/11/53*  
 Crank shaft, Material *S.M. Steel* Identification Mark *285.H.* Flywheel shaft, Material *S.M. Steel* Identification Mark *as thrust*  
 Thrust shaft, Material *S.M. Steel* Identification Mark *9743.H.* Intermediate shafts, Material *S.M. Steel* Identification Marks *25495-4*  
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.M. Steel* Identification Mark *W 25495-4, S 25495-6*  
 Identification Marks on Air Receivers *1269 & 1270*  
*TEST 950 160"*  
*WP 600 160"*  
*H.W. 9/14/53.*

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*  
 Description of fire extinguishing apparatus fitted *as per sketch 13680 accompanying this report.*  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo? *Tanker* 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? *Not required.*  
 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.) *This machinery has been built under special survey in accordance with the approved plans, the Secretary's letters, & the rules of the Society. The materials & workmanship are good. It has been securely fitted on board the vessel & tried under full working conditions with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (FP above 150°F) & the Safety Valves adjusted under steam to the working pressure. The requirements of Chap E, Section 3 have been complied with. The machinery is now eligible in our opinion to have notation LMC 11-53 (oil Eng), TS (CL) 2 - DB 150 lbs. Main Engines not to be operated continuously between 42 + 50 rpm. A notice fixed at controls & tachometer was accordingly. (HO letter 21/8/52)*

The amount of Entry Fee *CONST. £ 206-0-0* When applied for, *DEC - 1 1953*  
 Special *INST. £ 148-0-0*  
 Donkey Boiler Fee *WELDING £ 26-5-0* When received, *See 46.36136*  
 Travelling Expenses (if any) *£*  
 Committee's Minute *TUESDAY 23 DEC 1953*

*John Undergill for Self & H. Brown*  
 Engineer Surveyor to Lloyd's Register of Shipping



Assigned *+ LMC 11.53 (oil Eng) (Torsional Endorsement)*  
*2 DB 150 lb. CL.*

SUNDERLAND. Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)