

REPORT ON OIL ENGINE MACHINERY.

No. 31920

Received at London Office 22 SEP 1936

Date of writing Report 19 When handed in at Local Office 17 Sep 1936 Port of Sunderland
Date, First Survey 12 May Last Survey 15 Sep 1936
Number of Visits 36

Survey held at Sunderland
on the Single Screw vessel "SKIPSEA" Tons Gross 4944 Net 3031
built at Sunderland By whom built Wm. Doyford & Sons Ltd Yard No. 628 When built 1936
Engines made at Sunderland By whom made Wm. Doyford & Sons Ltd Engine No. 628 When made 1936
Donkey Boilers made at Stockton By whom made Stockton Chem. Eng. & Riley Bros. Ltd Boiler No. When made 1936
Brake Horse Power 2100 Owners Wm. Brown Atkinson & Co Port belonging to Hull
Nom. Horse Power as per Rule 449 Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted Yes
Trade for which vessel is intended Combined 2160 85/16

IL ENGINES, &c. Type of Engines Opposed piston airless injection 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 540 lbs/sq in Diameter of cylinders 560 mm Length of stroke Lower 1250 mm No. of cylinders 3 No. of cranks 3 (3 throw)
Mean Indicated Pressure 90 lbs/sq in Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 880 mm Is there a bearing between each crank between each
Revolutions per minute 110 Flywheel dia. FOR 2240 mm Weight 4.93 tons Means of ignition Compression Kind of fuel used between each
Crank Shaft, dia. of journals app. 390 mm Crank pin dia. 420 mm Crank Webs app. 293 mm Mid. length breadth 610 mm Thickness parallel to axis 240 mm
Flywheel Shaft, diameter app. 390 mm Intermediate Shafts, diameter app. 316 mm Thrust Shaft, diameter at collars app. 390 mm
Tube Shaft, diameter as per Rule Screw Shaft, diameter as fitted 362 mm Is the shaft fitted with a continuous liner Yes
Bronze Liners, thickness in way of bushes as per Rule 14 mm Thickness between bushes as per rule 12.45 mm 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 junctions made by fusion through the whole thickness of the liner Yes
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 Yes
If two liners are fitted, is the shaft lapped or protected between the liners no. Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no.
Propeller, dia. 15' 3" Pitch 11' 6" No. of blades 4 Material Brongze whether Moveable no. Total Developed Surface 86 sq. feet
Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication hand.
Thickness of cylinder liners 23 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material Yes
Cooling Water Pumps, No. 1 Steam driven Is 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 6 1/2" x 4" x 15" Stroke Simplex Can one be overhauled while the other is at work Yes
Pumps connected to the Main Bilge Line 2 No. and Size 6 1/2" x 4" x 15" How driven Steam
Is the cooling water led to the bilges no. If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements no.
Ballast Pumps, No. and size 1 10 1/2" x 13" x 24" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 main engine 85 mm x 540 mm
Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces 4 @ 3" in E.R. 1 @ 3" Tunnel Well. In Pump Room 1 Simplex 6 1/2" x 4" x 15" Simplex
In Holds, &c. N°1. 3 1/2" φ 18. N°2. 3 1/2" φ 48. N°3. 3" φ 18. N°4. 3 1/2" φ 18. Deep Tank 3 1/2" φ 18.
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast Pump) 1 @ 5"
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces Yes
Are all Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Bath.
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Overboard Discharges 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 the Blow Off Cocks fitted with a spigot and brass covering plate Yes
What pipes pass through the bunkers none. How are they protected Yes
What pipes pass through the deep tanks Forward bilge Suctions Have they been tested as per Rule Yes
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
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 Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from ER. top Grating.
If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Steam engine
Main Air Compressors, No. Two. No. of stages Three Diameters 10 1/2" x 8 1/2" x 2 1/2" Stroke 6" Driven by 1 1/2" x 6" Slide.
Auxiliary Air Compressors, No. none No. of stages 1 Diameters 1 1/2" x 6" Stroke 6" Driven by main engine
Small Auxiliary Air Compressors, No. none No. of stages 1 Diameters 1 1/2" x 6" Stroke 6" Driven by main engine
Scavenging Air Pumps, No. One Diameter 1600 mm Stroke 540 mm Driven by main engine
Auxiliary Engines crank shafts, diameter as per Rule No. 1 Position Yes

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes on discharge from Compt. 58*
 Can the internal surfaces of the receivers be examined and cleaned *Yes* Is a drain fitted at the lowest part of each receiver *Yes*

High Pressure Air Receivers, No. *none.* Cubic capacity of each *✓* Internal diameter *✓* thickness *✓*

Seamless, lap welded or riveted longitudinal joint *✓* Material *✓* Range of tensile strength *✓* Working pressure by Rules *✓* Actual *✓*

Starting Air Receivers, No. *Two.* Total cubic capacity *220 cuft.* Internal diameter *3'-6"* Working pressure by Rules *603.* Actual *600.*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *Mild Steel* Range of tensile strength *28/32.* Working pressure by Rules *603.* Actual *600.*

IS A DONKEY BOILER FITTED?

Is the donkey boiler intended to be used for domestic purposes only *Yes.* If so, is a report now forwarded? *Yes.*

PLANS. Are approved plans forwarded herewith for Shafting *14/12/35.* Receivers *Yes.* Separate Fuel Tanks *as per pool*

Donkey Boilers *✓* General Pumping Arrangements *✓* Pumping Arrangements in Machinery Space *as per pool*

Oil Fuel Burning Arrangements *✓* **SPARE GEAR.**

Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *1 least iron Propeller, 1 Propeller Shaft, 2 Front & 2 Back Fuel Valves Complete, 8 Fuel Valve Spray Pipes, 1 Starting air valve Complete, 1 cylr. Relief valve Complete, 4 Scavenge Pump valve Assts, 3 Fuel pump heads Complete with del. Chambers, rams & guides, 1 Suct. Valve, Chamber, Crankhead & Bell Crank lever / set Thrust pads, 1 roller chain for Cam shaft drive, 2 cylr. liners Complete with jackets, 2 main piston heads & 1 upper & 1 lower piston rod & skirt.*

WILLIAM DOXFORD & SONS, LIMITED.
 The foregoing is a correct description,

J. H. Miller Manager. *Manufacturer.*

Dates of Survey while building { During progress of work in shops - 1936. May 12, 14, 19, 27. June 5, 8, 19, 23, 30. July 1, 3, 6, 13, 14, 15, 21, 22, 23, 27, 28, 29, 30, 31. Aug. 5, 6, 7, 10, 14, 17, 27, 28, 31. Sep. 1, 4, 7, 5.
 During erection on board vessel -
 Total No. of visits *36.*

Dates of Examination of principal parts—Cylinders *8/6/36 23/6/36* Covers *✓* Pistons *22/7/36* Rods *22/7/36* Connecting rods *19/5/36*
 Crank shaft *28/4/36* Flywheel shaft *as crank* Thrust shaft *as crank.* Intermediate shafts *5/8/36* Tube shaft *✓*
 Screw shaft *28/4/36 29/7/36* Propeller *14/4/36* Stern tube *14/4/36 15/4/36* Engine seatings *Dunk top* Engines holding down bolts *28/8/36*
 Completion of fitting sea connections *13/4/36.* Completion of pumping arrangements *15/9/36* Engines tried under working conditions *15/9/36*
 Crank shaft, Material *Sm. Engd. Steel* Identification Mark *628 S.O. 4104* Flywheel shaft, Material *as crank.* Identification Mark *as crank.*
 Thrust shaft, Material *as crank.* Identification Mark *as crank.* Intermediate shafts, Material *Engd. Steel* Identification Marks *Nos 12086, 12119, 12122*
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Engd. Steel* Identification Marks *12123, 12124, 12118, 12117, 12151*
 Is the flash point of the oil to be used over 150° F. *Yes.* *W.H.F. 5/8/31*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *Yes.*
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *Yes (D. Tank)* so, have the requirements of the Rules been complied with *Yes.*
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *Not desired.*

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.) *The machinery of this vessel has been built under Special Survey in accordance with the Rules of the Society & the Secretary's letter E 25/4/34. The materials & workmanship are found to be satisfactory.*

The machinery has been securely fitted on board the vessel & tried under full working conditions at sea, including Rule requirements for Starting, with satisfactory results. The two donkey boilers have also been securely fixed on board the vessel & fitted to burn oil fuel (F.P. above 150°F), Section 20 of the Rules has been complied with. Safety valves of boilers adjusted to working pressure & accumulation test, carried out satisfactorily.

The machinery is eligible in my opinion to have notation as per M.C. 9.36 oil eng. T.S.(C) 2 DB. 120 lbs/psi

The amount of Entry Fee .. £ 5 : -
 Special £ 92 : 4
 Donkey Boiler Fee *welded* £ 12 : 12
 Travelling Expenses (if any) £ : : 22-9-36

When applied for, **8 SEP. 1936**

When received, **22-9-36**

J. H. Miller
 Engineer Surveyor to Lloyd's Register of Shipping.

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

FRI. 25 SEP 1936

+ dmb. 9.36 2 DB. 120 lb oil eng. Ch.

