

REPORT ON OIL ENGINE MACHINERY.

No. 29.100

Received at London Office

4 JUL 1925

Date of writing Report

19

When handed in at Local Office

13 JULY 1925

Port of

SUNDERLAND.

No. in Survey held at
Reg. Book.

SUNDERLAND.

Date, First Survey

20th Dec

Last Survey

13th July 1925

Number of Visits

43

Single
on the ~~Triple~~ Screw vessels

"SILVERAY"

Tons

Gross 4535
Net 2626

Built at Sunderland

By whom built J.L. Thompson & Sons

Yard No. 554 When built 1925

Engines made at Sunderland

By whom made W. Duxford & Sons

Engine No. 153 When made 1925

Donkey Boilers made at Annan

By whom made Cochran & Co

Boiler No. 9673 When made 1925

Brake Horse Power 2200

Owners Stanley & John Thompson & Co

Port belonging to London

Nom. Horse Power as per Rule 4800

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted YES

OIL ENGINES, &c.—Type of Engines

Duxford Opposed Piston

2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 568 lb

No. of cylinders 3

Diameter of cylinders 5.50 in

No. of cranks 3, 3 length of stroke 2 1/2 in

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 10.50 in

Is there a bearing between each crank YES

Revolutions per minute 90

Flywheel dia. 8'-8"

Weight 12 1/2 tons

Means of ignition Temp of Comp. Kind of fuel used Heavy oil F.P. above 150°

Crank Shaft, dia. of journals as per Rule

as fitted 4.30 in

rank pin dia. 4.60 in

Crank Webs

Mid. length breadth 6.50 in

Thickness parallel to axis 2.60 in

Flywheel Shafts, diameter as per Rule

as fitted 4.30 in

Intermediate Shafts, diameter as per Rule

as fitted 3.56 in

Thrust Shaft, diameter at collars as per Rule

as fitted 4.30 in

Tube Shafts, diameter as per Rule

as fitted

Screw Shaft, diameter as per Rule

as fitted 4.00 in

Is the screw shaft fitted with a continuous liner YES

Bronze Liners, thickness in way of bushes as per Rule

as fitted 25/32"

Thickness between bushes as per Rule

as fitted 25/32"

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

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 the shaft

Propeller, dia. 16'-6"

Pitch 14'-6"

No. of blades 4

Material Bronze

whether Moveable No

Total Developed Surface 86 sq. feet

Method of reversing Engines Comp^d air

Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES

Means of lubrication

Free

Thickness of cylinder liners 1" Reinforced

Are the cylinders fitted with safety valves YES

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 Funnel

Cooling Water Pumps, No. 2

Is the sea suction provided with an efficient strainer which can be cleared within the vessel Sea water cut thro. valves

Bilge Pumps fitted to 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 3

How driven Electric motors

Ballast Pumps, No. and size 1 @ 300 tons per hr

Lubricating Oil Pumps, including Spare Pump, No. and size 1 on main Engine 20 tons per hour

Are two independent means arranged for circulating water through the Oil Cooler None

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Engine and Boiler Room 4 @ 3"

In Holds, &c. In Nos. 1, 2, 4 & 6 holds 2 each @ 3" 2 in Nos. 3, 5 deep tank holds 2 each @ 2 1/2" + 2 each @ 6"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 4 1/2" to Gen. air pump, 1 @ 5" to Ballast pumps

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES

Are the Bilge Suctions in the Machinery Space

led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges YES

Are all Sea Connections fitted direct on the skin of the ship YES

Are they fitted with Valves or Cocks Both

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

What pipes pass through the deep tanks Bilge suction pipes

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 Upper Platform

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. None

No. of stages

Diameters

Stroke

Driven by

Auxiliary Air Compressors, No. 2

No. of stages 3

Diameters 10 1/2" + 2 1/4"

Stroke 5"

Driven by Electric motors

Small Auxiliary Air Compressors, No. 1

No. of stages 2

Diameters 12 3/4" + 7 1/4" + 3 1/2"

Stroke 6"

Driven by Paraffin engine

Scavenging Air Pumps, No. 1

Diameter 15.80 in

Stroke 6.60 in

Driven by main Eng

Auxiliary Engines crank shafts, diameter as per Rule

as fitted

IR RECEIVERS:—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 YES

What means are provided for cleaning their inner surfaces Man holes 16 1/2"

Is there a drain arrangement 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 Steel Plate

Range of tensile strength

Working pressure by Rules

Starting Air Receivers, No. 2

Total cubic capacity 220 Cub. ft

Internal diameter 3'-6"

thickness 1 1/4"

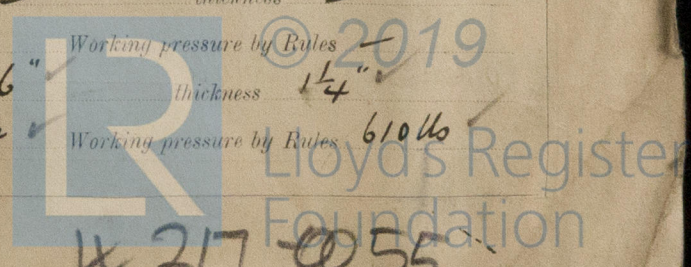
Seamless, lap welded or riveted longitudinal joint Rivd

Material Steel Plate

Range of tensile strength 28-32

Working pressure by Rules 610 lb

W 217 0055



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	Soundness ascertained by inspection, plain cylindrical form				
COVERS	NONE				
JACKETS	24.4.25 to 13.5.25	4 lbs	30 lbs	153 LLOYD TEST 30 lbs G.A.H.	
PISTON WATER PASSAGES	1.5.25 to 5.5.25	30 lbs	100 lbs	153 LLOYD TEST 100 lbs G.A.H.	
MAIN COMPRESSORS—1st STAGE	—				
2nd	—				
3rd	—				
AIR RECEIVERS—STARTING	20.4.25	600 lbs	800 lbs	153 LLOYD TEST 800 lbs G.A.H.	
INJECTION	—				
AIR PIPES	7.5.25 to 22.6.25	600 lbs	1000 lbs	153 LLOYD TEST 1000 lbs G.A.H.	
FUEL PIPES	4.5.25	8000 lbs	12000 lbs	153 LLOYD TEST 12000 lbs G.A.H.	
FUEL PUMPS	22.5.25	8000 lbs	12000 lbs	153 LLOYD TEST 12000 lbs G.A.H.	
SILENCER	Lagged with asbestos, open to atmosphere				
WATER JACKET	NONE				
SEPARATE FUEL TANKS	1.5.25	NIL	10 lbs	153 LLOYD TEST 10 lbs G.A.H.	

PLANS. Are approved plans forwarded herewith for Shafting

YES

Receivers

Separate Tanks

YES

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR / Cylindrical liner, 1 piston, 1 skirt 12 pist. rings, 2 crankers cm. rod top end bearings, bolts, 1 crank cm. rod bottom end bearing with bolts nuts, 1 side crank end complete with bolts, nuts, & guide shoes, 1 side cm. rod bottom end bearing & bolts, nuts, 1 main bearing complete with studs, 1 oil coupling bolts for crank shaft, 1 oil comp. bolts for tunnel shaft, 4 fuel valves complete, 1 starting & 1 relief valve, 1 scavenge pump suction valve & 1 scavenge pump delivery valve, 4 scavenge disc valves, 1 hour & 1 level wheel for cam shaft drive, 1 scavenge pump piston ring, 1 fuel pump body complete, 1 propeller shaft, 1 propeller 1 straight length for crank shaft space. assorted bolts, nuts, down & up pins.

The foregoing is a correct description, SONS, Limited.

J. W. Wells

Manufacturer.

Manager.

Dates of Survey while building
During progress of work in shops - 24. Dec. 20, 25, Jan. 6, 20, 26, 29, Feb. 4, 10, 19, M. 4, 12, 16, 19, 25, 30, 31, Sept. 6, 7, 16, 22, 24, 27, May 1, 4, 5, 7, 8, 13, 14, 22, 26, 29, June 4, 8, 9, 10, 18, 22, 30, July 3, 7, 9, 13.
Total No. of visits 113

Dates of Examination of principal parts—Cylinders 13.5.25 Covers ✓ Pistons 4.5.25 Rods 4.5.25 Connecting rods 4.5.25
Crank shaft Flywheel shaft 1.5.25 Thrust shaft 1.5.25 Intermediate shafts 1.5.25 Tube shaft ✓
Screw shaft 1.5.25 Propeller 22.4.25 Stern tube 7.4.25 Engine seatings 4.5.25 Engines holding down bolts 16.6.25
Completion of fitting sea connections 20.4.25 Completion of pumping arrangements 3.7.25 Engines tried under working conditions 9.7.25
Crank shaft, Material Steel Identification Mark 2086 W.L. 880 Flywheel shaft, Material Steel Identification Mark 153 G.A.H.
Thrust shaft, Material Steel Identification Mark 153 G.A.H. Intermediate shafts, Material Steel Identification Marks 153 G.A.H.
Tube shaft, Material ✓ Identification Mark — Screw shaft, Material Steel ✓ Identification Mark 153 G.A.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, &c.)

The machinery of this vessel has been constructed under special survey. The materials and workmanship are found and good and under the vessel eligible in our opinion to have used of L.M.C. 725 oil engine.

The amount of Entry Fee ... £ 5 : : When applied for, 13 JULY 1925
Special ... £ 97 : :
Donkey Boiler Fee ... £ 4 : 34 : :
Travelling Expenses (if any) £ : :
When received, 28 JUL 1925
FRI. 24 JUL 1925

Committee's Minute

Assigned

+ L.M.C. 725
C.L. oil engines

E. A. H. & G. Anderson
Engineer Surveyor to Lloyd's Register of Shipping.



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