

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 132.

Date of writing Report 20th Nov, 1935. When handed in at Local Office 20th Nov, 1935 Port of Winterthur. Received at London Office 23 NOV 1935
No. in Survey held at Winterthur. Date, First Survey 4th March, 35. Last Survey 12th Nov, 1935.
Reg. Book. Number of Visits

on the ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel "DUNEDIN STAR"

Tons { Gross
Net

Built at Birkenhead By whom built Messrs. Cammell Laird & Co., Yard No. 1009 When built
Engines made at Winterthur By whom made Messrs. Sulzer Bros. Ltd. Engine No. 6519 When made 1935.
Donkey Boilers made at By whom made Boiler No. When made
Brake Horse Power 12000 (2 Engg) Owners Messrs. Blue Star Line Ltd. Port belonging to London.
Nom. Horse Power as per Rule 2516 (2 engg) Is Refrigerating Machinery fitted for cargo purposes Yes. Is Electric Light fitted

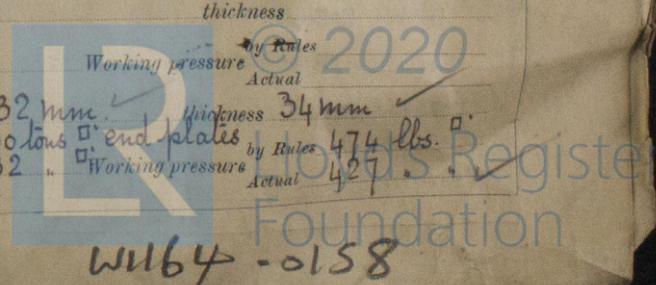
TRADE for which vessel is intended 28^{3/8} 49^{3/4}
IL ENGINES, &c. Type of Engines Sulzer solid injection engines 2 or 4 stroke cycle 2 Single or double acting Single
Maximum pressure in cylinders 850 lb. Diameter of cylinders 720 mm. Length of stroke 1250 mm. No. of cylinders 18 (2 engg) No. of cranks 18 (2 engg)
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 910 mm. Is there a bearing between each crank Yes.
Revolutions per minute 120 Flywheel dia. 2350 mm. Weight 2000 Kg. Means of ignition Compression Kind of fuel used heavy fuel oil
Crank Shaft, dia. of journals as per Rule 470 mm. Crank pin dia. 490 mm. Crank Webs Mid. length breadth Thickness parallel to axis 1305 mm.
as fitted 490 mm. Mid. length thickness shrunk Thickness around eye-hole 244 mm.
Flywheel Shaft, diameter as per Rule 470 mm. Intermediate Shafts, diameter as per Rule 377 mm. Thrust Shaft, diameter at collars as per Rule 396 mm.
as fitted 490 mm. as fitted 490 mm.

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube screw shaft fitted with a continuous liner
as fitted Bronze Liners, thickness in way of bushes as per Rule Thickness between bushes as per rule Is the after end of the liner made watertight in the propeller boss
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 tube shaft
If so, state type Length of Bearing in Stern Bush next to and supporting propeller
Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet
Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes. Means of lubrication forced.
Thickness of cylinder liners 45 mm. 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
Cooling Water Pumps, No. 2. Combined jacket & piston cooling the sea suction provided with an efficient strainer which can be cleared within the vessel
Bilge Pumps worked from the Main Engines, No. 1. Harbour sea & fresh water cooling pump, standby for piston cooling
Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line { No. and Size How driven
Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size 3 sets, 1 spare. Cross heads 6. Bearings 48 cub. ft.
Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces In Pump Room
In Holds, &c.
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 Suctions 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 plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate
What pipes pass through the bunkers How are they protected
What pipes pass through the deep tanks 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 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 Is the Shaft Tunnel watertight 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

Main Air Compressors, No. No. of stages Diameters Stroke Driven by
Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by
Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by
Scavenging Air Pumps, No. 1 Tandem D.A. each eng. Diameter 1750 mm. Stroke 750 mm. Driven by crankshaft
Auxiliary Engines crank shafts, diameter as per Rule 179 mm. Journals: 210 mm. Pins 180 mm. Position —
as fitted

AIR 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 and cleaned Yes. manhole Is a drain fitted at the lowest part of each receiver Yes
High Pressure 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 2020 Actual
Starting Air Receivers, No. 2 Total cubic capacity 32 cub. metres Internal diameter 1532 mm. Thickness 34 mm.
Seamless, lap welded or riveted longitudinal joint fusion welded Material S.M. Steel Range of tensile strength 28-32 Working pressure by Rules 474 lbs. Actual 427



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 4-3-35.

Receivers 19-8-35.

Separate Tanks

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

Yes.

State the principal additional spare gear supplied

See separate list

The foregoing is a correct description.

Sulzer Brothers Limited
Following

Manufacturer.

Dates of Survey while building
During progress of work in shops - - 4-3-35 to 12-11-35 - 77 visits
During erection on board vessel - -
Total No. of visits

Dates of Examination of principal parts—Cylinders 19-9-35, 4-10-35. Covers 19-9-35, 4-10-35. Pistons 19-9-35, 4-10-35. Rods 19-9-35, 4-10-35. Connecting rods 19-9-35, 4-10-35.

Crank shaft 19-9-35, 8-10-35. Flywheel shaft 19-9-35, 8-10-35. Thrust shaft 19-9-35, 8-10-35. Intermediate shafts
Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts Tube shaft

Completion of fitting sea connections. Completion of pumping arrangements Engines tried under working conditions
Crank shaft, Material Ann. S.M. Eng. Stl. Identification Mark Lloyd's No 11165, M.B. 8-5-35, 15375, K.H. 16-5-35. Flywheel shaft, Material Ann. S.M. Eng. Stl. Identification Mark Lloyd's No 9648, J.L. 11-4-35.

Thrust shaft, Material Ann. S.M. Eng. Stl. Identification Mark 11236, H.B. 18-6-35, 11259, M.B. 27-6-35. Intermediate shafts, Material Identification Marks
Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

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 No. If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been constructed under special survey in accordance with the requirements of the Rules, the Secretary's letters and the approved plans. Materials and workmanship good. Full power trials of engines in shop satisfactory.

The engines have been dispatched to Messrs. Cammell Laird & Co. Ltd., Birkenhead, to be installed in the vessel.

The amount of Entry Fee	£	150	When applied for,
Special	£	4073	31 st Oct, 1935
Donkey Boiler Fee	£		When received,
Travelling Expenses (if any)	£		2 nd Nov, 1935

W.B. Gallis

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned



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