

# REPORT ON OIL ENGINE MACHINERY.

No. 35.

Received at London Office

Date of writing Report 22<sup>nd</sup> May 1923. When handed in at Local Office 22<sup>nd</sup> May 1923. Port of Winterthur  
Date, First Survey 20<sup>th</sup> May 1920 Last Survey 22<sup>nd</sup> May 1923

Survey held at Winterthur. Number of Visits  
on the Single Screw vessels  
Twin  
Triple

Master                      Built at Kobe By whom built Kobe Steel Works. Yard No.                      When built  
Engines made at Winterthur By whom made Sulzer Bros. & Co. Engine No. 5049 When made 1923  
Monkey Boilers made at                      By whom made                      Boiler No.                      When made                       
Gross Horse Power 1600 (2 E.H.G.) Owners                      Port belonging to                       
Net                       
Nom. Horse Power as per Rule 370 (2 E.H.G.) Is Refrigerating Machinery fitted for cargo purposes                      Is Electric Light fitted                     

TYPE OF ENGINES, &c.—Type of Engines Sulzer Diesel Engines 2 or 4 stroke cycle 2 Single or double acting single  
Maximum pressure in cylinders 35 ATs. 500 lb. No. of cylinders 8 (2 E.H.G.) No. of cranks 8 (2 E.H.G.) Diameter of cylinders 470 mm 18 1/2"  
Length of stroke 740 mm 29 1/8" Revolutions per minute 150 Means of ignition Temperature due to Compression Kind of fuel used Heavy fuel oil!

Is there a bearing between each crank Yes. Span of bearings (Page 92, Section 2, par. 7 of Rules) 596 mm  
Distance between centres of main bearings 940 mm Is a flywheel fitted Yes. Diameter of crank shaft journals 285.5 mm as per Rule  
Diameter of crank pins 290 mm Breadth of crank webs 400 mm as per Rule 399.7 mm Thickness of ditto 159.8 mm as fitted 160 mm

Diameter of flywheel shaft 285.5 mm as per Rule 290 mm as fitted Diameter of tunnel shaft                      as per Rule                      as fitted  
Diameter of screw shaft                      as per Rule                      as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube                       
Is the after end of the liner made watertight in the propeller boss                      If the liner is in more than one length are the joints burned                     

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                      If without liners, is the shaft arranged to run in oil                       
Type of outer gland fitted to stern tube                      Length of stern bush                      Diameter of propeller                     

Pitch of propeller                      No. of blades                      state whether moveable                      Total surface                      square feet  
Method of reversing direct Is a governor or other arrangement fitted to prevent racing of the engine when detached Yes Thickness of cylinder liners 38 mm  
Are the cylinders fitted with safety valves Yes. Means of lubrication forced. Are the exhaust pipes and silencers water cooled or lagged with                     

non-conducting material                      If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine                       
Yes. No. of cooling water pumps 2. Double acting each engine Is the sea suction provided with an efficient strainer which can be cleared                       
within the vessel                      No. of bilge pumps fitted to the main engines 2. Single A each Eng. Diameter of ditto 120 mm Stroke 156 mm

Can one be overhauled while the other is at work Yes. No. of auxiliary pumps connected to the main bilge lines                      How driven                       
Sizes of pumps                      No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room                       
and in holds, etc.                      No. of ballast pumps                      How driven                      Sizes of pumps                     

Is the ballast pump fitted with a direct suction from the engine room bilges                      State size                      Is a separate auxiliary pump suction fitted in                       
Engine Room and size                      Are all the bilge suction pipes fitted with roses                      Are the roses in Engine Room always accessible                       
Are the sluices on Engine Room bulkheads always accessible                      Are all connections with the sea direct on the skin of the ship                     

Are they valves or cocks                      Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates                       
Are the discharge pipes above or below the deep water line                      Are they each fitted with a discharge valve always accessible on the plating of the vessel                       
Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times                      Are the bilge suction pipes, cocks and valves arranged so as to prevent any                       
communication between the sea and the bilges                      Is the screw shaft tunnel watertight                      Is it fitted with a watertight door                     

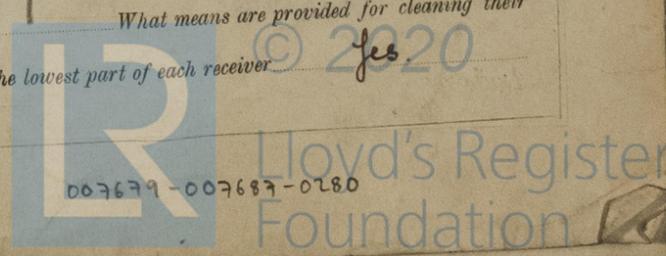
worked from                      If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork                       
No. of main air compressors 2 (2 E.H.G.) No. of stages 3 Diameters 560/510/120 Stroke 350 mm Driven by main shaft  
No. of auxiliary air compressors                      No. of stages                      Diameters                      Stroke                      Driven by                     

No. of small auxiliary air compressors                      No. of stages                      Diameters                      Stroke                      Driven by                       
No. of scavenging air pumps 2. Double Acting (2 E.H.G.) Diameter 1000 mm Stroke 570 mm Driven by main shaft  
Diameter of auxiliary Diesel Engine crank shafts                      as per Rule                      as fitted                      Are the air compressors and their coolers made so as to be easy of access Yes.

AIR RECEIVERS:—No. of high pressure air receivers 2 (2 E.H.G.) Internal diameter 246 mm Cubic capacity of each 85 litres  
material S.M. Steel Seamless, lap welded or riveted longitudinal joint seamless. Range of tensile strength 28 To 32 Tons per sq  
thickness 12 mm working pressure by Rules 92 at's No. of starting air receivers 10 Internal diameter 410

Total cubic capacity                      Material                      Seamless, lap welded or riveted longitudinal joint                       
Range of tensile strength 60 to 70 kg thickness 17.5 Working pressure by Rules 70 kg 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 Injection Receiver: Opening 125 mm dia at top end. Is there a drain arrangement fitted at the lowest part of each receiver Yes.



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:—

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....	1-11-21, 2-11-21, 3-11-21, 7-12-21	35 ATs.	75 ATs.	R	Just satisfactory
" " COVERS .....	" " " "	" "	" "	R	-do-
" " JACKETS.....	27-3-23, 20-4-23	1 "	3 "	R	-do-
" " PISTON WATER PASSAGES.....	9-4-23, 17-4-23	3 "	6 "	R	-do-
MAIN COMPRESSORS—1st STAGE.....	28-11-21, 9-12-21	3 "	35 "	R	-do-
" 2nd " .....	-do- -do-	17.5 "	" "	R	-do-
" 3rd " .....	7-12-21, 15-12-21	70 "	140 "	R	-do-
AIR RECEIVERS—STARTING .....					
" INJECTION .....	16-4-23, 30-4-23	70 "	140 "	R	-do-
AIR PIPES .....	7-12-22, 8-12-22, 11-12-22, 16-3-23, 19-3-23	" "	" "	R	-do-
FUEL PIPES .....	" " " " " "	" "	" "	R	-do-
FUEL PUMPS VALVES.....	1-3-21, 25-2-21, 12-5-21, 14-7-21	" "	" "	R	-do-
SILENCER EXHAUST PIPES.....	12-5-21, 13-5-21	1 "	3 "	R	-do-
" WATER JACKET .....	27-3-23, 20-4-23	" "	" "	✓	-do-
SEPARATE FUEL TANKS .....					

PLANS. Are approved plans forwarded herewith for shafting 23-1-20 Receivers 14-7-6-20 Separate Tanks

SPARE GEAR

The foregoing is a correct description,

*W. G. Gallis*  
*W. G. Gallis*  
 Limited  
 Manufacturer.

Dates of Survey while building: During progress of work in shops - 20-5-20, 15-7-20, 14-10-20, 15-10-20, 8-1-21, 25-2-21, 1-3-21, 12-5-21, 13-5-21, 14-7-21, 1-11-21, 2-11-21, 3-11-21, 28-11-21, 30-11-21, 7-12-21, 9-12-21, 13-12-21, 15-12-21, 4-1-22, 7-12-22, 8-12-22, 11-12-22, 18-12-22, 19-12-22, 22-3-23, 27-3-23, 9-4-23, 10-4-23, 11-4-23, 12-4-23, 16-4-23, 17-4-23, 20-4-23, 26-4-23, 30-4-23  
 During erection on board vessel - 3-5-23, 22-5-23  
 Total No. of visits 16-3-23, 16-3-23

Dates of Examination of principal parts—Cylinders 10-4-23, 30-4-23 Covers 10-4-23, 30-4-23 Pistons 17-4-23, 30-4-23 Rods 12-4-23, 30-4-23 Connecting rods 12-4-23, 30-4-23

16-4-23 Crank shafts 30-4-23 Thrust shaft Tunnel shafts Screw shaft Propeller Stern tube Engine seatings

Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions

Completion of fitting sea connections Stern tube Screw shaft and propeller

Material of crank shafts S.M. Ann. Ing. Steel Identification Mark on Do. ENR. N° 5049 or 5053 17-4-23 or 30-4-23 Material of thrust shaft Identification Mark on Do.

Material of tunnel shafts Identification Marks on Do. Material of screw shafts Identification Marks on Do.

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.) This machinery has 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 amount of Entry Fee ... £ 5-0-0  
 Special ... £ 80-10-0  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 30<sup>th</sup> May 1923.  
 When received, 1<sup>st</sup> June 1923.

*W. G. Gallis*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 20 FEB 1925

TUES. 12 MAY 1925

Assigned

FRI. 19 JUN 1925



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