

REPORT ON OIL ENGINE MACHINERY.

No. 7151

Received at London Office 20 OCT 1930

Date of writing Report 15-10-1930 When handed in at Local Office 18-10-1930 Port of MANCHESTER  
Date, First Survey 20-5-30 Last Survey 14-10-1930  
Number of Visits 11.

Survey held at Reg. Book. on the Single Twin Triple Screw vessel "HO-KWANG".  
Built at Shanghai. By whom built The New Engineering & Ship Works Ltd Yard No. 687 When built  
Engines made at Keighley, Yorks. By whom made Messrs H. Widdop & Co Ltd Engine No. 2958 When made 1930  
Donkey Boilers made at By whom made Boiler No. When made  
Brake Horse Power 600 Total Owners The Asiatic Petroleum Co. Port belonging to  
Nom. Horse Power as per Rule 171 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which vessel is intended Oil carrying vessel

IL ENGINES, &c.—Type of Engines Vertical, Solid Injection, Reversing, Air Starting 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 600 lbs/sq Diameter of cylinders 11 1/2 Length of stroke 13 1/2 No. of cylinders 6 each engine No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 16.84 Is there a bearing between each crank Yes  
Revolutions per minute 330 Flywheel dia. 40 Weight 20 1/2 cwt Means of ignition Heat of compression of fuel used Heavy Oil  
Crank Shaft, dia. of journals 6 3/4 as per Rule Approved Crank pin dia. 6 3/4 Crank Webs Mid. length breadth 9 3/4 Mid. length thickness 3 3/4 Thickness parallel to axis solich Thickness around eye-hole solich  
Propeller Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule as fitted  
Screw Shaft, diameter as per Rule as fitted Is the tube screw shaft fitted with a continuous liner

Size Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per rule as fitted Is the after end of the liner made watertight in the  
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 so, state type Is an approved Oil Gland or other appliance fitted at the after end of the tube  
Length of Bearing in Stern Bush next to and supporting propeller  
Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet  
Method of reversing Engines Hand shaft & air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication  
TO MAIN BEARINGS MANIFOLDS  
SIGHT FEED TO REMAINER. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with  
conducting material WATER COOLED the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine  
Sight Water Pumps, No. One on each engine Is the sea suction provided with an efficient strainer which can be cleared within the vessel  
Sight Pumps worked from the Main Engines, No. One on each engine Diameter 3 1/2 Stroke 3 Can one be overhauled while the other is at work  
Pumps connected to the Main Bilge Line No. and Size How driven  
Last Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size ONE TWIN PLUNGER PUMP 1 1/4 x 3 stroke  
Two independent means arranged for circulating water through the Oil Cooler ONE SIGHT FEED LUBRICATOR PUMP  
Pumps, No. and size:—In Machinery Spaces Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Holds, &c.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size  
All the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-bones Are the Bilge Suctions in the Machinery Spaces  
from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges  
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  
How are they protected  
What pipes pass through the bunkers Have they been tested as per Rule  
What pipes pass through the deep tanks  
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. One on each engine No. of stages 2 Diameters 2 3/4 & 6 Stroke 3 Driven by hand shaft extension  
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. Hand crank compression Diameter Stroke Driven by  
Auxiliary Engines crank shafts, diameter as per Rule as fitted

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Safety valve fitted on compressor  
Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Plug in ends  
Is there a drain arrangement fitted at the lowest part of each receiver Yes  
High Pressure Air Receivers, No. Not fitted Cubic capacity of each Internal diameter thickness  
Seamless, lap welded or riveted longitudinal joint 237030, 237031, 237032, 237033 Material SEAMLESS Range of tensile strength Working pressure by Rules  
Starting Air Receivers, No. 6 237034 239029 Total cubic capacity 43.5 CUB. FT. Internal diameter 12 1/2 thickness 4 sides 1" centre of base  
Seamless, lap welded or riveted longitudinal joint CHESTERFIELD TYPE Material Mild Steel Range of tensile strength 28-32 Tons Working pressure by Rules 460 lbs/sq



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

at. 4b.

PLANS. Are approved plans forwarded herewith for Shafting ☒ Yes.  
(If not, state date of approval)

Receivers ☒ Yes.

Separate Tanks ☒

Donkey Boilers

General Pumping Arrangements

Oil Fuel Burning Arrangements

SPARE GEAR Two cylinder heads complete. (LLOYD'S TEST 7-10-30 CE).

Two pistons complete with rings and pins. Two gudgeon pin bushes. Two pairs crank pin brasses with bolts & nuts. Two sets screw gears for camshafts. Six sprayer nozzles. Two complete fuel pumps. One set of flexible coupling both. Four main bearing studs & nuts. One set studs and nuts for cylinder covers. Six sets crankcase air valves. Two crankcase air valve guards. Two air starting valve boxes. One lubricator ratchet pawl and spring. Six bango oilers. Two sets rubber valves for circulating pump. Two sets rubber valves for bilge pump. Two complete fuel injectors. One set crankcase sealing rings. One set bottom half main bearings (one engine). Twelve sets cylinder head joints. Six sets fuel pump delivery valves. Two sets pump plunger leathers. Two compressor delivery valves. Two compressor piston rings. Two compressor valve springs. Two compressor gudgeon pin oiler springs. Six lubricator oil pump springs.

The foregoing is a correct description,

For R. WIDDOP & COMPANY LTD.

Manufacturer.

Dates of Survey while building  
During progress of work in shops--  
During erection on board vessel--  
Total No. of visits

20/5/30, 23/6/30, 27/6/30, 8/7/30, 21/7/30, 24/7/30, 7/8/30, 9/9/30, 25/9/30, 7/10/30, 14/10/30.

Dates of Examination of principal parts—Cylinders 21-7-30 7-8-30

Covers 21-7-30 7-8-30

Pistons 7-8-30 25-9-30

Rods 23-6-30 27-6-30

Connecting rods 21-

Crank shaft 20-5-30, 8-7-30, 27-6-30, 24-7-30

Flywheel shaft

Thrust shaft 27-6-30 9-9-30

Intermediate shafts

Tube shaft

Screw shaft

Propeller

Stern tube

Engine seatings

Engines holding down bolts 25-9-30

Completion of fitting sea connections

Completion of pumping arrangements

Engines tried under working conditions in shop 14-10-

Crank shaft, Material Mild Steel

Identification Mark M<sup>o</sup> 539 + 1813 CE

Flywheel shaft, Material

Identification Mark

Thrust shaft, Material Mild Steel

Identification Mark M<sup>o</sup> 459 + 460 CE

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.

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

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 above main engines of Widdop's Type ZHG have been built under Special Survey, and the materials tested in accordance with the Rules of this Society. The materials so far as can be seen are sound and the workmanship is good. The engines proved satisfactory under shop tests on full load and manoeuvred well.

These engines are in my opinion eligible for the notation of \* LMC with date when fitted on board the vessel in accordance with the Rule requirements.

The amount of Entry Fee ... £3 : 0 :  
Special ... £34 : 4 :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £1 : 16 :

When applied for,

18.10.1930

When received,

3.11.1930

J. J. Campbell

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned



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