

REPORT ON OIL ENGINE MACHINERY.

See also Dun. Rpt. N° 9256.

Slid No 33083

APR 21 1941

Received at London Office

Sunderland.

19 APR 1941

Port of

Site of writing Report

When handed in at Local Office

No. in Survey held at

Date, First Survey

Last Survey

Number of Visits

eg. Book.

2530 on the Single Triple Screw vessel

"GRAY RANGER"

Tons Gross 3373 Net 1506

built at

By whom built

Yard No. 390 When built 1941

Engines made at Sunderland

By whom made

Engine No. 218 When made 1941.

Monkey Boilers made at Dundee

By whom made

Boiler No. 590 When made 1941

Brake Horse Power 2800

Owners

Port belonging to London

Com. Horse Power as per Rule 598.579

Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted yes

Trade for which vessel is intended Admiralty Diler 22 1/2

L ENGINES, &c.

Type of Engines

Opposed piston airless injection 2 or 4 stroke cycle 2

Single or double acting Single

Maximum pressure in cylinders

56.8 lbs/sq. in.

Diameter of cylinders

560 in.

Length of stroke

Upper 910 in.

No. of cylinders

4

No. of cranks

4 (3 throw)

Mean Indicated Pressure

81 lbs/sq. in.

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

F 2120 in.

F 2220 in.

Compensation

Is there a bearing between each crank

Between each 3 throw.

Revolutions per minute

120

Flywheel dia.

A. 2220 in.

Weight

A. 5.25 tons

Means of ignition

Temperature

Kind of fuel used

Crank Shaft, { Solid forged  
Semi built  
All built

dia. of journals

as per Rule 400 in.

as fitted 420 in.

Crank pin dia.

420 in.

Crank Webs

Mid. length breadth

610 in.

Thickens parallel to axis

240 in.

Flywheel Shaft, diameter

as per Rule 400 in.

as fitted 420 in.

Intermediate Shafts, diameter

as per Rule

Thrust Shaft, diameter at collars

as per Rule

as fitted 420 in.

Stern Shaft, diameter

as per Rule

as fitted

Screw Shaft, diameter

as per Rule

as fitted

Is the tube screw shaft fitted with a continuous liner

Bronze 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

propeller boss

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

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

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

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

Hand lever.

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

Means of lubrication

Thickness of cylinder liners

25 in.

Are the cylinders fitted with safety valves

Yes.

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

Cooling Water Pumps, No.

Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from 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

How driven

the cooling water led to the bilges

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

Ballast Pumps, No. and size

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size

One main bilge driven 120 in x 340 in.

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

Holds, &c.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

Are the Bilge Suctions in the Machinery Spaces

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

Are they fitted with Valves or Cocks

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates

Are the Blow Off Cocks fitted with a spigot and brass covering plate

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

How are they protected

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 Shaft Tunnel watertight

Is it fitted with a watertight door

worked from

Is 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

Is provision made for first Charging the Air Receivers

Revolving Air Pumps, No.

One

Diameter 1410 in.

Stroke

1100 in.

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule

No.

Position

Is a report sent herewith

Have the Auxiliary Engines been constructed under special survey

Main Engine Crankshaft.

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W1132-0258



AIR RECEIVERS: - Have they been made under survey State No. of Report or Certificate

Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned

Is a drain fitted at the lowest part of each receiver

Injection 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  
Actual

Starting Air Receivers, No.

Total cubic capacity

Internal diameter

thickness

Seamless, lap welded or riveted longitudinal joint

Material

Range of tensile strength

Working pressure

by Rules  
Actual

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  
(If not, state date of approval)

23/9/39.

Receivers

Separate Fuel Tanks

Donkey Boilers

General Pumping Arrangements

Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied (no top & bottom end Connecting rod bearings supplied)

State the principal additional spare gear supplied

1 Cylinder liner & packer Complete, 1 main piston head & 24 rings, 4 Inlet valves Complete, 8 Spray pumps, 1 N.R. air starting valve, 1 Cyl. relief valve, 2 fuel pumps, leadies Complete with x Hds, Struts & tappets, Delivery Chambers & full crank levers, 1 set thrust-rod, 1 roller chain for Camshaft drive, 12 hoses for upper piston cooling, 12 ditto for transverse lubrication, 1 cyl. lubricator, 8 discs for Scavenge pump, 1 set valve discs for main engine pumps.

The foregoing is a correct description, S. Limited.

J. H. Keller

Manufacturer.

Dates of Survey while building  
During progress of work in shops - 1941 Jan. 8, 16, 20, 23, 27, 30. Feb. 5, 7, 10, 11, 12, 17, 19, 25, 27, 28. Mar. 2, 4, 5, 6, 7, 10, 11, 12, 13, 14, 17, 19, 20, 24, 25, 26, 27, 28, 31.  
During erection on board vessel - 3, 4, 7, 8, 9, 17. Sld 43  
Total No. of visits

Dates of Examination of principal parts - Cylinders 30/1/41 14/2/41 Covers 25/2/41 4/3/41  
Crank shaft G.S. 11/2/41 Flywheel shaft as crank. Thrust shaft as crank Intermediate shafts 14/3/41 14/3/41 24/3/41 25/3/41  
Screw shaft 4/2/41 Propeller as crank. Tube shaft

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions  
Crank shaft, Material Ingot Steel FOR SECT. N° 9641 B AFT SECT. N° 9641 B G.E.M. 4/2/41. Identification Mark L.C.D. 11/2/41 Flywheel shaft, Material as crank. Identification Mark as crank  
Thrust shaft, Material as crank. Identification Mark as crank. Intermediate shafts, Material Identification Marks  
Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

Identification Marks on Air Receivers

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

Description of fire extinguishing apparatus fitted

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

If so, state name of vessel

M/V "GOLD RANGER."

General Remarks (State quality of workmanship, opinions as to class, &c.)

Special Survey is accordance with the approved Plans & the rules of the Society

The materials & workmanship are good.

The engine has been tried under full load conditions on the test bed & satisfactory results & has been despatched to Messrs. Calson Shipbuilding Co. Ltd. for installation on board the vessel, after which it will be shipped in my opinion to have notation as to M.C. (with date) oil Eng. in the R.B.

The amount of Entry Fee .. £ 6 : - : When applied for,  
2/3 Special ... £ 40 : - :  
Donkey Boiler Fee ... £ 12 : 12 : When received,  
Travelling Expenses (if any) £ : :  
GLASGOW 14 OCT 1941

Committee's Minute

Assigned

SEE ACCOMPANYING MACHINERY REPORT.

J. H. Keller

Engineer Surveyor to Lloyd's Register of Shipping.



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