

REPORT ON OIL ENGINE MACHINERY.

No 9256

Received at London Office

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Date of writing Report 9th Oct 1941 When handed in at Local Office 9th Oct 1941 Port of Dundee
 No. in Survey held at Dundee Date, First Survey 5th May Last Survey 25th Sept 1941
 Reg. Book. 4530 on the Single Motor R.F.A. "GRAY RANGER" Tons Gross 3313
Triple Screw vessel Net 1506
Quadruple
 Built at Dundee By whom built Baledon S.B. & Co. Ltd Yard No. 390 When built 1941
 Engines made at Sunderland By whom made Wm Doxford & Sons Ltd Engine No. 218 When made 1941
 Donkey Boilers made at Dundee By whom made Baledon S.B. & Co. Ltd Boiler No. 590 When made 1941
 Brake Horse Power 2800 Owners The Admiralty Port belonging to London
 Nom. Horse Power as per Rule 598 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted yes
 Trade for which vessel is intended Admiralty Oilers

L ENGINES, &c.—Type of Engines

2 or 4 stroke cycle

Single or double acting

Maximum pressure in cylinders

Diameter of cylinders

Length of stroke

No. of cylinders 33083

No. of cranks

Mean Indicated Pressure

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

Is there a bearing between each crank

Revolutions per minute

Flywheel dia.

Means of ignition

Kind of fuel used

Crank Shaft, { Solid forged
Semi built dia. of journals
All builtas per Rule
as fitted

Crank pin dia.

Crank Webs

Mid. length breadth
Mid. length thickness

shrunk

Thickness parallel to axis
Thickness around eye-hole

Flywheel 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

Stern Shaft, diameter

as per Rule
as fitted

Screw Shaft, diameter

as per Rule
as fitted

Is the

screw

shaft fitted with a continuous liner

yes

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

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

If so, state type

Propeller, dia. 14'-0"Pitch 12'-1"No. of blades 4Material Bronzewhether Moveable SolidTotal Developed Surface 48 sq. feet

Method of reversing Engines

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

Means of lubrication

Thickness of cylinder liners

Are the cylinders fitted with safety valves

Are the exhaust pipes and silencers water cooled or lagged with

Non-conducting material

yes

If the exhaust is led overboard what means are arranged to prevent water from being syphoned back to the engine

Cooling Water Pumps, No.

1-10" x 10" x 10" 1-10" x 11" x 10"

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

yes

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

1 off - 10 1/2" x 7 1/2" x 10"

How driven

Steam-driven

Steam-driven

If the cooling water led to the bilges

no

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

1 off - 10" x 11" x 10"

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

Steam-driven

1-7" x 8" x 18" Steam-driven both 32 tons/hr

Are two independent means arranged for circulating water through the Oil Cooler

yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces 1-2 1/2" Port, 1-2 1/2" Star aft, 1-2 1/2" Star fore, 1-2 1/2" tunnel well, 1-2" aft cofferdam In Pump Room 1-2" fore cofferdam

Holds, etc. 1-3" in W.T. Comp. Port, 1-3" in W.T. Comp. Star. In fore hold 1-2 1/2" Port, 1-2 1/2" Star. In fore pump room 1-2" P 1-2" S. Bilge Ejector aft pump room

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-4 1/2" from Bilge Pump Star. 1-4 1/2" from Ballast Pump port

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

yes

Are the Bilge Suctions in the Machinery Spaces

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

yes, with tail pipes as straight & portable as possible

Are all Sea Connections fitted direct on the skin of the ship & piped thro' buoyancy spaces

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

What pipes pass through the bunkers

None

How are they protected

What pipes pass through the deep tanks

None

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

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 top 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.

Two off

No. of stages

3 Stage

Diameters

Tandem

Stroke

11 1/2" x 6 1/2"

Driven by

Auxiliary Air Compressors, No.

yes

No. of stages

Diameters

Stroke

Driven by

Small Auxiliary Air Compressors, No.

yes

No. of stages

Diameters

Stroke

Driven by

What provision is made for first Charging the Air Receivers

Compressor are steam-driven

Scavenging Air Pumps, No.

one

Diameter

14 10"/in

Stroke

1100"/in

Driven by

Auxiliary Engines crank shafts, diameter

as per Rule
as fitted

Steam-driven

No.

2 off

Position

Fore End. Eng Room 1 Port 1 Star

Have the Auxiliary Engines been constructed under special survey

no

Is a report sent herewith

Lloyd's Register

Foundation

AIR RECEIVERS: — Have they been made under survey *yes* State No. of Report or Certificate *✓*
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* Is a drain fitted at the lowest part of each receiver *yes*
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. *2 off* Total cubic capacity *234 cub ft.* Internal diameter *3'-4 1/2" inside course* thickness *15/16"*
Seamless, lap welded or riveted longitudinal joint *T.P. Double Butt Straps.* Material *Steel* Range of tensile strength *29/33 tons* Working pressure by Rules *600 lbs* Actual *600 lbs*
IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *yes*
Is the donkey boiler intended to be used for domestic purposes only *No*
PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *yes* Separate Fuel Tanks *yes*
Donkey Boilers *yes* General Pumping Arrangements *With hull report* Pumping Arrangements in Machinery Space *yes*
Oil Fuel Burning Arrangements *yes*

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

As per list on Sld. Rpt. No 33083

The foregoing is a correct description.

Manufacturer.

Dates of Survey while building { During progress of work in shops - - }
During erection on board vessel - - } *1941 May 5-8-19-22-25-27-30 June 2-5-9-13-16-20 July 15-22-24 Aug. 13-15-19-21-27 Sept. 1-4-17-19-26*
Total No. of visits *26*

Dates of Examination of principal parts—Cylinders Covers Pistons Rods Connecting rods
Crank shaft Flywheel shaft Thrust shaft Intermediate shafts Tube shaft
Screw shaft in place *27/5/41* Propeller in place *27/5/41* Stern tube in place *22/5/41* Engine sealings *27/5/41* Engines holding down bolts *15/7/41*
Completion of fitting sea connections *22-5-41* Completion of pumping arrangements *19-9-41* Engines tried under working conditions *at Sea - 25/9/41*
Crank shaft, Material Identification Mark Flywheel shaft, Material Identification Mark
Thrust shaft, Material Identification Mark Intermediate shafts, Material *Steel* Identification Marks
Tube shaft, Material Identification Mark Screw shaft, Material *Steel* Identification Mark
Identification Marks on Air Receivers *LLOYD'S TEST 800 lbs. W.P. 600 lbs. 16-6-41 J.H.*

LLOYD'S NO 8988 899 H.A.I. C.N.H. 8-1-41
LLOYD'S NO 8988 899 H.A.I. C.N.H. 8-1-41
No 8988 - Spa

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 *yes*
Description of fire extinguishing apparatus fitted *Patent Extinguishers*
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 *yes* If so, state name of vessel *R. & A. "Gold Ranger"*

General Remarks (State quality of workmanship, opinions as to class, &c.)
This Machinery - Sld. Rpt No 33083 on the Main Engines, & Dundee Rpts Nos 9258, 9259 on the Donkey & Composite Boilers - has been efficiently fitted on board, the materials & workmanship being sound & good. The Main & Auxiliary Machinery, when tried out under full power & working conditions was found satisfactory in all respects. Manoeuvring tests were carried out, & the capacity of the air receivers was found to be considerably in excess of Rule requirements. In my opinion the Machinery of this vessel is eligible to be classed in the Register Book with the notation of +L.M.C. 9-41, & the records of Oil Eng. C.L. & 2 J.B. 150 lbs.

The amount of Entry Fee .. £ : : When applied for,
Special *1/3 L.M.C.* £ *35 : 0 : 0* *30/9/1941*
Donkey Boiler Fee ... £ *26 : 0 : 0* When received,
Air Receivers £ *4 : 4 : 0* *1 Oct 41*
Travelling Expenses (if any) £

Committee's Minute *GLASGOW 14 OCT 1941*
Assigned *1-1 June 9-41*
Oil Eng 200 150 lbs

John Houston
Engineer Surveyor to Lloyd's Register of Shipping.
Lloyd's Register Foundation