

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office 20 AUG 1941

Date of writing Report 2nd Aug 1941 When handed in at Local Office 16th Aug 1941 Port of Glasgow
 No. in Survey held at Paisley Date, First Survey 25th Oct 1940 Last Survey 31st July 1941
 Reg. Book. on the "EMPIRE WILLOW" (Number of Visits 33)
 Built at Thorne By whom built R. Dunstan Ltd Yard No. 359 When built
 Engines made at Paisley By whom made W. & A. Bartel Ltd Engine No. 1328 When made 1941
 Boilers made at Glasgow By whom made John Thompson (Marine Eng.) Ltd Boiler No. 5157 When made
 Registered Horse Power Owners Port belonging to
 Nom. Horse Power as per Rule 85 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
 Trade for which Vessel is intended

ENGINES, &c.—Description of Engines Triple Expansion Revs. per minute 140
 Dia. of Cylinders 12 - 20 - 32 Length of Stroke 22 No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals 6.44 as per Rule 6.2 as fitted Crank pin dia. 6.2 Crank webs Mid. length breadth shrunk Thickness parallel to axis 4.8
 Intermediate Shafts, diameter 6.13 as per Rule 6.7 as fitted Thrust shaft, diameter at collars 6.44 as per Rule 6.2 as fitted
 Tube Shafts, diameter 7.12 as per Rule 7.8 as fitted Screw Shaft, diameter 7.8 as fitted Is the tube shaft fitted with a continuous liner Yes
 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 Yes
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes
 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 Yes
 If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft Yes
 If so, state type Newark - Type N° 3 Length of Bearing in Stern Bush next to and supporting propeller 29
 Propeller, dia. 8' 3" Pitch 10' 0" No. of Blades 4 Material Cast iron whether Moveable Solid Total Developed Surface 24 sq. feet
 Feed Pumps worked from the Main Engines, No. one Diameter 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes
 Bilge Pumps worked from the Main Engines, No. one Diameter 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes
 Feed Pumps { No. and size Pumps connected to the { No. and size
 { How driven { Main Bilge Line { How driven
 Ballast Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size Yes
 Are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room
 In Pump Room In Holds, &c.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 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 Space 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 stokehold 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

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 1356 sq. ft.
 Which Boilers are fitted with Forced Draft Which Boilers are fitted with Superheaters
 No. and Description of Boilers One single ended Working Pressure 200 lbs.
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? No - see ltr. ref. N° 64105.
 IS A DONKEY BOILER FITTED? If so, is a report now forwarded?
 Can the donkey boiler be used for domestic purposes only
 PLANS. Are approved plans forwarded herewith for Shafting 29-11-40 Main Boilers Yes Auxiliary Boilers Donkey Boilers
 (If not state date of approval)
 Superheaters General Pumping Arrangements Oil fuel Burning Piping Arrangements

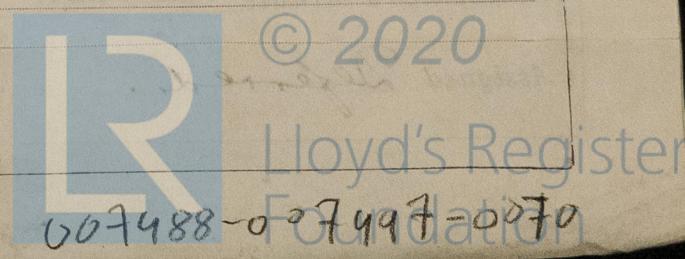
SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes as per attached list
 State the principal additional spare gear supplied

The foregoing is a correct description.
 For MCKIE & BAXTER, LIMITED,

[Signature]
 DIRECTOR

Manufacturer.



1940 Oct: 25 Nov: 29 (1941) Jan: 7.10.27 Feb: 7.12.26 Mar: 3.10.19.26.28.31 Apr: 10.24
 During progress of work in shops - - May: 1.5.9.14.21.23.30 June: 5.26 July: 3.7.8.16.17.18.25.31
 Dates of Survey while building }
 During erection on board vessel - - - }
 Total No. of visits 33

Dates of Examination of principal parts—Cylinders 30-5-41 Slides 9-5-41 Covers 30-5-41
 Pistons 24-4-41 Piston Rods 25-7-41 Connecting rods 25-4-41
 Crank shaft 5-6-41 Thrust shaft 5-6-41 Intermediate shafts 5-5-41
 Tube shaft ✓ Screw shaft 5-5-41 Propellers 6-5-41 & 23-5-41
 Stern tube 1-5-41 Engine and boiler seatings Engines holding down bolts

Completion of fitting sea connections
 Completion of pumping arrangements Boilers fixed Engines tried under steam
 Main boiler safety valves adjusted Thickness of adjusting washers
 Crank shaft material Steel Identification Mark N° 9223 GAL Thrust shaft material Steel Identification Mark N° 5559 GAL
 Intermediate shafts, material Steel Identification Marks N° 5561 GAL Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material Steel Identification Mark N° 5560 GAL Steam Pipes, material Test pressure Date of Test

Is an installation fitted for burning oil fuel Is the flash point of the oil to be used over 150°F.
 Have the requirements of the Rules for the use of oil as fuel 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 Yes If so, state name of vessel R. Dunstons Yard N° 358 (Ch. no. 64073)
 General Remarks (State quality of workmanship, opinions as to class, &c. This engine has been constructed under special survey in accordance with the Society's Rules and approved plans, also in accordance with specifications.
 The materials and workmanship are good.
 The engine has been despatched to Thorne for installation in Messrs Richard Dunstons Yard N° 359

Note: Forging rpt for Screw shaft will be forwarded with rpt on Engine N° 1329.

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 13/8/41

The amount of Entry Fee ... £ 2 : - :
 Special $\frac{2}{5}$ of £ 21-5-0 ... £ 8 : 10 :
 Donkey Boiler Fee ... £ 2 : 2/6
 Travelling Expenses (if any) £ : :
 When applied for, 19 AUG 1941
 When received, 19
 Committee's Minute GLASGOW 19 AUG 1941
 Assigned Deferred.
 TUE. 28 OCT 1941
 Glasgow for sup. G. A. Loring
 Engineer Surveyor to Lloyd's Register of Shipping.

