

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office

Writing Report 19 When handed in at Local Office 27. 11. 1933 Port of Glasgow
 Survey held at Glasgow Date, First Survey 22. 2. 33 Last Survey 23-11- 1933
 on the new steel S/S "HARCALO" (Number of Visits 60) Tons { Gross 5081 Net 3033
 Port Glasgow By whom built Lithgows Ltd Yard No. 863 When built 1933
 Engines made at Glasgow By whom made Davie Rowan & Co Ltd Engine No. 958 When made 1933
 Boilers made at Glasgow By whom made Davie Rowan & Co Ltd Boiler No. 958 When made 1933
 Rated Horse Power Owners F & C Harrison Ltd Port belonging to London
 Horse Power as per Rule 444 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 for which Vessel is intended

TRIPLE EXPANSION
 Description of Engines Triple expansion Revs. per minute 60
 No. of Cylinders 3 No. of Cranks 3
 Length of Stroke 40"
 Shaft, dia. of journals as per Rule 13.24" as fitted 13 3/4" Crank webs Mid. length breadth 2 1/2" Thickness parallel to axis HP & MP 9"
 Crank pin dia. 13 3/4" Mid. length thickness MP & HP 9" shrunk Thickness around eye-hole 6 7/8"
 Intermediate Shafts, diameter as per Rule 12.61" as fitted 13 3/8" Thrust shaft, diameter at collars as per Rule 13.24" as fitted 13 3/4" Mitchell
 Shafts, diameter as per Rule 14.193 as fitted 14 3/4" Is the tube/screw shaft fitted with a continuous liner yes
 Liners, thickness in way of bushes as per Rule .73" as fitted 3/4" Thickness between bushes as per Rule .529" as fitted 1/16" Is the after end of the liner made watertight in the stern tube yes
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner -
 Does the liner 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
 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 yes
 If so, state type - Length of Bearing in Stern Bush next to and supporting propeller 5'0"
 Propeller, dia. 18'6" Pitch 20'0" No. of Blades 4 Material Bronze whether Moveable yes Total Developed Surface 92 sq. feet
 Pumps worked from the Main Engines, No. none Diameter - Stroke - Can one be overhauled while the other is at work -
 Pumps worked from the Main Engines, No. two Diameter 4 1/2" Stroke 27" Can one be overhauled while the other is at work yes
 No. and size 2 @ 4" - 9 1/2" x 21" Pumps connected to the Main Bilge Line { No. and size Ballast pump How driven steam
 How driven steam Lubricating Oil Pumps, including Spare Pump, No. and size -
 Independent means arranged for circulating water through the Oil Cooler - Suctions, connected to both Main Bilge Pumps and Auxiliary Pumps;—In Engine and Boiler Room 3 @ 3"

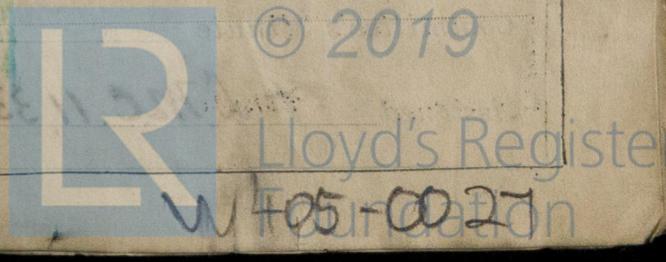
In Holds, &c. Nº1 hold 2 @ 3", Nº2 hold 2 @ 3 1/2", bottom bunker 2 @ 2"
Water tanks 1 @ 2 1/2", Nº3 hold - 1 @ 2 1/2", Nº4 hold - 2 @ 3", Tunnel well 1 @ 2 1/2", all fitted at ends
 Water Circulating Pump Direct Bilge Suctions, No. and size 1 @ 8" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 4 3/4" Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes yes
 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 yes
 Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks both
 Are they fitted sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the Overboard Discharges above or below the deep water line both
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate yes
 How are they protected under timber boards
 Pipes pass through the bunkers forward hold suction Have they been tested as per Rule -
 Pipes pass through the deep tanks -
 Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes
 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 bridge deck

NO BOILERS, &c.—(Letter for record (r)) Total Heating Surface of Boilers 6348
 Forced Draft fitted yes No. and Description of Boilers 2 SB & 1 auxy Working Pressure 220 lbs
 1 REPORT ON MAIN BOILERS NOW FORWARDED? yes
 1 DONKEY BOILER FITTED? no If so, is a report now forwarded? -
 Donkey boiler intended to be used for domestic purposes only -
 P.L.N.S. Are approved plans forwarded herewith for Shafting no Main Boilers yes Auxiliary Boilers yes Donkey Boilers ✓
 (If not state date of approval)
 Feeders no General Pumping Arrangements no Oil fuel Burning Piping Arrangements ✓

SPARE GEAR.
 Spare gear required by the Rules been supplied yes
 The principal additional spare gear supplied one screw shaft and two cast-iron propeller blades.

The foregoing is a correct description,
 For David Rowan & Co Ltd
 Arch. H. Grierson

Manufacturers.



1933 Feb: 22 Mar: 6, 13, 17, 23 Apr: 19 May: 8, 9, 11, 24, 29 June: 2, 6, 9, 15, 16, 21 July: 3, 31 Aug: 2, 8, 22, 24, 28 Sep: 7, 8, 12, 16, 18, 19, 20, 21, 22, 27, 28, 29 Oct: 3, 4, 5, 6, 7, 9, 10, 11, 12, 13, 17, 18, 19, 20, 23, 24, 25, 27, 30 Nov: 1, 3, 8, 9, 23

Dates of Survey while building: During progress of work in shops -- During erection on board vessel --

Total No. of visits: 60

Dates of Examination of principal parts—Cylinders 29-9-33 Slides 21-9-33 Covers 22-9-33
 Pistons 21-9-33 Piston Rods 3-10-33 Connecting rods 8-8-33
 Crank shaft 22-9-33 Thrust shaft 29-9-33 Intermediate shafts 20-9-33
 Tube shaft - Screw shaft 28-9-33 & 3-10-33 Propeller 27-9-33
 Stern tube 16-9-33 Engine and boiler seatings 29-9-33 Engines holding down bolts 30-10-33
 Completion of fitting sea connections 29-9-33
 Completion of pumping arrangements 9-11-33 Boilers fixed 8-11-33 Engines tried under steam 23-11-33
 Main boiler safety valves adjusted 9-11-33 Thickness of adjusting washers Pul. P 1/2 5/8, C. Pul. P 1/2 5/8, 9/16 P 1/2 5/8

Crank shaft material 9. Steel Identification Mark LLOYD'S N° 4510 L.C.D. 29-9-33
 Thrust shaft material 9. Steel Identification Mark LLOYD'S N° 4510 L.C.D. 29-9-33
 Intermediate shafts, material 9. Steel Identification Marks LLOYD'S N° 4510 L.C.D. 29-9-33
 Tube shaft, material - Identification Mark LLOYD'S N° 4510 L.C.D. 29-9-33
 Screw shaft, material 9. Steel Identification Mark LLOYD'S N° 4510 L.C.D. 28-9-33
 Steam Pipes, material Steel Test pressure 66 lb Date of Test 29-9-33

Is an installation fitted for burning oil fuel? Yes No
 Is the flash point of the oil to be used over 150°F? Yes No
 Have the requirements of the Rules for the use of oil as fuel been complied with? Yes No
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo? No Yes
 If so, have the requirements of the Rules been complied with? Yes No
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with? Yes No

Is this machinery duplicate of a previous case? Yes No
 If so, state name of vessel: "Harbory" G.L. Rpt. N° 539610

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The materials and workmanship are good.
 The machinery has been constructed under Special Survey and is eligible in my opinion for Classification and the record + L MC 11,33

27/11/33

The amount of Entry Fee ... £ 5 : :
 Special ... £ 91 : 12 :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 27.11.1933
 When received, 30.11.1933

S. C. Davis
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 28 NOV 1933

Assigned + L MC 11,33

Glasgow (in duplicate)

