

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office MAY 23 1940

Date of writing Report 14-5-1940 When handed in at Local Office 25 MAY 1940 Port of HULL
 No. in Survey held at Hull Date, First Survey 20-6-39 Last Survey 20-4-1940
 Reg. Book. on the H.M.S. "BIRCH" (Number of Visits 73) Tons { Gross 452 Net 144
 Built at Peverley By whom built Cook, Mellon + Gummell & Co Yard No. 652 When built 1940-4
 Engines made at Hull By whom made C.D. Holmes & Co Engine No. 1554 When made do
 Boilers made at do By whom made do Boiler No. do When made do
 Registered Horse Power 156 Owners The Admiralty Port belonging to do
 Nom. Horse Power as per Rule 156 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yr
 Trade for which Vessel is intended Yr

ENGINES, &c.—Description of Engines Triple Expansion CONTRACT Revs. per minute 160
 Dia. of Cylinders 13 1/2 - 23 - 32 Length of Stroke 27 No. of Cylinders 3 No. of Cranks 3
 Crank shaft, dia. of journals as per Rule 7.5" as fitted 7 7/8" Crank pin dia. 7 7/8" Crank webs Mid. length breadth shrunk Thickness parallel to axis 4 13/16"
 as fitted 7 7/8" Mid. length thickness shrunk Thickness around eye-hole 3 7/16" 3 15/16"
 Intermediate Shafts, diameter as per Rule 4.15" as fitted 4 1/4" Thrust shaft, diameter at collars as per Rule 7.5" as fitted 7 7/8"
 Tube Shafts, diameter as per Rule shrunk as fitted shrunk Screw Shaft, diameter as per Rule 8.2" as fitted 8 1/4" Is the { tube } shaft fitted with a continuous liner { No }
 as fitted shrunk as fitted shrunk Is the { screw } shaft fitted with a continuous liner { No }
 Bronze Liners, thickness in way of bushes as per Rule shrunk as fitted shrunk Thickness between bushes as per Rule shrunk as fitted shrunk Is the after end of the liner made watertight in the propeller boss Yr
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yr
 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 Yr
 If two liners are fitted, is the shaft lapped or protected between the liners Yr Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft Yr If so, state type crank Length of Bearing in Stern Bush next to and supporting propeller 36 1/2"

Propeller, dia. 105" Pitch 9'-4" No. of Blades 3 Material C-1 whether Moveable Solid Total Developed Surface 30 sq. feet
 Feed Pumps worked from the Main Engines, No. 2 Diameter 2 1/2" Stroke 15" Can one be overhauled while the other is at work Yr
 Bilge Pumps worked from the Main Engines, No. 2 Diameter " Stroke " Can one be overhauled while the other is at work "
 Feed Pumps { No. and size One 4 x 6 x 12 Weirs } Pumps connected to the { No. and size One - 6 x 5 1/2 x 15" Weirs } Donkey pumps.
 How driven Independent Steam Main Bilge Line { How driven Independent Steam }
 Ballast Pumps, No. and size None Lubricating Oil Pumps, including Spare Pump, No. and size None

Are two independent means arranged for circulating water through the Oil Cooler None Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room Engine Room 2 @ 2" dia + one @ 2 1/4" dia Boiler Room 2 @ 2" dia
 In Pump Room Yr In Holds, &c. One @ 2" dia in each of the following:—Fore peak, Chain locker, Ashho space, Magazine, Bunker, Shaft space, & After peak + Spent Rooms

Main Water Circulating Pump Direct Bilge Suctions, No. and size One - 5" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size One @ 2 1/4" included above Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yr
 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 Yr
 Are all Sea Connections fitted direct on the skin of the ship Yr Are they fitted with Valves or Cocks Yr
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yr Are the Overboard Discharges above or below the deep water line Above
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yr Are the Blow Off Cocks fitted with a spigot and brass covering plate No
 What Pipes pass through the bunkers Feed tank suction How are they protected Wood casing
 What pipes pass through the deep tanks None Have they been tested as per Rule Yr
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yr
 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 Yr Is the Shaft Space watertight Yr Is it fitted with a watertight door No worked from Access from flat above

MAIN BOILERS, &c.—(Letter for record S) Total Heating Surface of Boilers 2650
 Which Boilers are fitted with Forced Draft Yr Which Boilers are fitted with Superheaters None
 No. and Description of Boilers One - S.B. Working Pressure 200 lb/0"
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yr
 IS A DONKEY BOILER FITTED? No If so, is a report now forwarded? Yr
 Can the donkey boiler be used for domestic purposes only Yr

PLANS. Are approved plans forwarded herewith for Shafting 17-7-39 Main Boilers 17-7-39 Auxiliary Boilers Yr Donkey Boilers Yr
 (If not state date of approval)
 Superheaters Yr General Pumping Arrangements 17-10-39 Oil fuel Burning Piping Arrangements Yr

SPARE GEAR.
 Has the spare gear required by the Rules been supplied Yr
 State the principal additional spare gear supplied See attached lists

The foregoing is a correct description FOR CHARLES D. HOLMES & CO., LTD.

Manufacturer.



Rpt. 5
 Date of ...
 No. in ...
 Built ...
 Engines ...
 Boilers ...
 Nominal ...
 MUL ...
 Manufa ...
 Total H ...
 No. and ...
 Tested ...
 Area of ...
 Area of ...
 In case ...
 Smalles ...
 Smalles ...
 Largest ...
 Thickne ...
 long. se ...
 Percen ...
 Percen ...
 Thickn ...
 Materi ...
 Length ...
 Dimen ...
 End p ...
 How a ...
 Tube ...
 Mean ...
 Girder ...
 at cen ...
 in eac ...
 Tensil ...
 Pitch ...
 Front ...
 Thick ...
 Pitch ...
 Main ...
 Diam ...
 Screw ...
 Diam ...

1939. JUNE 20, AUG. 15, SEP. 5, 6, 11, 20, 21, 26, 27, OCT. 3, 5, 7, 9, 11, 14, 17, 18, 19,
 During progress of work in shops -- 23, 24, 26, NOV. 1, 6, 7, 8, 15, 24, 27, 28, DEC. 4, 6, 7, 9, 13, 14, 15, 18, 21, 28 --
 Dates of Survey while building } During erection on board vessel --- 1940. JAN. 2, 4, 5, 10, 11, 15, 17, 18, 19, 19, 20, 22, 25, 25, 29, FEB. 1, 2, 5, 8, MAR. 8,
 11, 20, 28, 30, APR. 1, 3, 5, 6, 11, 15, 16, 17, 18, 20.
 Total No. of visits 73.
 Dates of Examination of principal parts—Cylinders 26-10-39 Slides 14-10-39 Covers 14-10-39
 Pistons 14-10-39 Piston Rods 20-10-39 Connecting rods 20-10-39
 Crank shaft 6-11-39 Thrust shaft 26-9-39 Intermediate shafts 21-9-39
 Tube shaft ✓ Screw shaft 7-10-39 Propeller 11-11-39
 Stern tube 11-11-39 Engine and boiler seatings 11-11-39 Engines holding down bolts 2-1-40
 Completion of fitting sea connections 11-11-39
 Completion of pumping arrangements 8-1-40 Boilers fixed 2-1-40 Engines tried under steam 17-4-40
 Main boiler safety valves adjusted 2-2-40 Thickness of adjusting washers Both 3/8"
 Crank shaft material Steel Identification Mark 1714 AEG 21-7-39 1600 JD 17-8-39 Thrust shaft material Steel Identification Mark 1711 AEG 21-7-39
 Intermediate shafts, material Steel Identification Marks 1444 DLHC 6-11-39 Tube shaft, material ✓ Identification Mark ✓
 Screw shaft, material Steel Identification Mark 1735 AEG 9-9-39 Steam Pipes, material Steel Test pressure 600 lbs Date of Test 11-1-40
 Is an installation fitted for burning oil fuel No. 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 No. 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 STANDARD ADMIRALTY TRAWLER.

General Remarks (State quality of workmanship, opinions as to class, &c.)
 The Machinery of this vessel has been constructed & fitted on board in accordance with the approved Admiralty plans, the specifications & the Society's Rules. The workmanship & materials are good & when tried under full working conditions at sea it was found satisfactory in every respect. An IHP of 770 @ 166 R.P.M. was obtained on trials, but in view of the contract R.P.M. of 160. The engines were never opened out. A similar vessel shortly after this obtained 1023 IHP @ 181 R.P.M. The contract IHP is 850.

This vessel is eligible, in my opinion, when classed to have the record of L.M.C. 4-40 + O.G. + the notation T. 3 Cy. 13 1/2, 23438-27 - 200 lb. 156 NHP., I.S.B. 3 cf. G.S 63. H.S. 2650 F.D.

The amount of Entry Fee ... £ : : When applied for,
 Special ... £ 90 : 0 : 21.5.1940.
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ : : 13/6/1940 Recd 7/6

D. J. McAlister
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute THE 4 JUN 1940
 Assigned + Lamb 4.40
 J.D., O.P.



Certificate to be sent to The Surveyors are requested not to write on or below the space for Committee's Minutes.