

REPORT ON MACHINERY.

No. 19719

Received at London Office

Date of writing Report 27 FEB 1917 When handed in at Local Office 27 FEB 1917 Port of London

No. in Survey held at Wivenhoe Date, First Survey 20th Jan 1916 Last Survey 1917
Reg. Book. on the Motor Coaster "LEE LEE" (Number of Visits 8)

Master Built at Wivenhoe By whom built Pennie Louette's Shipbuilding Co When built 1914
Engines made at Stockholm By whom made J. & C. G. Bolinder's Co Ltd. when made 1915

Boilers made at By whom made when made
Horse Power 120 Owners James Pollock Sons Co Ltd. Port belonging to London

Nom. Horse Power as per Section 28 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c.—Description of Engines Bolinder's two stroke cycle, reversible. (See Stockholm report N^o 1458) No. of Cylinders 2 No. of Cranks 2
Dia. of Cylinders 15" Length of Stroke 16 1/2" Revs. per minute Dia. of Screw shaft 5.5" Material of screw shaft Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No liner Is the after end of the liner made water tight in the propeller boss If the liner is in more than one length are the joints burned 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 Length of stern bush 1-11 1/2"

Dia. of Tunnel shaft INT 5" as per rule 4.86" Dia. of Crank shaft journals 5.5" as per rule 5.5" Dia. of Crank pin 6.1" Size of Crank webs 8.66 x 3.66" Dia. of thrust shaft under collars as fitted 5" as fitted 5.7" Dia. of screw 4-8" Pitch of Screw 3-6" No. of Blades 3 State whether moveable No Total surface 8.8

No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work
No. of Bilge pumps one Diameter of ditto 4" Stroke 5" Can one be overhauled while the other is at work

No. of Donkey Engines attached to bilge Sizes of Pumps 3 1/2 x 3" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room Two 2" dia. In Holds, &c. Three 2" dia. aft peak 2" dia.

No. of Bilge Injections sizes Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size Yes 2" dia.
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks cock
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above

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
What pipes are carried through the bunkers How are they protected

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record) Manufacturers of Steel

Total Heating Surface of Boilers Is Forced Draft fitted No. and Description of Boilers
Working Pressure Tested by hydraulic pressure to Date of test No. of Certificate

Can each boiler be worked separately Area of fire grate in each boiler No. and Description of Safety Valves to each boiler Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers Length Material of shell plates

Thickness Range of tensile strength Are the shell plates welded or flanged Descrip. of riveting: cir. seams

long. seams Diameter of rivet holes in long. seams Pitch of rivets Lap of plates or width of butt straps

Per centages of strength of longitudinal joint rivets Working pressure of shell by rules Size of manhole in shell

Size of compensating ring No. and Description of Furnaces in each boiler Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top If stays are fitted with nuts or riveted heads Working pressure by rules End plates in steam space:

Material of stays Area at smallest part Area supported by each stay Working pressure by rules Material of stays

Material Thickness Pitch of stays How are stays secured Working pressure by rules Material of Front plates at bottom

Area at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom Working pressure of plate by rules

Thickness Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes Pitch of tubes Material of tube plates Thickness: Front Back Mean pitch of stays

Pitch across wide water spaces Working pressures by rules Girders to Chamber tops: Material Depth and thickness of girder at centre Length as per rule Distance apart Number and pitch of stays in each % of strength of joint

Working pressure by rules Steam dome: description of joint to shell Diam. of rivet holes

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to

Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler

Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED? ✓

If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied:— 2 connecting rod top end bolts & nuts, 2 connecting rod bottom end bolts & nuts, 6 coupling bolts, 2 sets of helge pump valves, 3 bolts & nuts for upper end of cylinder, 1 bolt & nut for bottom end of cylinder, 1 bolt & nut for the eccentric rod, 1 bolt & nut for tilting arm, 1 bolt & nut for regulator weight, 2 bolts & nuts for main bearing, 1 pressure valve for circulating pump. + ditto for section pp. + ignition bulb.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building: During progress of work in shops - - 1916, Jan 20, Aug 30, Sept 5, Nov 24, Dec 8 (1917) Jan 4, 18 Feb 6. During erection on board vessel - - - 8. Total No. of visits 8. Is the approved plan of main boiler forwarded herewith " " " donkey " " "

Dates of Examination of principal parts—Cylinders ✓ Slides ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓ Crank shaft ✓ Thrust shaft ✓ INT^E shaft 24-11-16 Screw shaft 28-12-17 Propeller ✓ Stern tube ✓ Steam pipes tested ✓ Engine and boiler seatings 8-12-16 19-12-16 Engines holding down bolts 19-12-16 Completion of pumping arrangements 4-1-17 Boilers fixed ✓ Engines tried under working conditions 6-2-17 Completion of fitting sea connections 5-9-16 Stern tube 5-9-16 Screw shaft and propeller 5-9-16 Main boiler safety valves adjusted ✓ Thickness of adjusting washers ✓ Material of Crank shaft ✓ Identification Mark on Do. ✓ Material of Thrust shaft ✓ Identification Mark on Do. ✓ Material of INT^E shaft Steel Identification Marks on Do. No 511 Art 5 Material of Screw shaft Steel Identification Marks on Do. Ditto Material of Steam Pipes ✓ Test pressure ✓

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 Section 49 of the Rules been complied with ✓ Is this machinery duplicate of a previous case Yes ✓ If so, state name of vessel S.S. "Cristo" ✓

General Remarks (State quality of workmanship, opinions as to class, &c.) The Engines surveyed whilst being fitted on board the vessel and found satisfactory, the fuel and feed tanks tested by hydraulic pressure to 10 lbs per sq. inch and found satisfactory. The Engines tried under full power and worked smoothly & well, the speed of the vessel on trial trip was 7 3/4 knots per hour, revolutions 250. lowest number of revolutions for manouevring purposes 132. All the rule requirements for internal combustion engines have been carried out, & is in my opinion eligible for the record of + L.M.C. 2-17 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 2.17.

Oil Engines 2 1/2" - 16 1/8" 2 S.C. S.A. J & C.G. Bolinders. Ld. Skm. (Annual Survey) J.W.D. 28/2/17.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ 1 - 0 - 0 } When applied for, 27 FEB 1917
Special Stockholm report £ 2 - 13 - 4 }
Donkey Boiler Fee ... £ 1 - 12 - 8 } When received, 20-3-1917
Travelling Expenses (if any) £ X - X - X }

A.G. Farminer
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 9-MAR. 1917
Assigned + L.M.C. 2 17
oil engines

TUE. 14 JAN. 1919
FRI. AUG. 13 1919
FRI. 31 AUG. 1917
TUE. 20 OCT. 1920
FRI. NOV. 23 1917
Lloyd's Register Foundation