

REPORT ON MACHINERY.

No. 13290

Received at London Office

MON. 7 MAY. 1923

Date of writing Report 10 When handed in at Local Office 5. 5. 1923. Port of Aberdeen
 No. in Survey held at Aberdeen Date, First Survey 15. 1. 21. Last Survey 25. 4. 1923.
 Reg. Book. on the S.S. "COPTHORNE." (Number of Visits 50) Tons } Gross 1450
 Net 884.

Master Built at Aberdeen By whom built John Lewis & Sons Ltd. No 94 When built 1923.

Engines made at Aberdeen By whom made John Lewis & Sons Ltd. No 164 when made 1923.

Boilers made at do. By whom made do do No 129 & 30 when made 1923.

Registered Horse Power 148. Owners C. Y. Lindley. Port belonging to London.

Nom. Horse Power as per Section 28 148. 179. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted no.

ENGINES, &c.—Description of Engines Triple Expansion. No. of Cylinders 3. No. of Cranks 3.

Dia. of Cylinders 18 1/4", 28 1/2", 48 1/4" Length of Stroke 33" Revs. per minute 84. Dia. of Screw shaft as per rule 9. 88. Material of screw shaft S.
 as fitted 10 1/4"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube yes. Is the after end of the liner made water tight in the propeller boss yes. If the liner is in more than one length are the joints burned 1 length. 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 no space. If two liners are fitted, is the shaft lapped or protected between the liners yes. Length of stern bush 3' 5"

Dia. of Tunnel shaft as per rule 8. 98. 9. Dia. of Crank shaft journals as per rule 9. 438. Dia. of Crank pin 9 5/8" Size of Crank webs 6 3/4" x 1 1/2" Dia. of thrust shaft under collars 9 5/8" Dia. of screw 1 1/2" 10" Pitch of Screw 14' 6" No. of Blades 4. State whether moveable no. Total surface 56. 7

No. of Feed pumps 2. Diameter of ditto 3 3/8" Stroke 16" Can one be overhauled while the other is at work yes.

No. of Bilge pumps 2. Diameter of ditto 3 3/8" Stroke 16" Can one be overhauled while the other is at work yes.

No. of Donkey Engines 2. Sizes of Pumps BALLAST. 8" x 9" x 8" DUPLEX No. and size of Suctions connected to both Bilge and Donkey pumps GENERAL. 6" x 4" x 6"

In Engine Room 3 of 2 1/2" Tunnel well 1 of 2 1/2" In Holds, &c. No 1 HOLD. 2 of 2 1/2"

No. of Bilge Injections 1. sizes 6. Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 4"

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 none.

Are all connections with the sea direct on the skin of the ship yes. Are they Valves or Cocks Both valves & cocks.

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 yes.

What pipes are carried through the bunkers bilge suction from forehold. How are they protected Strong wood casing.

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 yes. Is it fitted with a watertight door yes. worked from upper grating in eng room.

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel B. Colville & Sons Ltd + Steel Coy of Scotland Ltd.

Total Heating Surface of Boilers 3236. 7 Is Forced Draft fitted no. No. and Description of Boilers 2. Single ended (Nos 129 & 30)

Working Pressure 180 lbs. Tested by hydraulic pressure to 320. Date of test 130. 19. 22. No. of Certificate Nos 129-1613. 130-1014.

Can each boiler be worked separately yes. Area of fire grate in each boiler 52. 147. 7 No. and Description of Safety Valves to each boiler 2. direct spring Area of each valve 5. 9. 0. Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork about 4" INTERNAL Mean dia. of boilers 13. 0" Length 10. 6" Material of shell plates S.

Thickness 1 1/8" Range of tensile strength 28-32. Are the shell plates welded or flanged no. Descrip. of riveting: cir. seams d. r. lap.

long. seams TR. D.B.S. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 1 ROW. 8 1/2" 4 3/8" Lap of plates or width of butt straps 14 3/8" x OUT. 2 1/2"

Per centages of strength of longitudinal joint rivets 88. 9. Working pressure of shell by rules 193. Size of manhole in shell 16" x 12" plate 85. 6.

Size of compensating ring 4" x 1 1/4" No. and Description of Furnaces in each boiler 3. plain. Material S. Outside diameter 39 1/2"

Length of plain part top 82" Thickness of plates crown 3 1/4" Description of longitudinal joint weld. No. of strengthening rings 1. angle 3 1/2" x 3 1/2" x 3 1/2" bottom 45"

Working pressure of furnace by the rules 180. Combustion chamber plates: Material S. Thickness: Sides 1 1/16" Back 3/16" Top 1/16" Bottom 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 9 1/2" x 8" Top 9 1/2" x 4 1/2" If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 192. 9

Material of stays S. Area at smallest part 1. 46. 0." Area supported by each stay 46. 0." Working pressure by rules 185. End plates in steam space: Material S. Thickness 1 1/8" Pitch of stays 18" x 18" How are stays secured D. N. & W. Working pressure by rules 185. Material of stays S.

Area at smallest part 6. 33. 0." Area supported by each stay 324. 0." Working pressure by rules 203. Material of Front plates at bottom S.

Thickness 1 1/2" Material of Lower back plate S. Thickness 3/32." Greatest pitch of stays 14 1/4" Working pressure of plate by rules 193.

Diameter of tubes 3 1/2" EXT. Pitch of tubes 4 3/4" x 4 3/4" Material of tube plates S. Thickness: Front 1 1/32" Back 3/32" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14 1/2" Working pressures by rules F. 181. 2. S. 282. 7 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 8 1/4" x 1 1/8" Length as per rule 24 1/2" Distance apart 4 1/2" Number and pitch of stays in each two. 9 1/2"

Working pressure by rules 219. Steam dome: description of joint to shell NONE. % of strength of joint ✓

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 NONE. 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? **NO.**

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— Two top, + 2 bottom end bolts nuts; 2 main bearings + 1 set coupling bolts nuts; 1 set each, Air, Feed + Bilge pump valves; 1 each, main + donkey check valve; 2 safety valve springs; 1 escape valve spring each size; 6 boiler tubes 6 condenser tubes ferrules; bolts nuts assorted, and iron of various sizes. 1 propeller, bored + keyway cut.

The foregoing is a correct description,
FOR JOHN LEWIS & SONS, LTD.,

John J. Donald
Esq.

Manufacturers of main engines + boilers.

Dates of Survey while building
During progress of work in shops - - - 1921 Jan 15, 17, 26, 29 - Oct 18 - Nov 25 - Dec 14 - 1922 Jan 9, 14, 22 - Feb 4, 9, 15, 21, 23, 24 - Mar 15, 23 - Apr 6, 19 - Aug 1, 14, 21, 26 - Sep 15
During erection on board vessel - - - 1923 Oct 25 - Nov 8, 21, 23 - Dec 5, 15, 24 - 1923 Jan 5, 18 - Feb 6, 8, 19, 23, 28 - Mar 5, 13, 19, 24, 27, 29, 31 - Apr 3, 4, 9, 10, 11, 19, 20, 24, 25
Total No. of visits **55**

Is the approved plan of main boiler forwarded herewith **yes.**
" " " donkey " " "

Dates of Examination of principal parts—Cylinders 19.2.23 Slides 6.2.23 Covers 19.2.23 Pistons 19.2.23 Rods 28.2.23
Connecting rods 28.2.23 Crank shaft 23.1.22 Thrust shaft 15.1.21 Tunnel shafts 15.1.21 Screw shaft 15.1.21 Propeller 24.3.23
Stern tube 24.3.23 MAIN Steam pipes tested 19.4.23 Engine and boiler seatings 24.3.23 Engines holding down bolts 10.4.23
Completion of pumping arrangements 10.4.23 Boilers fixed 10.4.23 Engines tried under steam 25.4.23
Completion of fitting sea connections 24.3.23 Stern tube 29.3.23 Screw shaft and propeller 29.3.23
Main boiler safety valves adjusted 25.4.23 Thickness of adjusting washers Port boiler: $9\frac{3}{8}$ Full S $3\frac{3}{8}$ Star boiler $9\frac{3}{8}$ S $3\frac{3}{8}$

Material of Crank shaft **S** Identification Mark on Do. **N^o 5227 LTM** Material of Thrust shaft **S** Identification Mark on Do. **1344A**

Material of Tunnel shafts **S** Identification Marks on Do. **SEE BELOW** Material of Screw shafts **S** Identification Marks on Do. **1346A**

Material of Steam Pipes **Copper solid drawn 3/2 bore No. 4 I.M.R.** Test pressure **360 lbs per sq inch**

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 Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case **yes.** If so, state name of vessel **"Maud Stewellyn" Abn + Rep No 12774**

General Remarks (State quality of workmanship, opinions as to class, &c. **These engines and Boilers have been constructed under special survey, and in accordance with the Secretary's letter, the Rules, and approved plans. The materials and workmanship are good. When completed and properly fitted on board they were tried under steam with satisfactory results, and are now in good order, and in my opinion entitled to the record + L.M.C. 4.23 in the Register Book.**

* Intermediate shafting Identification Nos. **1342A - 1343A - 1344A - 1345A**

It is submitted that
this vessel is eligible for
THE RECORD. + LMC 4.23. CL.

Ridley Howell
7/5/23
Engineer Surveyor to Lloyd's Register of Shipping.

The amount of Entry Fee ... £ **3** : : When applied for,
Special ... £ **44 : 10** : : **5.5.1923**
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ : : **1/2/23**

Committee's Minute
Assigned **+ LMC 4.23**
C.L.
TUE. 8 MAY. 1923

Certificate (if required) to be sent to Aberdeen Office.

The Surveyors are requested not to write on or below the space for Committee's Minute.

