

FRI, SEP 14 1900

Received at London Office.....18

ENGINES, &c.—Description of Engines *See Compound.* No. of Cylinders *3.* No. of Cranks *3.*
 Dia. of Cylinders *24½", 44", 45"* Length of Stroke *48"* Revs. per minute *78.* Dia. of Screw shaft *as per rule 14.12*
as per rule 12.44 Dia. of Tunnel shaft *as fitted 15"* Lgth. of stern bush *5' 3½"*
 Dia. of Crank shaft journals *as per rule 13.45* Dia. of Crank pin *14½"* Size of Crank webs *23" x 16"* Dia. of thrust shaft under
as fitted 13¼" collars *14½"* Dia. of screw *18' 6"* Pitch of screw *16' 0"* No. of blades *4* State whether moveable *no.* Total surface *95 #*
 No. of Feed pumps *2.* Diameter of ditto *4'* Stroke *24"* Can one be overhauled while the other is at work *yes.*
 No. of Bilge pumps *2.* Diameter of ditto *4½"* Stroke *24"* Can one be overhauled while the other is at work *yes.*
 No. of Donkey Engines *3.* Sizes of Pumps *Feed... 7½" x 5" x 6". Duplex. Ballast... 8" x 9" x 10" — " —* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Three. 3½" dia. & one 6" cattle 5½" x 4" x 6" — " —* In Holds, &c. *Two 3½" in each hold, and*
one 2½" in after well.
 No. of bilge injections *1.* sizes *8"* Connected to condenser, or to circulating pump *C. P.* Is a separate donkey suction fitted in Engine room & size *yes: 6"*
 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.*
 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 *none.* 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.*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *new vessel.* Is the screw shaft tunnel watertight *yes.*
 Is it fitted with a watertight door *yes* worked from *upper platform*

BOILERS, &c. — (Letter for record (S.)) Total Heating Surface of Boilers 7242 # Is forced draft fitted yes. Howard

No. and Description of Boilers 3. Cyl. mult^r. Single ended. Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs.

Dates of test (1) 28.6.00 (2) 19.4.00 Can each boiler be worked separately yes. Area of fire grate in each boiler 5.3 # No. and Description of safety valves to each boiler Two: spring loaded Area of each valve 9.62 sq" 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 no side bunkers Mean dia. of boilers 14' 6" Length 12' 0" Material of shell plates S.

Thickness 5/16" Range of tensile strength 29-32 Are they welded or flanged no Descrip. of riveting: cir. seams a. r. lap. long. seams dbl. straps.

Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 1 1/2" 2 rows 4 3/4" Lap of plates or width of butt straps 1' 10" x 1 1/4" thick.

Per centages of strength of longitudinal joint 88.2 Working pressure of shell by rules 210 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 34 1/2 x 29 x 1 5/8" No. and Description of Furnaces in each boiler 3. Morrison. Material S. Outside diameter 45 3/4"

Length of plain part top 8.3 Thickness of plates crown 2" bottom 1 7/8" Description of longitudinal joint weld. No. of strengthening rings ✓

Working pressure of furnace by the rules 192.6 Combustion chamber plates: Material S. Thickness: Sides 19/32" Back 19/32" Top 12/32" Bottom 1 1/8"

Pitch of stays to ditto: Sides 4 1/8" x 4" Back 4 1/8" x 4 1/8" Top 4 1/8" x 4 1/8" If stays are fitted with nuts or riveted heads nuts. Working pressure by rules 196.5

Material of stays S. Diameter at smallest part 1 3/8" Area supported by each stay 62 sq" Working pressure by rules 193.5 End plates in steam space:

Material S. Thickness 1 1/8" Pitch of stays 15 3/4" x 14 5/8" How are stays secured S. N. W. Working pressure by rules 231.4 Material of stays S.

Diameter at smallest part 2 1/2" Area supported by each stay 220 sq" Working pressure by rules 219.3 Material of Front plates at bottom S.

Thickness 1 3/8" Material of Lower back plate S. Thickness 1 5/8" Greatest pitch of stays 1/4 2 1/8" x 4 1/8" Working pressure of plate by rules 221.4

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

Pitch across wide water spaces 13 1/2" Working pressures by rules 194.4 13.258.4 Girders to Chamber tops: Material S. Depth and thickness of girder at centre 9" x 1 1/2" Length as per rule 30" Distance apart 4 1/8" Number and pitch of Stays in each 2: 4 1/8"

Working pressure by rules 232.4 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓

If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓

Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

HP1-390-0005

SPARE GEAR. State the articles supplied:— Piston require 4000, and in addition 1 propeller;
1 tail shaft, $\frac{1}{2}$ set each Air & Circ: pump valves, 1 set each Feed, Bilge, & Donkey
pump valves, 2 rings for piston valves, 1 set Ramsbottom rings N.P. piston, 1 set Springs
L.P. piston, 1 Safety valve spring, 1 escape valve spring each size, bolts & nuts assorted
The foregoing is a correct description, & iron of various sizes.
FOR SIR CHRISTOPHER FURNESS, WESTGARTH & CO., LD. Manufacturers of Engines & Marine Boilers.

General Remarks (State quality of workmanship, opinions as to class, &c. The Engines, and Boilers, of this vessel, have been constructed under Special Survey, & in accordance with Rule requirements. The materials, and workmanship are good. When completed, and fitted on board, they were tried under steam at moorings with satisfactory results, and are now, in good working order, and in our opinion eligible for the notation **L.M.C. 9.00** in the Society's Register Books.

A No. 8 Refrigerating engine has been fitted in the engine room by Messrs. J. & E. Hall of London, without any request for the Survey.

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 9. 00. F.D. Ref Ind? 1/2

14. 9. 00

E.S.
14.9.00

Mr. Sidney Powell. Richard Birch
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI. 14 SEP 1960

+2hca 00

MACHINERY CERTIFICATE
WRITTEN.



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