pt. 4.

No. 21320.

REPORT ON MACHINERY.

FRI. 1 MAY 1903

Port of Sunderland Received at London Office 19

No. in Reg. Book. Survey held at Sunderland Date, first Survey Feb. 23rd Last Survey Apl 25th 1903.
(Number of Visits 11)

on the S. S. "Hermod" Tons Gross 2994. Net 1936.

Master A. Gabriellii Built at Sunderland By whom built J. L. Thompson & Sons Ld When built 1903

Engines made at Sunderland By whom made Geo. Clark Ld when made 1903

Boilers made at Sunderland By whom made Geo. Clark Ld when made 1903.

Registered Horse Power Owners Brunsgaard Kjosterudz & Co Port belonging to Drammen

Com. Horse Power as per Section 28 287·8 Is Refrigerating Machinery fitted No Is Electric Light fitted No

---

ENGINES, &c.—Description of Engines Tri compound No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 24" - 39" & 65" Length of Stroke 42" Revs. per minute 70 Dia. of Screw shaft as per rule 12·59 as fitted 13 3/8" Lgth. of stern bush 4'-5 1/2"

Dia. of Tunnel shaft as per rule 11·74 as fitted 11 7/8" Dia. of Crank shaft journals as per rule 12·36 as fitted 12 1/2" Dia. of Crank pin 12 1/2" Size of Crank webs 1'-5 1/2" x 8 1/4" Dia. of thrust shaft under collars 12 7/8" Dia. of screw 16·3 Pitch of screw 17'-0" No. of blades 4 State whether moveable No Total surface 77 ft

No. of Feed pumps 2 Diameter of ditto 3 Stroke 26" Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 1/4 Stroke 26" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps Feed 6x4x6 duplex No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Two 3" dia: One 3 1/2 Ballast 9x11x10 In Holds, &c. Two in each hold 3" dia:

No. of bilge injections 1 sizes 5 1/2 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 Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Bottl

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 top platform

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 4230 ft Is forced draft fitted No

No. and Description of Boilers Two Ordinary Marine Type Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 23-3-03 Can each boiler be worked separately Yes Area of fire grate in each boiler 63·37 No. and Description of safety valves to each boiler Two Spring Loaded Area of each valve 8·940" Pressure to which they are adjusted 180 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 20" Mean dia. of boilers 15'-3 1/2" Length 10'-6" Material of shell plates S

Thickness 1 Range of tensile strength 28 1/2-32 Are they welded or flanged flanged Descrip. of riveting: cir. seams D.R.L. long. seams T.R.D.B.S.

Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 5/16 ~~Lap of plates~~ or width of butt straps 19"

Percentages of strength of longitudinal joint rivets 88·5 plate 84·9 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 13"

Size of compensating ring 9" x 1 1/4 No. and Description of Furnaces in each boiler 4 Plain Material S Outside diameter 3'-4 1/2"

Length of plain part top 6-2 1/4 bottom 6-2 1/4 Thickness of plates crown 3/4 bottom 3/4 Description of longitudinal joint Welded No. of strengthening rings One

Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material S Thickness: Sides 11/16 Back 3/4 & 11/16 Top 11/16 Bottom 1

Pitch of stays to ditto: Sides 9 x 10 Back 11 1/4 x 9 3/8 Top 10 1/2 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 180 lbs

Material of stays S Diameter at smallest part 1 5/8 Area supported by each stay 90 Working pressure by rules 193 lbs End plates in steam space:

Material S Thickness 1 11/32 Pitch of stays 22 3/4 x 19 1/2 How are stays secured Double nuts Working pressure by rules 180 lbs Material of stays S

Diameter at smallest part 3 1/8 Area supported by each stay 370 Working pressure by rules 190 lbs Material of Front plates at bottom S

Thickness 13/16 Material of Lower back plate S Thickness 7/8 Greatest pitch of stays 14 1/4 x 9 3/8 Working pressure of plate by rules 182 lbs

Diameter of tubes 3 1/4 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates S Thickness: Front 1 1/64 Back 3/4 & 1/64 Mean pitch of stays 9" x 10 15/16

Pitch across wide water spaces 14 1/4" Working pressures by rules 183 lbs Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 1/4 & 8 1/4 Length as per rule 32 Distance apart 10 1/2 x 9 Number and pitch of Stays in each 3, 8" pitch

Working pressure by rules 185 lbs 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 —

Is it 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 —

DONKEY BOILER— No. 1 Description Cyl: Multitubular 2 plain furnaces

Made at Stockton By whom made J. Sudron & Co Ld When made 1903 Where fixed On deck

Working pressure 90lbs tested by hydraulic pressure to 180lbs No. of Certificate 2917 Fire grate area 25 sq ft Description of safety valves Direct Spring

No. of safety valves 2 Area of each 5·9 Pressure to which they are adjusted 90lbs If fitted with easing gear Yes If steam from main boilers can enter the donkey boiler No Dia. of donkey boiler 8'-6" Length 9'-0" Material of shell plates S Thickness 1/2" Range of tensile strength 27/32 Descrip. of riveting long. seams T. R. Lap Dia. of rivet holes 13/16" Whether punched or drilled Drilled Pitch of rivets 2 Rows 4 1/4 - 1 Row 2 1/8

Lap of plating 6 5/8" Per centage of strength of joint Rivets 83 Plates 80·8 Thickness of shell ~~crown~~ end plates Top 29/32 - 29/32 Bottom 11/16 - 9/16 Radius of do. 17" x 11" pitch No. of Stays to do. 6 - in 2 rows

Dia. of stays. 2 1/16" off Diameter of furnace ~~Top~~ 30" Bottom 7'-7" Length of furnace 5'-8" Thickness of furnace plates 1/2" Description of joint Weld. Thickness of ~~furnace crown~~ C. C. plates 9/16" Stayed by 1 1/2" x 1 3/8" L.S. riveted Working pressure of shell by rules 92·4 lbs

Working pressure of furnace by rules 98·4 lbs Diameter of ~~uptake~~ tubes 3" Thickness of ~~uptake~~ tube plates F 11/16 B. 11/16 Thickness of ~~stay~~ stay tubes 5/16"

SPARE GEAR. State the articles supplied :— Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, coupling bolts & nuts feed & bilge pump valves, iron bolts & nuts assorted.

The foregoing is a correct description,

Manufacturer. J. Lewis Engine Works.

Dates of Survey while building — During progress of work in shops - - 1902. Feb. 23 24. Mch. 3. 11. 13. 18. 21 24. 26. 27. Apl. 25

During erection on board vessel - -

Total No. of visits 11

Is the approved plan of main boiler forwarded herewith Yes

" " " donkey " " " Yes

General Remarks (State quality of workmanship, opinions as to class, &c.)

Material of screw shaft Wrought Iron 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 one 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 If two liners are fitted, is the shaft lapped or protected between the liners —

The machinery of this vessel has been constructed under Special Survey; the material and workmanship being good and efficient, and the engines when tried under steam worked satisfactorily.

The pumps, watertight doors & steam steering gear are in efficient working order, and the main steam pipes have been tested by hydraulic pressure to 400 lbs per square inch.

In my opinion this vessel is eligible for the notification in the Register Book of ✠ LMC 4-03.

It is submitted that this vessel is eligible for THE RECORD. ✠ LMC 4.03.

Bal 1.5.03.

J.C. 1.5.03

(Certificate (b) required) to be sent to Sunderland.

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

The amount of Entry Fee .. £ 2 : : When applied for, 30 Apl 1903

Special .. .. .. £ 34 4 : :

Donkey Boiler Fee .. .. £ : : When received, 7.5.03

Travelling Expenses (if any) £ : :

4.5.03

P. R. Salmon.

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute FRI. 1 MAY 1903

Assigned ✠ LMC 4 03

MACHINERY CERTIFICATE WRITTEN.