

REPORT ON MACHINERY.

Port of Sunderland.

14 JUN. 92

No. in Survey held at S. land.Date, first Survey January 21/92

Received at London Office

Last Survey May 31/91 18 92

Reg. Book.

(Number of Visits 29)

on the

S/S. "Grangewood"Tons { Gross 2539.4
Net 1630.88Master A. N. Saltou Built at S. landBy whom built R. Thompson & Sons When built 1892Engines made at S. landBy whom made G. Clark & Co.when made 1892Boilers made at "By whom made "when made 1892Registered Horse Power 220 210Owners E. W. Morgan & Co.Port belonging to LondonNom. Horse Power as per Section 28 23 1/4ENGINES, &c.— Description of Engines 3 in compoundNo. of Cylinders 3Diameter of Cylinders 23" 3 1/2" 6 1/2" Length of Stroke 39 Revolutions per minute 65 Diameter of Screw shaft as per rule 10 7/8"Diameter of Tunnel shaft as per rule 10 7/8" Diameter of Crank shaft journals 11 1/4" Diameter of Crank pin 11 1/4" Size of Crank webs 8 3/8" x 19"Diameter of screw 15 1/2" - 6" Pitch of screw 16 1/4" 9" No. of blades 4 State whether moveable Yes Total surface 75 sq ftNo. of Feed pumps 2 Diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 4 1/4" Stroke 24" Can one be overhauled while the other is at work YesNo. of Donkey Engines 2 Sizes of Pumps 8" x 10" & 3 1/2" x 5 1/2" x 5" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room 3. Suctions of 3" dia each In Holds, &c. 2 Suctions of 2 1/2" dia. toNo. 1. 2. 3 & 4 heads. 1 of 2 1/2" to after well.No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump Yes 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 YesAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks bothAre 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 aboveAre 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 YesWhat 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 YesAre the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges YesWhen were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight YesIs it fitted with a watertight door Yes worked from top platformOILERS, &c.— (Letter for record R.) Total Heating Surface of Boilers 3590 sq ftNo. and Description of Boilers 2. Cyl. multi. Single ended Working Pressure 160 Tested by hydraulic pressure to 320 lbsDate of test 13/4/92 Can each boiler be worked separately Yes Area of fire grate in each boiler 54 sq ft No. and Description of safety valves toeach boiler 2. Spring Area of each valve 5.9 sq ft Pressure to which they are adjusted 165 lbs Are they fittedwith easing gear Yes Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean diameter of boilers 13 ft 9"Length 10 feet Material of shell plates Steel Thickness 1 1/8" Description of riveting: circum. seams d. r. lap long. seams t. r. buttDiameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 5/16" Lap of plates or width of butt straps 19" StrapsPer centages of strength of longitudinal joint 90 Working pressure of shell by rules 160 lbs Size of manhole in shell 16" x 13"Size of compensating ring 8 3/4" x 1 1/4" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 39"Length of plain part top 6" 1" Thickness of plates crown 2 3/32" Description of longitudinal joint welded No. of strengthening rings ✓Working pressure of furnace by the rules 162 lbs Combustion chamber plates: Material Steel Thickness: Sides 3/32" Back 7/16" Top 3/32" Bottom 3/32"Pitch of stays to ditto: Sides 8 3/8" x 7 1/2" Back 8" x 8 1/2" Top 8 3/8" x 8 1/2" stays are fitted with nuts or riveted heads nuts Working pressure by rules 160 lbsMaterial of stays iron Diameter at smallest part 1 1/2" Area supported by each stay 66 sq ft Working pressure by rules 160 lbs End plates in steam space:Material Steel Thickness 1 3/32" Pitch of stays 20 7/8" x 18 3/8" How are stays secured d. nuts Working pressure by rules 161 lbs Material of stays SteelDiameter at smallest part 3 5/32" Area supported by each stay 383 sq ft Working pressure by rules 183 Material of Front plates at bottom SteelThickness 1 1/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 13" Working pressure of plate by rules 186 lbsDiameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9"Pitch across wide water spaces 14 1/4" Working pressures by rules 25 1/2 lbs Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 8 1/4" x 1 1/2" Length as per rule 30 3/4" Distance apart 8 1/6" Number and pitch of Stays in each 2 of 8 7/8"Working pressure by rules 172 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler workedseparately ✓ Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivetholes — 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 —

1930-121075

Lloyd's Register
Foundation

2 DONKEY BOILERS Description *Vertical. 3 cross tubes*
 Made at *Stockton* By whom made *Riley Bros.* When made *4-92* Where fixed *Stokehole*
 Working pressure *80 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *446* Fire grate area *18 sq* Description of safety valves *Spring*
 No. of safety valves *1* Area of each *9.6 sq* Pressure to which they are adjusted *80 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *5'-6"* Length *13'-0"* Material of shell plates *Steel* Thickness *3/8"*
 Description of riveting long. seams *Lap double* Diameter of rivet holes *1 3/16"* Whether punched or drilled *P* Pitch of rivets *2 1/16"*
 Lap of plating *4 1/2* Per centage of strength of joint *83.8* Rivets *41.1* Thickness of shell crown plates *1/2"* Radius of do. No. of Stays to do. *6*
 Dia. of stays. *1 1/2"* Diameter of furnace Top *4'-5"* Bottom *4'-1 1/4"* Length of furnace *4'-4 1/4"* Thickness of furnace plates *3/16"* Description of joint *Lap Single* Thickness of furnace crown plates *3* Stayed by *6 stays of 1 1/2" dia* Working pressure of shell by rules *80 lbs*
 Working pressure of furnace by rules *87.3"* Diameter of uptake *13"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *1 set of connecting rod bolts and nuts. 2 main bearing bolts and nuts. 1 set of coupling bolts and nuts. 1 set of feed and bilge pump valves. nuts bolts and assorted iron.*

The foregoing is a correct description,

George Blankin Manufacturer. *marine engines boilers*

General Remarks (State quality of workmanship, opinions as to class, &c. *Marine engines and boilers constructed under special survey, materials and workmanship good and efficient. In my opinion this vessel is eligible for the notation of H.M.C. 5-92 in the Register Book.*

Certificate (if required) to be sent to

The amount of Entry Fee.. £ *2 : 0 : 0* When applied for, *31 May 1892*
 Special £ *31 : 14 : 0*
 Donkey Boiler Fee £ When received, *1 June 1892*
 Travelling Expenses (if any) £

Committee's Minute

FRI 17 JUN 1892

+LMC 5,92

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



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