

REPORT ON MACHINERY.

No. 22864

Port of SunderlandReceived at London MON. 15 JUL 1906No. in Survey held at SunderlandDate, first Survey 27th February 06 Last Survey 23rd June 1906

Reg. Book.

on the Steel Screw Steamer "Tosto"(Number of Visits 31)Gross 1755.38
Tons Net 1081.18
When built 1906Master B. Hutchison Built at Sunderland By whom built J. P. Austin & SonEngines made at Sunderland By whom made G. Clark & Cowhen made doBoilers made at do By whom made dowhen made do

Registered Horse Power

Owners Pelton Steamship Co. Ltd. Port belonging to NewcastleNom. Horse Power as per Section 28 220Is Refrigerating Machinery fitted for cargo purposes do Is Electric Light fitted do

ENGINES, &c.—Description of Engines

Vertical Triple Expansion fitted amidships No. of Cylinders three No. of Cranks threeDia. of Cylinders 21 1/2 - 35 - 57 Length of Stroke 39 Revs. per minute 70 Dia. of Screw shaft as per rule 11 1/2 Material of screw shaft SteelIs 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 no 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 yes Length of stern bush 3 - 11Dia. of Tunnel shaft as per rule 10 1/2 as fitted 10 3/4 Dia. of Crank shaft journals as per rule 10 1/2 as fitted 10 3/4 Dia. of Crank pin 11 Size of Crank webs 8 x 6 1/2 Dia. of thrust shaft under collars 11 1/2 Dia. of screw 14 - 3 Pitch of Screw 15 - 6 No. of Blades 4 State whether moveable no Total surface 65.5 sq ftNo. of Feed pumps two Diameter of ditto 2 3/4 Stroke 24 Can one be overhauled while the other is at work yesNo. of Bilge pumps two Diameter of ditto 3 1/2 Stroke 24 Can one be overhauled while the other is at work yesNo. of Donkey Engines two Sizes of Pumps Ballast 7 x 10 1/2 x 10 1/2 Feed 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room two wings 2 1/2 dia + one centre 3 dia In Holds, &c. two in each 2 1/2 dia one 2 1/2 tunnel wellNo. 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 5"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 noAre 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 yesAre 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 yesDates of examination of completion of fitting of Sea Connections 15.5.06 of Stern Tube 29.5.06 Screw shaft and Propellers 8.6.06Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top platformBOILERS, &c.—(Letter for record D) Manufacturers of Steel J. Spencer & Sons, Newburn Steel WorksTotal Heating Surface of Boilers 3540 sq ft Is Forced Draft fitted no No. and Description of Boilers two single ended multibularWorking Pressure 160 lb Tested by hydraulic pressure to 320 lb Date of test 9.6.06 No. of Certificate 2490Can each boiler be worked separately yes Area of fire grate in each boiler 56 sq ft No. and Description of Safety Valves to each boiler one spring loaded Area of each valve 7.64 sq ft Pressure to which they are adjusted 165 lb Are they fitted with easing gear yesSmallest distance between boilers or uptakes and bunkers or woodwork 18" Mean dia. of boilers 13 - 9 1/2" Length 10 - 6" Material of shell plates SteelThickness 1 1/4" Range of tensile strength 28 1/2 to 32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams lap orlong. seams 801 J.R. 5 1/4 Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 1 1/2"Per centages of strength of longitudinal joint rivets 99 plate 85 Working pressure of shell by rules 161.8 Size of manhole in shell end 16" x 13"Size of compensating ring bushed No. and Description of Furnaces in each boiler one plain Material Steel Outside diameter 42"Length of plain part top 81" bottom 115" Thickness of plates crown 1 1/4" bottom 1 1/4" Description of longitudinal joint bushed No. of strengthening rings yesWorking pressure of furnace by the rules 166 lb Combustion chamber plates: Material Steel Thickness: Sides 1 1/8" Back 1 1/8" Top 1 1/8" Bottom 1"Pitch of stays to ditto: Sides 10 1/2 x 9 1/2" Back 11 x 9" Top yes If stays are fitted with nuts or riveted heads but Working pressure by rules 161Material of stays Steel Diameter at smallest part 1 3/4" Area supported by each stay 112 sq in Working pressure by rules 162 End plates in steam space:Material Steel Thickness 1 1/8" Pitch of stays 21 x 22 1/2" How are stays secured but Working pressure by rules 161 Material of stays SteelDiameter at smallest part 1 3/4" Area supported by each stay 434 sq in Working pressure by rules 166 Material of Front plates at bottom SteelThickness 1 1/8" Material of Lower back plate Steel Thickness 1 1/8" Greatest pitch of stays 15 1/2" Working pressure of plate by rules 165Diameter of tubes 3 1/2" Pitch of tubes 4 1/2 x 4 1/2" Material of tube plates Steel Thickness: Front 1 1/8" Back 1 1/8" Mean pitch of stays 10"Pitch across wide water spaces 14 1/2" Working pressures by rules 249 Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 12 1/2" 14 1/2 x 12 1/2" Length as per rule yes Distance apart yes Number and pitch of stays in each yesWorking pressure by rules yes Superheater or Steam chest; how connected to boiler yes Can the superheater be shut off and the boiler workedseparately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivetholes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yesIf stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yesWorking pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

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18/3/61
E. J. Stoddard
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

TUES. 17 JUL 1906

+ Lm 6.6.06

MACHINERY CERTIFICATE
WRITTEN,

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

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