

REPORT ON MACHINERY.

No. 1559

Port of Trieste

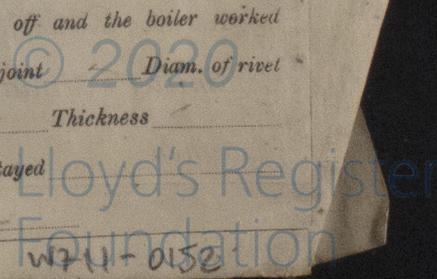
Received at London Office

THUR. DEC 20 1906

No. in Survey held at Trieste Date, first Survey 19th July 1906 Last Survey 16/12 1906
 on the S.S. "VORWÄRTS" (Machinery & Boilers) (Number of Visits 47)
 Master P. Colledani Built at Trieste By whom built Lloyd Austriaco Tons { Gross 5989
 Engines made at Trieste By whom made Lloyd Austriaco when made 1905-6-12
 Boilers made at Trieste By whom made Lloyd Austriaco when made 1906-12
 Registered Horse Power 469 Owners Lloyd Austriaco Port belonging to Trieste
 Nom. Horse Power as per Section 28 669 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion surface condensing No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 28" x 4 1/2" x 80 Length of Stroke 54 Revs. per minute 82 Dia. of Screw shaft 17 1/2 Material of screw shaft 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
 Is the propeller boss yes If the liner is in more than one length are the joints burned — 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 yes If two
 bearings are fitted, is the shaft lapped or protected between the liners — Length of stern bush 5'-6 1/4"
 Dia. of Tunnel shaft 14.85" as per rule 15.59" Dia. of Crank shaft journals 15 1/2" as fitted 16 1/2" Dia. of Crank pin 16 1/2" Size of Crank webs 23 x 8 1/2" Dia. of thrust shaft under
 bars 16 1/4" Dia. of screw 19.3" Pitch of Screw 19'-6" No. of Blades 4 State whether moveable yes Total surface 100
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 30" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 30" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 10" x 10" x 10", 7" x 7" x 8" No. and size of Suctions connected to both Bilge and Donkey pumps
 Engine Room 2 of 3 1/2" diam. Boiler room 1 of 3 1/2" diam. In Holds, &c. No. 13 of 3 1/2" diam.
 No. of Bilge Injections 1 sizes 14" Connected to condenser, or to circulating pumps — Is a separate Donkey Suction fitted in Engine room & size yes 2-3 1/2" diam.
 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 Valves
 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
 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
 Dates of examination of completion of fitting of Sea Connections 28/8/06 of Stern Tube 5/9/06 Screw shaft and Propeller 20/9/06
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from Top of Engine room

BOILERS, &c.—(Letter for record 7) Manufacturers of Steel Hyde Bridge Steel Co. Ltd.
 Total Heating Surface of Boilers 9624 sq ft Is Forced Draft fitted yes No. and Description of Boilers 4 single ended multitubular
 Working Pressure 200 lbs per sq in Tested by hydraulic pressure to 400 lbs Date of test 4/8/06 & 1/19/06 No. of Certificates 64 & 65
 Can each boiler be worked separately yes Area of fire grate in each boiler 60 1/2 sq ft No. and Description of Safety Valves to
 each boiler 2 spring loaded Area of each valve 8.296 Pressure to which they are adjusted 200 lbs per sq in Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 1'9" Mean dia. of boilers 15-3 1/4" Length 11.3" Material of shell plates steel
 Thickness 1 3/8" Range of tensile strength 29 to 32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double no.
 Long. seams double straps Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 20 5/8" x 1 1/2" x 1 1/4"
 Percentages of strength of longitudinal joint rivets 91.75 Working pressure of shell by rules 207 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 1 3/4" in No. and Description of Furnaces in each boiler 3 Dightons Material steel Outside diameter 4'-0 1/4"
 Length of plain part top — Thickness of plates crown 5/8" Description of longitudinal joint welded No. of strengthening rings —
 Working pressure of furnace by the rules 208 lbs Combustion chamber plates: Material steel Thickness: Sides 2 1/32" Back 5/8" Top 2 1/32" Bottom 3 1/32"
 Pitch of stays to ditto: Sides 9 x 8" Back 8 x 8" Top 8 7/8 x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 200 lbs
 Material of stays steel Diameter at smallest part 2.03" Area supported by each stay 64" Working pressure by rules 238 lbs End plates in steam space:
 Material steel Thickness 1 1/32" Pitch of stays 16" x 16" How are stays secured double nuts Working pressure by rules 200 lbs Material of stays steel
 Diameter at smallest part 5.36" Area supported by each stay 16" x 16" Working pressure by rules 217 Material of Front plates at bottom steel
 Thickness 1 7/16" Material of Lower back plate steel Thickness 1 5/16" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 200
 Diameter of tubes 2 1/2" Pitch of tubes 3 3/4" x 3 23/32" Material of tube plates steel Thickness: Front 1 9/16" Back 3/4" Mean pitch of stays 7" 15/32"
 Pitch across wide water spaces 13 1/2" Working pressures by rules 200 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 9" x 1 3/4" Length as per rule 30 3/4" Distance apart 8 1/4" max Number and pitch of stays in each 2 at 8 5/8"
 Working pressure by rules 250 Superheater or Steam chest; how connected to boiler — 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
— Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —
 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 —



VERTICAL DONKEY BOILER— Manufacturers of Steel

No. Description
 Made at By whom made When made Where fixed
 Working pressure tested by hydraulic pressure to Date of test No. of Certificate Fire grate area Description of Sa
 Valves No. of Safety Valves Area of each Pressure to which they are adjusted Date of adjustment
 If fitted with easing gear If steam from main boilers can enter the donkey boiler Dia. of donkey boiler Length
 Material of shell plates Thickness Range of tensile strength Descrip. of riveting long. seams
 Dia. of rivet holes Whether punched or drilled Pitch of rivets Lap of plating Per centage of strength of joint Rivets
 Working pressure of shell by rules Thickness of shell crown plates Radius of do. No. of stays to do. Dia. of stays
 Diameter of furnace Top Bottom Length of furnace Thickness of furnace plates Description of joint
 Working pressure of furnace by rules Thickness of furnace crown plates Stayed by
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— 1 Crank shaft, 9 Coupling bolts, 1 propeller shaft
 with liner full length, 6 bolts for tunnel shafting, 4 propeller blades + 8 Stud + nuts, 1 pair loper
 + bottom end brasses piston rod, 50 Condenser tubes, 3 Valve spindles, 1 Eccentric strap, 1 Air pump, bucket
 150 Fire bars 3 Bearers

The foregoing is a correct description,

J. M. M. M. Manufacturer.

Dates of Survey while building	During progress of work in shops—	19 Feb, 2 Mar, 23/3, 30/3, 12/4, 3/5, 14/5, 12/6, 21/6, 23/6, 3/7, 10/7, 23/7, 31/7, 2/8, 4/8, 25/8, 29/8
	During erection on board vessel—	4/9, 1/9, 20/9/06, 21/9, 24/9, 28/9, 2/10, 4/10, 7/10, 9/10, 10/10, 11/10, 12/10, 22/10, 24/10, 3/11, 17/11, 20/11, 23/11, 26/11, 28/11, 31/12, 4/12, 5/12, 7/12, 10/12, 16/12/06
	Total No. of visits	47

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

Dates of Examination of principal parts—Cylinders	3/7/06	Slides	10/7/06	Covers	10/7/06	Pistons	10/7/06	Rods	12, 4, 0
Connecting rods	12/4/06	Crank shaft	30/3/06	Thrust shaft	30/3/06	Tunnel shafts	3/5/06	Screw shaft	30/3/06
Propeller	20/9/06	Steam pipes tested	28/11/06	Engine and boiler seatings	28/9/06	Engines holding down bolts	28/9/06		
Completion of pumping arrangements	14/11/06	Boilers fixed	28/9/06	Engines tried under steam	3/12/06				
Main boiler safety valves adjusted	3/12/06	Thickness of adjusting washers	18/32, 16/32, 14/32, 12/32, 14/32, 14/32, 8/16, 8/16						
Material of Crank shaft	steel	Identification Mark on Do.	C.H. 1673	Material of Thrust shaft	steel	Identification Mark on Do.	C.H. 1760		
Material of Tunnel shafts	steel	Identification Marks on Do.	C.H. 1760, 1740, 1807	Material of Screw shafts	steel	Identification Marks on Do.	16, 11		
Material of Steam Pipes	steel	Test pressure	600 lbs						

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

Workmanship throughout good.

It is submitted that this vessel is eligible for THE RECORD H.L.M.C. 12.06 ED. ELEC. LIGHT.

Chas. Stewart
 20.12.06
 20.12.06

Note 2/16 of this fee when received to be credited to Glasgow Office

The amount of Entry Fee..	£ 3	When applied for.	17/12/06
Special	£ 53.9	When received.	22/12/06
Donkey Boiler Fee .. .	£ 2.2		27/12/06
Travelling Expenses (if any) £	58.11		

Charles Stewart *Chas R. Augh*
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute FRI, 21 DEC 1906

Assigned *H.M.C. 12.06*

MACHINERY CERTIFICATE WRITTEN.

