

Received at London Office

SAT. JUN. 5-1915

Date of writing Report 29th May 1915 When finished in at Local Office

3/6/15 Port of West Hartlepool

No. in Survey held at W. Hartlepool
Reg. Book.Date, First Survey 14th Oct/14 Last Survey 29th May 1915

on the steel screw steamer "City of Hankow" (Wm Gray & Co. SS No 857)

Gross 736.9

Net 476.7

Master W. J. Hannaford 00-15 Built at W. Hartlepool By whom built W. Gray & Co. Ltd.

When built 5-1915

Engines made at W. Hartlepool By whom made Central Marine Engine Works

when made 1915

Boilers made at W. Hartlepool By whom made Central Marine Engine Works

when made 1915

Registered Horse Power 738 Owners Ellerman Lines, Ltd. (Hall Line) Port belonging to Liverpool

Nom. Horse Power as per Section 28 738 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Quadruple Expansion No. of Cylinders four (4) No. of Cranks four (4)

Dia. of Cylinders 26" 37 1/2" 54" & 78" Length of Stroke 54" Revs. per minute 78 Dia. of Screw shaft as per rule 15.27" Material of steel

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 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

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 67"

Dia. of Tunnel shaft as per rule 14.51" Dia. of Crank shaft journals as per rule 15.24" Dia. of Crank pin 15 1/2" Size of Crank webs 9" x 21 3/4" Dia. of thrust shaft under

collars 15 1/2" Dia. of screw 19-0" Pitch of Screw 17-0" No. of Blades 4 State whether moveable Yes Total surface 126 sq ft

No. of Feed pumps Two (2) Diameter of ditto 9" Stroke 24" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two (2) Diameter of ditto 4 1/2" Stroke 33" Can one be overhauled while the other is at work Yes

No. of Donkey Engines three (3) Sizes of Pumps 6" x 10" 10 1/2" x 10" & 5 1/2" x 12" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room four (4) 3 1/2" In Holds, &c. twelve (12) 3 1/2" & in tunnel one 3"

No. of Bilge Injections one size 10" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size Yes 3 1/2"

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 Suctions to forward How are they protected Wood cased

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 22/5/15 of Stern Tube 22/5/15 Screw shaft and Propeller 22/5/15

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) Manufacturers of Steel John Spencer & Sons Ltd

Total Heating Surface of Boilers 8726 + 2210 = 10936 sq ft Is Forced Draft fitted Yes No. and Description of Boilers Three (3) Single-ended

Working Pressure 225 lbs. Tested by hydraulic pressure to 450 lbs. Date of test 12/3/15 No. of Certificate 3399

Can each boiler be worked separately Yes Area of fire grate in each boiler 75 sq ft No. and Description of Safety Valves to

each boiler two (2) Spring Area of each valve 11.04 sq in Pressure to which they are adjusted 230 lbs. Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 30" Mean dia. of boilers 16-0" Length 12-8" Material of shell plates steel

Thickness 1 1/2" Range of tensile strength 27/30 tons Are the shell plates welded or flanged both Descrip. of riveting: cir. seams treble, lapped

long. seams treble, dble. strap Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23 3/4"

Per centages of strength of longitudinal joint rivets 91.7 plate 84.4 Working pressure of shell by rules 228 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring 36 1/2" x 32 1/2" x 1 1/2" No. and Description of Furnaces in each boiler four (4) Lighter's Material steel Outside diameter 44 5/8"

Length of plain part top Thickness of plates crown 5/8 Description of longitudinal joint welded No. of strengthening rings Corrugated

Working pressure of furnace by the rules 226 lbs. Combustion chamber plates: Material steel Thickness: Sides 11/16" Back 23/32" Top 23/32" Bottom 1"

Pitch of stays to ditto: Sides 9" x 8" Back 9 1/4" x 8 1/2" Top 8 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 225 lbs.

Material of stays steel Diameter at smallest part 1.633 Area supported by each stay 9 3/8" x 8 1/2" Working pressure by rules 244 lbs. End plates in steam space

Material steel Thickness 1/4" Pitch of stays 18 1/2" x 17 How are stays secured dble nuts Working pressure by rules 233 lbs. Material of stays steel

Diameter at smallest part 3.03 Area supported by each stay 18 1/2" x 17 Working pressure by rules 238 lbs. Material of Front plates at bottom steel

Thickness 1/32" Material of Lower back plate steel Thickness 1" Greatest pitch of stays 15 1/2" Working pressure of plate by rules 225 lbs.

Diameter of tubes 2 1/2" Pitch of tubes 33 1/4" Material of tube plates steel Thickness: Front 13/32" Back 13/16" Mean pitch of stays 9 3/8" x 7 1/2"

Pitch across wide water spaces 14" Working pressures by rules 234 lbs. Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 11 3/4" x 1 1/2" Length as per rule 36 1/2" Distance apart 8 1/2" Number and pitch of stays in each 3-8 5/8"

Working pressure by rules 237 lbs. 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

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

W238-0083

IS A DONKEY BOILER FITTED? *No.*

If so, is a report note forwarded?

SPARE GEAR. State the articles supplied:— 2 propeller blades; set of studs & nuts for one propeller blade; one pair of crank pin bushes complete; one valve spindle; gland & neck bush for piston rod & valve spindle; air pump rod; pair of H.P. ahead eccentric straps; 2 connecting rod bolts & nuts; 2 piston rod bolts & nuts; 2 main bearing bolts & nuts; one set of coupling bolts & nuts; one set of bilge pump valves & seats; 20 condenser tube ferrules; one set of feed donkey valves; one set of ballast donkey valves; 2 feed check valve bolts; one set of Beer's feed pump suction & delivery valves; 6 piston bolts & nuts; 6 tubes for main boilers & 3 for aux^y boiler; 2 safety valve springs for main boilers & one spring for aux^y boiler; set of spare gear for fan engine & for centrifugal pump; some assorted round bars, bolts & nuts, &c.

The foregoing is a correct description,

FOR THE CENTRAL MARINE ENGINE WORKS.

(W. GRAY & Co., Ltd.)

John B. Williams Manufacturer.

Dates of Survey while building	{	During progress of work in shops --	1914 Oct 14 15 16 21 22 27 28 29 30 Nov 2 4 5 6 9 10 11 12 13 16 18 19 20 23 24 25 26 30 Dec 1 2 4 7 8 9 10 11 14 15 17 21 22 23 24 28 29 30 31 1915 Jan 4 5 6 7 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 Mar 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 26 27 28 29 30 May 3 6 10 12 13 17
		During erection on board vessel --	6 7 8 11 12 13 14 15 19 20 21 22 25 26 27 28 29 Feb 1 2 3 4 5 8 9 10 11 12 15 16 17 18 19 22 23 24 25 26 Mar 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 26 27 28 29 30 May 3 6 10 12 13 17
		Total No. of visits	139.

Is the approved plan of main boiler forwarded herewith *yes.*

" " " *yes.*

Dates of Examination of principal parts—Cylinders *26/3/15* Slides *30/3/15* Covers *31/3/15* Pistons *26/3/15* Rods *16/3/15*

Connecting rods *22/3/15* Crank shaft *16/3/15* Thrust shaft *23/3/15* Tunnel shafts *20/4/15* Screw shaft *18/3/15* Propeller *29/3/15*

Stern tube *10/3/15* Steam pipes tested *26 & 26/3/15* Engine and boiler seatings *13/4/15* Engines holding down bolts *20/4/15*

Completion of pumping arrangements *27/5/15* Boilers fixed *3/5/15* Engines tried under steam *28/5/15*

Main boiler safety valves adjusted *28/5/15* Thickness of adjusting washers *Port boiler, P valve 3/4" S valve 1 1/16"*

Material of Crank shaft *Steel* Identification Mark on Do. *5590* Material of Thrust shaft *Iron* Identification Mark on Do. *5590*

Material of Tunnel shafts *steel* Identification Marks on Do. *5590* Material of Screw shafts *Iron* Identification Marks on Do. *5590*

Material of Steam Pipes *steel (lap-welded)* Test pressure *675 lbs.*

Is an installation fitted for burning oil fuel *No.* Is the flash point of the oil to be used over 150°F. *✓*

Have the requirements of Section 49 of the Rules been complied with *✓*

Is this machinery duplicate of a previous case *No.* If so, state name of vessel *✓*

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

Evaporator fitted on board - coils of same having been tested to 450 lbs. & body to 50 lbs. water pressure per sq. in.

Workmanship good. The Engines & Boilers of this steamer have been constructed under special survey & fitted on board in accordance with the Society's Rules. They are now, in my opinion, in safe working condition & the case is respectfully submitted for the record of LMC 5.15 in the Register Book.

It is submitted that this vessel is eligible for THE RECORD + LMC 5.15. E.D.

The amount of Entry Fee ...	£ 3 : -	When applied for, <i>2/6/1915</i>
Special Less of charges on machinery fees of St. Mark Donkey Boiler Fee ...	£ 56 : 18	When received, <i>4/6/1915</i>
Travelling Expenses (if any) £	£ 56 : 18	

Committee's Minute TUE. JUN. 15. 1915

Assigned *+ LMC 5.15 J.D.*

MAINTENANCE CERTIFICATE

Lloyd's Register Foundation