Rpt. 4.

REPORT ON MACHINERY.

No. 29935

Received at London Office SAT. 12 MAY, 1917

Date of writing Report 5-5-17 19 When handed in at Local Office 9-5-17 19 Port of Hull

No. in Reg. Book. 824 Survey held at Hull Date, First Survey 28/6/15 Last Survey 2-5-17 19 (Number of Visits 122)

on the steel screw steamer Chicago Tons Gross 7709 Net 5711

Master Built at Hull By whom built Earle's Co Ld When built 1917-5

Engines made at Hull By whom made Earle's Co Ld when made 1917-5

Boilers made at Hull By whom made Earle's Co Ld when made 1917-5

Registered Horse Power Owners Ellerman's Wilson Line Port belonging to Hull

Nom. Horse Power as per Section 28 685 ✓ Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple expansion ✓ No. of Cylinders 3 ✓ No. of Cranks 3

Dia. of Cylinders 28"-46"-79" Length of Stroke 54" Revs. per minute Dia. of Screw shaft as per rule 16·17 as fitted 17¼ Material of screw shaft 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 ✓ If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 69½" ✓

Dia. of Tunnel shaft as per rule 14·78" as fitted 15" ✓ Dia. of Crank shaft journals as per rule 15·5" as fitted 16" ✓ Dia. of Crank pin 16¼" ✓ Size of Crank web 10¼"×25" ✓ Dia. of thrust shaft under collars 16" ✓ Dia. of screw 19'-0" ✓ Pitch of Screw 17'-6" ✓ No. of Blades 4 ✓ State whether moveable yes ✓ Total surface 116 ft² ✓

No. of Feed pumps 2 Weirs ✓ Diameter of ditto 8" ✓ Stroke 24" ✓ Can one be overhauled while the other is at work yes ✓

No. of Bilge pumps Two ✓ Diameter of ditto 4½" ✓ Stroke 30" ✓ Can one be overhauled while the other is at work yes ✓

No. of Donkey Engines Two ✓ Sizes of Pumps 7¼, 5×8 dup; 10½×12×40 Ballast ✓ No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Four 3½" dia, one 3 in tunnel well ✓ In Holds, &c. Two 3½" in each hold ✓

No. of Bilge Injections one ✓ sizes 9½" ✓ Connected to condenser, or to circulating pump pump ✓ Is a separate Donkey Suction fitted in Engine room & size yes 3½" ✓

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 yes ✓

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 Foward suctions ✓ How are they protected strong wooden casing ✓

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 ✓

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 D. Colville & Sons ✓

Total Heating Surface of Boilers 10,095 ft² ✓ Is Forced Draft fitted yes ✓ No. and Description of Boilers Three single ended ✓

Working Pressure 200 lbs ✓ Tested by hydraulic pressure to 400 lbs ✓ Date of test Hbd 2-2-17 C&H 16-2-17 No. of Certificate 3169 3194

Can each boiler be worked separately yes ✓ Area of fire grate in each boiler 83·375 sq ft ✓ No. and Description of Safety Valves to each boiler Two spring loaded ✓ Area of each valve 8·29 in² ✓ Pressure to which they are adjusted 205 ✓ Are they fitted with easing gear yes ✓

Smallest distance between boilers ~~or uptakes~~ and bunkers ~~or woodwork~~ abt 2'-6" ✓ Mean dia. of boilers 204" ✓ Length 12'-0" ✓ Material of shell plates Steel ✓

Thickness 1 13/32" ✓ Range of tensile strength 30-34 tons ✓ Are the shell plates welded or flanged no ✓ Descrip. of riveting: cir. seams double ✓ long. seams T.R.D.B.1 ✓ Diameter of rivet holes in long. seams 1 7/16" ✓ Pitch of rivets 9 9/16" ✓ ~~Lap of plates or~~ width of butt straps 20 7/8" ✓

Per centages of strength of longitudinal joint rivets 89·8 plate 84·96 ✓ Working pressure of shell by rules 201 ✓ Size of manhole in shell 16"×12" ✓

Size of compensating ring 10½" × 1 13/32" ✓ No. and Description of Furnaces in each boiler Four Deighton ✓ Material steel ✓ Outside diameter 47¾" ✓

Length of plain part top ✓ bottom ✓ Thickness of plates crown 1 11/16" ✓ bottom 1 1/16" ✓ Description of longitudinal joint welded ✓ No. of strengthening rings ✓

Working pressure of furnace by the rules 237 ✓ Combustion chamber plates: Material steel ✓ Thickness: Sides 25/32" ✓ Back 23/32" ✓ Top ¾" ✓ Bottom 25/32" ✓

Pitch of stays to ditto: Sides 10¾" × 8½" ✓ Back 9¼" × 8 7/8" ✓ Top 11" × 8" ✓ If stays are fitted with nuts or riveted heads nuts ✓ Working pressure by rules 211 ✓

Material of stays steel ✓ Area at smallest part 2·40 ✓ Area supported by each stay 104 ✓ Working pressure by rules 208 ✓ End plates in steam space:

Material steel ✓ Thickness 1⅛" ✓ Pitch of stays 15½" × 16¼" ✓ How are stays secured D.N.W. ✓ Working pressure by rules 208 ✓ Material of stays steel ✓

Area at smallest part 6·10 in² ✓ Area supported by each stay 282 in² ✓ Working pressure by rules 225 ✓ Material of Front plates at bottom steel ✓

Thickness 3 1/32" ✓ Material of Lower back plate steel ✓ Thickness 1 5/16" ✓ Greatest pitch of stays 14 3/4" × 8½" ✓ Working pressure of plate by rules 205 ✓

Diameter of tubes 2½" ✓ Pitch of tubes 3¾" × 3 7/8" ✓ Material of tube plates steel ✓ Thickness: Front 1⅛" ✓ Back ⅞" ✓ Mean pitch of stays ~~2½~~ 7¾" × 11¼" ✓

Pitch across wide water spaces 13½" ✓ Working pressures by rules 249 ✓ Girders to Chamber tops: Material steel ✓ Depth and thickness of girder at centre 10" × 1¾" ✓ Length as per rule 33·3" ✓ Distance apart 11" ✓ Number and pitch of stays in each Three 8" ✓

Working pressure by rules 201 ✓ Steam dome: description of joint to shell ✓ % of strength of joint ✓

Diameter ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓

Pitch of rivets ✓ Working pressure of shell by rules ✓ Crown plates ✓ Thickness ✓ How stayed ✓

SUPERHEATER. Type Uptake ✓ Date of Approval of Plan 19-3-17 ✓ Tested by Hydraulic Pressure to 600 lbs ✓

Date of Test 6-11-16 ✓ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes ✓

Diameter of Safety Valve two 2" dia ✓ Pressure to which each is adjusted 220 lbs ✓ Is Easing Gear fitted yes ✓

W920-0038

IS A DONKEY BOILER FITTED? No ✓ If so, is a report now forwarded? ✓

SPARE GEAR. State the articles supplied :— Two top end bolts & nuts, two bottom end bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of air, feed & bilge pump valves, one main & one donkey check valve, one set donkey pump valves, one set of H.P piston rings, 6 cylinder cover studs & nuts, two propeller blades, one pair of top & one pair of bottom end brasses, one eccentric strap, one set of valves & one shuttle valve for Woodson Pump. One impeller shaft, one valve, bottom end brasses top & bottom end bolts for air pump one safety valve spring 6 boiler tubes & a quantity of bolts nuts & iron of various sizes

The foregoing is a correct description,

FOR EARLE'S SHIPBUILDING & ENGINEERING CO. LIMITED

A.H. Lyacks

ASSISTANT MANAGER

Manufacturer. EC

Dates of Survey while building — During progress of work in shops: 1915: Jun 28. 1916:- Apr 18 to Dec 28 = 66, 1917:- Jan 5 to May 2 = 55

During erection on board vessel: —

Total No. of visits 122

Is the approved plan of main boiler forwarded herewith yes ✓

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 25-10-16 Slides 10, 19-1-17 Covers 24-1-17 Pistons 4-12-16 Rods 13-11-16

Connecting rods 12-1-17 Crank shaft 16-11-16 Thrust shaft 8-11-16 Tunnel shafts 5-3-17 Screw shaft 26-1-17 Propeller 26-1-17

Stern tube 8-2-17 Steam pipes tested 3, 4, 5-4-17, 23, 24, 31-8-17 Engine and boiler seatings 28-3-17 Engines holding down bolts 28-3-17

Completion of pumping arrangements 26-4-17 Boilers fixed 28-3-17 Engines tried under steam 26-4-17

Completion of fitting sea connections 23-2-17 Stern tube 10-2-17 Screw shaft and propeller 4-4-17

Main boiler safety valves adjusted 12-4-17 Thickness of adjusting washers Port P 13/32 S 7/16, Stb P 7/16 S 15/32, Lo P 19/32 S 29/64

Material of Crank shaft steel Identification Mark on Do. 5706 A B Material of Thrust shaft steel Identification Mark on Do 616 22-9-16 L.R.

Material of Tunnel shafts steel Identification Marks on Do. 616 22-9-16 L.R. Material of Screw shafts steel Identification Marks on Do. 616 15-11-16 L.R.

Material of Steam Pipes lap welded iron & solid drawn steel Test pressure 600 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. The Machinery of this vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society the materials & workmanship are good. The boilers & steam pipes have been tested as above found sound & good. The machinery has been properly fitted secured on board the vessel & on completion tried under steam at full power at the moorings for 4 hours found satisfactory. The safety valves have been adjusted under steam & tested for accumulation which did not exceed 212 lbs.

In my opinion the vessel is eligible for the record + L.M.C. 5-17 F.D.

It is submitted that this vessel is eligible for THE RECORD. +LMC 5.17 FD

FS 14.5.17

Certificate (if required) to be sent to Hull

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

The amount of Entry Fee ... £ 3 : 0 :

Special ... ... £ 54 : 5 :

Donkey Boiler Fee ... £ : :

Travelling Expenses (if any) £ : :

When applied for, 10-5- 1917

When received, 25/6/17 26/6/17

Frank L. Stinger

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 25 MAY. 1917

Assigned +LMC 5.17

F.D.

MACHINERY CERTIFICATE WRITTEN