

REPORT ON MACHINERY.

No. 28799

Date of writing Report 31-7-15

When handed in at Local Office

31.7.15 Port of Hull

Received at London Office

7 SEP 1915

No. in Survey held at Reg. Book.

Hull

Date, First Survey 7.4.15

Last Survey 30.7.15 19

1884 on the

steel screw steamer Autocrat (2193)

(Number of Visits 34)

Master

Built at Selby

By whom built Cochrane & Sons, Ltd

Tons Gross 113 Net 2

Engines made at Hull

By whom made Earle's Co. Ltd

When built 1915-7

Boilers made at Hull

By whom made Earle's Co. Ltd

when made 1915-7

Registered Horse Power

Owners J. C. Spink

when made 1915-7

Nom. Horse Power as per Section 28 66

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted no

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 12"-20"-32" Length of Stroke 24" Revs. per minute

Dia. of Screw shaft as per rule 7 1/2" Material of screw shaft steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube no liners Is the after end of the liner made water tight

the propeller boss 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

Dia. of Tunnel shaft as per rule 6.19" as fitted 6.14" Dia. of Crank shaft journals as per rule 6.5" as fitted 6.34" Dia. of Crank pin 6.34" Length of stern bush 2-7" collars 6 3/4" Dia. of screw 8-2" Pitch of Screw 10-3" No. of Blades 4 State whether moveable no Total surface 27 1/2" Size of Crank webs 4 3/8" x 13 1/4" Dia. of thrust shaft under

No. of Feed pumps one Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work

No. of Bilge pumps one Diameter of ditto 2 1/2" Stroke 11" Can one be overhauled while the other is at work

No. of Donkey Engines one 4 1/2" cylinders sizes of Pumps 5 1/2", 3 1/2" x 5" duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room one 2" dia In Holds, &c. one 2" dia in each compartment

No. of Bilge Injections one sizes 3" Connected to condenser to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 2 1/2" dia

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 Forward suction How are they protected wooden casings

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 22-7-15 of Stern Tube 21-7-15 Screw shaft and Propeller 22-7-15

Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S)

Manufacturers of Steel Steel Co. of Scotland

Total Heating Surface of Boiler 1170 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 9-7-15 No. of Certificate 3091

Can each boiler be worked separately Area of fire grate in each boiler 34 sq ft No. and Description of Safety Valves to each boiler two spring loaded Area of each valve 3.97 sq ft Pressure to which they are adjusted 185 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4 ft Mean dia. of boilers 14 1/4" Length 10'-0" Material of shell plates steel

Thickness 1" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double

long. seams J.R. & B. Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 7 5/8" Lap of plates or width of butt straps 16"

Per centages of strength of longitudinal joint rivets 86.7 plate 86 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 8" x 1" No. and Description of Furnaces in each boiler two plain Material steel Outside diameter 42 1/4"

Length of plain part top 77 5/8" bottom 61" Thickness of plates crown 2 5/32" bottom 2 1/32" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 184 Combustion chamber plates: Material steel Thickness: Sides 2 3/32" Back 2 3/32" Top 2 3/32" Bottom 2 3/32"

Pitch of stays to ditto: Sides 10 1/2" x 9" Back 10" x 9 1/2" Top 10 1/2" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183

Material of stays steel Diameter at smallest part 2.40" Area supported by each stay 115 sq in Working pressure by rules 188 End plates in steam space:

Material steel Thickness 1 1/32" Pitch of stays 17" x 15 1/2" How are stays secured D. N. Working pressure by rules 180 Material of stays steel

Diameter at smallest part 5.18" Area supported by each stay 264 sq in Working pressure by rules 206 Material of Front plates at bottom steel

Thickness 13/16" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 14 1/2" x 9 1/2" Working pressure of plate by rules 180

Diameter of tubes 3 1/2" Pitch of tubes 4 1/16" x 4 3/4" Material of tube plates steel Thickness: Front 15/16" Back 13/16" Mean pitch of stays 9 1/16"

Pitch across wide water spaces 14 1/2" Working pressures by rules 182 Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8" x 1 1/2" Length as per rule 30.4 Distance apart 9" Number and pitch of stays in each two 10 1/2"

Working pressure by rules 187 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

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 feed, bilge, air, circulating, & donkey pump valves, six gun ring studs, one main & one donkey check valve, one safety valve spring, one propeller. A quantity of bolts & nuts & iron of various sizes.*

The foregoing is a correct description,

W. E. S.
W. E. S. & CO. LIMITED.
W. E. S. Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *1915: - Apr 7 12. 19. 20. May 4. 6. 11. 17. 19 Jun 4. 10. 11. 14. 16. 18. 22. 24. 25. 28. 29 Jul 1. 6. 8.*
{ During erection on board vessel - - - } *9. 13. 16. 19. 21. 22. 24. 26. 28. 29. 30.*
Total No. of visits *34*

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

Dates of Examination of principal parts—Cylinders *28-6-15* Slides *8-7-15* Covers *28-6-15* Pistons *8-7-15* Rods *8-7-15*
Connecting rods *16-7-15* Crank shaft *16-7-15* Thrust shaft *25-6-15* Tunnel shaft *25-6-15* Screw shaft *25-6-15* Propeller *13-7-15*
Stern tube *16-7-15* Steam pipes tested *29-7-15* Engine and boiler seatings *21-7-15* Engines holding down bolts *28-7-15*
Completion of pumping arrangements *30-7-15* Boilers fixed *30-7-15* Engines tried under steam *30-7-15*
Main boiler safety valves adjusted *30-7-15* Thickness of adjusting washers *5/16 P. 1/32 S.*

Material of Crank shaft *Steel* Identification Mark on Do. *1507 F.L.S.* Material of Thrust shaft *Steel* Identification Mark on Do. *1475 J.G.M.*
Material of Tunnel shaft *Iron* Identification Marks on Do. *1474 J.G.M.* Material of Screw shaft *Iron* Identification Marks on Do. *1473 J.G.M.*
Material of Steam Pipes *Copper* Test pressure *400 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 & rules of this Society, the materials & workmanship are good, the Boiler & steam pipes have been tested & above found sound & good. The machinery has been properly fitted & secured on board & on completion was tried under steam & found satisfactory. The safety valves have been adjusted & tested for accumulation which did not exceed 192 lbs. In our opinion the vessel is eligible for the record + L.M.C. 7-15.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7. 15.

G.P.S.R.

J.W.D.
10/9/15.

The amount of Entry Fee ...	£ 1 : 0 :	When applied for.
Special ...	£ 9 : 18 :	19. 15
Donkey Boiler Fee ...	£ ✓ :	When received.
Travelling Expenses (if any) £	✓ :	2/10/15 19. 15

Franko Sturgeon & J.G. Mackillop.
Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. SEP. 14. 1915

Assigned + L.M.C. 7. 15.

MACHINERY CERTIFICATE WRITTEN



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Certificate (if required) to be sent to M.C.C.

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