

REPORT ON MACHINERY.

No. 35024

Received at London Office

RI. APR. 16. 1915

Date of writing Report

When handed in at Local Office

10

Port of Glasgow

No. in Survey held at
Reg. Book.

Glasgow

Date, First Survey 22/9/14

Last Survey 12/4/15

1915

on the

S.S. "Chronos"

(Number of Vents 42)

Gross

Net

Master

Built at Port Glasgow

By whom built Tom Hamilton & Co 300

When built 1915

Engines made at

Glasgow

By whom made

D. Rowan & Co (629)

when made

1915

Boilers made at

Glasgow

By whom made

D. Rowan & Co (629)

when made

1915

Registered Horse Power

Owners Messrs Howard Smith & Co

Port belonging to London

Nom. Horse Power as per Section 28

421

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 25 1/2" 42" 70"

Length of Stroke 48"

Revs. per minute 75

Dia. of Screw shaft

as per rule 14 3/8"

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

in 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

Length of stern bush 60"

Dia. of Tunnel shaft as per rule 12 5/8"

Dia. of Crank shaft journals as per rule 13 6"

Dia. of Crank pin 14"

Size of Crank webs 8 3/4"

Dia. of thrust shaft under collars 14"

Dia. of screw 17 3/8"

Pitch of Screw 18 6"

No. of Blades 4

State whether moveable

Total surface 85 1/2"

No. of Feed pumps 2

Diameter of ditto 9 1/2"

Stroke 21"

Can one be overhauled while the other is at work

No. of Bilge pumps 2

Diameter of ditto 4"

Stroke 22"

Can one be overhauled while the other is at work

No. of Donkey Engines 5

Sizes of Pumps 8 1/2" 8 1/2" 4 1/2" 4 1/2"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room (4) 3 1/2"

In Holds, &c. 2 in each hold for 3 1/2", 2 1/2" & 2 1/2"

No. of Bilge Injections 1

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses

Are the roses in Engine room always accessible

Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship

Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates

Are the Discharge Pipes above or below the deep water line

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel

Are the Blow Off Cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers

How are they protected

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges

Dates of examination of completion of fitting of Sea Connections

Is the Screw Shaft Tunnel watertight

Is it fitted with a watertight door

BOILERS, &c.—(Letter for record 5)

Manufacturers of Steel

The Steel Company of Scotland Limited

Total Heating Surface of Boilers 7212 1/2

Is Forced Draft fitted

No. and Description of Boilers 3 Single ended

Working Pressure 180

Tested by hydraulic pressure to 360

Date of test 15/12/14

No. of Certificate 12968

Can each boiler be worked separately

Area of fire grate in each boiler 62 1/2

No. and Description of Safety Valves to each boiler 1 pair direct spring

Area of each valve 7 07

Pressure to which they are adjusted 185 lbs

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork about 12"

Mean dia. of boilers 15 9"

Length 11 0 3/8"

Material of shell plates steel

Thickness 1 7/16"

Range of tensile strength 30134 tons

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams lap double

long. seams butt tube

Diameter of rivet holes in long. seams 1 1/4"

Pitch of rivets 8 3/4"

Lap of plates or width of butt straps 18 3/4"

Per centages of strength of longitudinal joint

Working pressure of shell by rules 180

Size of manhole in shell 17 1/2" 13"

Size of compensating ring 35 1/2" 31 1/2" 1 7/16"

No. and Description of Furnaces in each boiler 3 Doughton

Material steel

Outside diameter 49 1/2"

Length of plain part top bottom

Thickness of plates crown bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules 180

Combustion chamber plates: Material steel

Thickness: Sides 3 1/2"

Back 2 3/4"

Top 2 5/8"

Bottom 2 5/8"

Pitch of stays to ditto: Sides 10 1/4" x 10 1/2"

Back 10 1/8" x 9 1/2"

Top 10 1/4" x 10 1/2"

If stays are fitted with nuts or riveted heads

Working pressure by rules 180

Material of stays steel

Diameter at smallest part 2 07

Area supported by each stay 98

Working pressure by rules 190

End plates in steam space

Material steel

Thickness 1 1/2"

Pitch of stays 2 1/4" 20 1/2"

How are stays secured 2 nuts

Working pressure by rules 182

Material of stays steel

Diameter at smallest part 7 06

Area supported by each stay 445 1/2"

Working pressure by rules 193

Material of Front plates at bottom steel

Thickness 3/8"

Material of Lower back plate steel

Thickness 3/8"

Greatest pitch of stays 13 3/4"

Working pressure of plate by rules 182

Diameter of tubes 3 1/2"

Pitch of tubes 4 1/8" x 4 1/4"

Material of tube plates steel

Thickness: Front 1 1/2"

Back 3/2"

Mean pitch of stays 11 3/4"

Pitch across wide water spaces 14 1/2"

Working pressures by rules 181

Girders to Chamber tops: Material steel

Depth and thickness of girder at centre 9 1/2" x 1/2" double length as per rule 33 3/8"

Distance apart 10 1/2"

Number and pitch of stays in each (2) 10 3/4"

Working pressure by rules 191

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:—2 top end Coll's Muts, 2 bottom end Coll's Muts, 1 set of coupling bolts, 2 main bearing bolts, 2 red & blue pump valves, iron, Coll's Muts assorted, 7 in addition 1 propeller shaft, 3 crank shaft, 1 cast iron propeller.

The foregoing is a correct description,

for David Rowan *DR* Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1914 Sept 22. Oct 2. 15. 16. 20. 26 Nov 4. 11. 12. 13. 20. 25. 30 Dec 3. 7. 8. 11. 14. 15. 17. 23 1915 Jan. 11. 14. 18. 19. 20
	During erection on board vessel - - -	25. 26 3. 9. 12. 15. 16. 22. 24. 25. 26 Mar 4. 8. 23. 31. Apr 8. 12
	Total No. of visits	42

Is the approved plan of main boiler forwarded herewith yes ✓

Dates of Examination of principal parts—Cylinders ^{14/12/14} 22/9/14 Slides 8/12/14 Covers 8/12/14 Pistons 8/12/14 Rods 20/10/14
 Connecting rods 20/10/14 Crank shaft 16/12/14 Thrust shaft 14/1/15 Tunnel shafts 18/1/15 Screw shaft ^{11/1/15} 13/1/14 Propeller 11/1/15
 Stern tube 20/11/14, 3/12/14 Steam pipes tested 26/2/15 Engine and boiler seatings ^{See Enamels} Report Engines holding down bolts 16/2/15
 Completion of pumping arrangements 8/4/15 Boilers fixed 4/3/15 Engines tried under steam 12/4/15
 Main boiler safety valves adjusted 8/4/15 Thickness of adjusting washers ^{P S P S P S} Port, No. 76, 76, Centre 76 32, 32, 76 76
 Material of Crank shaft steel Identification Mark on Do. ⁶²⁹ 2235 ^{15/12/14} Material of Thrust shaft steel Identification Mark on Do. ⁶²⁹ 2235 ^{14/1/15}
 Material of Tunnel shafts steel Identification Marks on Do. ^{See Appendix} 2235 8/4/15 Material of Screw shafts iron Identification Marks on Do. ⁶²⁹ 2235 ^{11/1/15}
 Material of Steam Pipes iron ✓ Test pressure 540 lbs per sq inch ✓

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. *These engines and boilers have*)
been built under special survey the materials and workmanship
are of good description they have been well fitted on board and
tried under steam
This machinery is now in my opinion eligible to have
*notification of **L.M.C. 4-15** in the Register Book*

It is submitted that
this vessel is eligible for
THE RECORD. + L MC 4.15

The amount of Entry Fee	...	£ 3	:	:	When applied for, 12/4/15 When received, 15/4/15
Special	...	£ 4	:	:	
Donkey Boiler Fee	...	£ 1	:	:	
Travelling Expenses (if any)	£	:	:	:	

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

Committee's Minute

Assigned

MACHINERY DEPARTMENT
NOTES

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Foundation