

Rpt. 4.

## REPORT ON MACHINERY.

No. 35459

WED. 22 SEP. 1915

Received at London Office

Date of writing Report 2.8.1915 When handed in at Local Office

Port of Glasgow

No. in Survey held at  
Reg. Book. 184 on theGlasgow  
S/S "Dara"Date, First Survey 13/8/14 Last Survey 16/9/1915  
(Number of Visits 61)

Master

Built at Glasgow By whom built Russell &amp; Co

Engines made at

Glasgow

By whom made

Dunsmuir Jackson &amp; Co (452) when made 1915

Boilers made at

ditto

By whom made

ditto

when made 1915

Registered Horse Power

Owners Boulay, Persia &amp; Co Ltd

Port belonging to Liverpool

Nom. Horse Power as per Section 28 601

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

## ENGINES, &amp;c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 26 1/2 - 44. 73

Length of Stroke 51

Revs. per minute 70

Dia. of Screw shaft

as per rule 15.3

Material of

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

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 5-5

Dia. of Tunnel shaft

as per rule 13.98

Dia. of Crank shaft journals

as per rule 14.64

Dia. of Crank pin

Size of Crank webs 30x10

Dia. of thrust shaft under

collars 15 1/4

Dia. of screw 18.0

Pitch of Screw 18.6

No. of Blades 4

State whether moveable

Yes

Total surface

1074

No. of Feed pumps 2

Diameter of ditto 24"

Stroke

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps 2

Diameter of ditto 4 1/2"

Stroke 26

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines 3

Sizes of Pumps

10x10

Donkey Feed 5 1/2"

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

In Engine Room 4

3 1/2"

Tunnel 1.2 1/2"

In Holds, &amp;c. 2

3 1/2" in each hold

No. of Bilge Injections 1

size 8"

Connected to condenser

to circulating pump

Is a separate Donkey Suction fitted in Engine room

size 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

Now

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

Aloft

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

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

See Quinock Rept. of Stern Tubes

See Quinock Rept. Screw shaft and Propeller

See Quinock Rept.

Is the Screw Shaft Tunnel watertight

Yes

Is it fitted with a watertight door

Yes

worked from UER Platform

## BOILERS, &amp;c.—(Letter for record R.)

Manufacturers of Steel

Spencer, Steel &amp; Co. Scotland &amp; Dundee, Colville

Total Heating Surface of Boilers 9147

Is Forced Draft fitted

Yes

No. and Description of Boilers

3 Single Ended

Working Pressure 200

Tested by hydraulic pressure to

400

Date of test 24.5.15

No. of Certificate 13150

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

57.5

No. and Description of Safety Valves to

each boiler Double Spring

Area of each valve

9.62

Pressure to which they are adjusted

Smallest distance between boilers or uptakes and bunkers or woodwork

14 1/2"

Mean dia. of boilers

15-10 3/4"

Length

12-6"

Material of shell plates

S

Thickness 13 5/16"

Range of tensile strength

29-33

Are the shell plates welded or flanged

Yes

Descrip. of riveting

cir. seams

DR

long. seams TR. DBS

Diameter of rivet holes in long. seams

19 1/16"

Pitch of rivets

10 1/2"

Top of plates or width of butt straps

1-11 1/8"

Per centages of strength of longitudinal joint

rivets 84.75

plate 85.11

Working pressure of shell by rules

215

Size of manhole in shell

16x12"

Size of compensating ring

7 3/4 x 19 1/16"

No. and Description of Furnaces in each boiler

3 Corrugated

Material

S

Outside diameter

4.2"

Length of plain part

top 23 1/32"

Thickness of plates

bottom 23 1/32"

Description of longitudinal joint

weld

No. of strengthening rings

Yes

Working pressure of furnace by the rules

226

Combustion chamber plates: Material

S

Thickness: Sides

43/64"

Back

11/16"

Top

Pitch of stays to ditto: Sides

9 1/8 x 8 1/8"

Back

8 7/8 x 8 7/8"

Top

1 1/2 x 9 1/2"

If stays are fitted with nuts or riveted heads

DN

Working pressure by rules

Material of stays

Iron

at smallest part

1 1/4 x 1 1/4"

Area supported by each stay

74"

Working pressure by rules

220

End plates in steam space:

Material

S

Thickness

13/16"

Pitch of stays

19 1/2 x 14 7/8"

How are stays secured

DN

Working pressure by rules

Material of Front plates at bottom

S

Thickness

31/32"

Greatest pitch of stays

14 7/8 x 8 7/8"

Working pressure of plate by rules

240

Diameter of tubes

2 1/2"

Pitch of tubes

3 1/16"

Material of tube plates

S

Thickness: Front

1 1/64"

Back

Pitch across wide water spaces

13 1/2"

Working pressures by rules

205

Girders to Chamber tops: Material

Iron

Depth and

thickness of girder at centre

11 x 1 (2)

Length as per rule

38 3/32"

Distance apart

9 9 1/2"

Number and pitch of stays in each

4.7 1/2"

Working pressure by rules

215

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

Yes

Lloyd's Register

Fowles &amp; Co

1067



# 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 Safety
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 boiler 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	Plates
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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— 2 Connecting Rod bolts, 1 each for top end - ditto for bottom end  
2 main bearing bolts 1 set of coupling bolts 1 set of End, Balge Pump Valves. 1 set of  
Piston Rings 1 Propeller shaft 1 crank shaft (one throw) 1 quantity of assorted bolts, nuts, washers of  
various sizes.

DUNGLAVIE & JACKSON, Limited.

The foregoing is a correct description,

James Jackson, Director, Manufacturer.

Dates of Survey while building	During progress of work in shops --	1914 Aug. 13-17-24 Sept. 1-10-16-21 Oct. 2-7-13-19-22-28 Nov. 3-12-17-27-30 Dec. 7-14-1915 Jan. 12-18-19-26
	During erection on board vessel --	Feb. 3-9-16-19-25 Mar. 1-5-10-11-18-23-25-30 Apr. 1-7-8-13-15-26 May 10-24 June 2-16-22-28 July 5-7-12-13
	Total No. of visits	61

Is the approved plan of main boiler forwarded herewith ☒ Yes

" " " donkey " " " ☒ Yes

Dates of Examination of principal parts	Cylinders	7-12-14	Slides	12-11-14	Covers	10-9-14	Pistons	19-10-14	Rods	24-5-15	
Connecting rods	24-5-15	Crank shaft	14-12-14	Thrust shaft	27-11-14	Tunnel shafts	14-12-14	Screw shaft	16-6-15	Propeller	16-6-15
Stern tube	16-6-15	Steam pipes tested	13-7-15	Engine and boiler seatings	14-12-14	Engines holding down bolts	9-8-15				
Completion of pumping arrangements	9-8-15	Boilers fixed	7-7-15	Engines tried under steam	16-9-15						
Main boiler safety valves adjusted	6-9-15	Thickness of adjusting washers	FR 1/2 AY 5 PY 3/8 SY 1/2 PY 7/16 SY 3/8 FR 9/16 AY 3/8								
Material of Crank shaft	S	Identification Mark on Do.	LLOYDS WGM 452	Material of Thrust shaft	S	Identification Mark on Do.	LLOYDS WGM 452				
Material of Tunnel shafts	S	Identification Marks on Do.	452	Material of Screw shafts	S	Identification Marks on Do.					
Material of Steam Pipes	Steel	Test pressure	600 lbs								

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

These engines & boilers have been built under special survey in accordance with the approved plans, the workmanship & material are of good quality. The machinery is eligible in my opinion for the record of L M C 9-15.

Glasgow

Certificate (if required) to be sent to Committee's Minute.

It is submitted that this vessel is eligible for THE RECORD + L M C 9.15. F.D.

The amount of Entry Fee	£ 3 : -	When applied for,	13/9/15
Special	£ 50 : -	When received,	14/9/15
Donkey Boiler Fee	£ : -		
Travelling Expenses (if any)	£ : -		

W. Gordon-Muncliv  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 21 SEP. 1915

Assigned + L. M. C. 9.15 F.D.