

REPORT ON MACHINERY.

No. 34609

Date of writing Report 31. 10. 1914 When handed in at Local Office

Received at London Office

No. in Survey held at Paisley

Port of GLASGOW

WED. NOV. 25. 1914

Reg. Book.

Date, First Survey 26/5/14

Last Survey 20/11/1914

on the Screw Steam Hopper Barge No. 428

(Number of Visits 25) Gross 623

Master

Built at Paisley

By whom built Fleming Ferguson & Co. Ltd.

Tons Net 243

Engines made at Paisley

By whom made

Fleming Ferguson & Co. Ltd. (428)

When made 1914

Boilers made at ditto

By whom made

ditto

when made 1914

Registered Horse Power

Owners Dundee Harbour Trust

Port belonging to Dundee

Nom. Horse Power as per Section 28 106

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 15"-24"-40"

Length of Stroke 27

Revs. per minute 105

Dia. of Screw shaft as per rule 8.1

Material of screw shaft S

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 34

Dia. of Tunnel shaft as per rule 7.39

Dia. of Crank shaft journals as per rule 7.76

Dia. of Crank pin 8 3/8

Size of Crank webs 5 1/2 x 16

Dia. of thrust shaft under

collars 8" Dia. of screw 9.6"

Pitch of Screw 11.0"

No. of Blades 4

State whether moveable No

Total surface 404

No. of Feed pumps 2

Diameter of ditto 2 3/4"

Stroke 15"

Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2

Diameter of ditto 2 3/4"

Stroke 15"

Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2

Sizes of Pumps 6 1/4 x 16

6 1/4 x 6"

Dupl

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

In Engine Room One 2"

One 2" in Forehold

In Holds, &c. Three 2" in stokehole

No. of Bilge Injections 1

sizes 4"

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size Yes 2 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 No

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 None

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 16. 10. 14

of Stern Tube 16. 10. 14

Screw shaft and Propeller 16. 10. 14

Is the Screw Shaft Tunnel watertight None

Is it fitted with a watertight door

worked from

BOILERS, &c.—(Letter for record R)

Manufacturers of Steel

Clyde Iron Works Co. Ltd. & Doole & Co. Ltd.

Total Heating Surface of Boilers 1860

Is Forced Draft fitted No

No. and Description of Boilers One Single Ended

Working Pressure 180

Tested by hydraulic pressure to 360

Date of test 23. 10. 14

No. of Certificate 12909

Can each boiler be worked separately

Area of fire grate in each boiler 56

No. and Description of Safety Valves to

each boiler 2 Dried Springs

Area of each valve 5.938

Pressure to which they are adjusted 185

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 21"

Mean dia. of boilers 14. 1 1/2"

Length 10-6"

Material of shell plates S

Thickness 1 1/2"

Range of tensile strength 28/32

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams DR

long. seams TR. DBS

Diameter of rivet holes in long. seams 13/16"

Pitch of rivets 8 1/8"

Top of plates or width of butt straps 1 1/2"

Per centages of strength of longitudinal joint rivets 87.7%

plate 85.5%

Working pressure of shell by rules 185

Size of manhole in shell 16 x 12"

Size of compensating ring 7 1/8 x 1 1/2"

No. and Description of Furnaces in each boiler 3 Corrugated

Material S

Outside diameter 3.6 3/4"

Length of plain part top

Thickness of plates crown 17/32

Description of longitudinal joint mild

No. of strengthening rings

Working pressure of furnace by the rules 191

Combustion chamber plates: Material S

Thickness: Sides 2 1/32"

Back 5/8"

Top 2 1/32"

Bottom 2 5/32"

Pitch of stays to ditto: Sides 8 1/4 x 9 3/4"

Back 8 1/4 x 8 1/2"

Top 8 x 10"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules 182

Material of stays Iron

Area at smallest part 203.36

Area supported by each stay 80.0"

Working pressure by rules 189

End plates in steam space:

Material S

Thickness 1 1/8"

Pitch of stays 17 x 18"

How are stays secured DN

Working pressure by rules 185

Material of stays S

Area at smallest part 5.56"

Area supported by each stay 306.0"

Working pressure by rules 189

Material of Front plates at bottom S

Thickness 2 5/32"

Material of Lower back plate S

Thickness 5/8 DP

Greatest pitch of stays 8 1/4 x 15 1/4"

Working pressure of plate by rules 189

Diameter of tubes 3 1/4"

Pitch of tubes 4 1/4"

Material of tube plates S

Thickness: Front 2 5/32"

Back 2 5/32"

Mean pitch of stays 10 5/8"

Pitch across wide water spaces 15 1/8"

Working pressures by rules 189

Girders to Chamber tops: Material S

Depth and

thickness of girder at centre 8 1/4 x 13 1/4 (2)

Length as per rule 2. 8 5/8"

Distance apart 8"

Number and pitch of stays in each 2 at 10"

Working pressure by rules 184

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

014738-04250-0065

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
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 boilers 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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays
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 nuts for top end, bolts for bottom end. 2 Main Bearing bolts
 1 Set of Coupling bolts 1 Set of Feed Pump Valves. 1 Set of Piston Rings
 A quantity of assorted bolts nuts & iron of various sizes

The foregoing is a correct description,

Manufacturer.

James & Ferguson, Ltd.
Glasgow

Dates of Survey while building
 During progress of work in shops -- 1914 May 26 - June 10 - 16 - 26 - July 10 - 17 - 28 Aug 7 - 26 - 31 Sept 2 - 9 - 15 - 23 - Oct 6 - 16 - 21
 During erection on board vessel -- Oct 23 - 27 - 29 Nov 2 - 10 - 13 - 16 - 20
 Total No. of visits 25

Is the approved plan of main boiler forwarded herewith

" " " donkey " " " None

Dates of Examination of principal parts—Cylinders 23. 7. 14 Slides 7. 8. 14 Covers 7. 8. 14 Pistons 31. 8. 14 Rods 10. 6. 14
 Connecting rods 10. 6. 14 Crank shaft 16. 10. 14 Thrust shaft 17. 7. 14 Tunnel shafts None Screw shaft 17. 7. 14 Propeller 15. 9. 14
 Stern tube 15. 9. 14 Steam pipes tested 2. 11. 14 Engine and boiler seatings 16. 10. 14 Engines holding down bolts 29. 10. 14
 Completion of pumping arrangements 16. 11. 14 Boilers fixed 29. 10. 14 Engines tried under steam 20. 11. 14
 Main boiler safety valves adjusted 13. 11. 14 Thickness of adjusting washers P 15/32 S 13/32
 Material of Crank shaft S Identification Mark on Do. LLOYDS W.G.M H28
 Material of Tunnel shafts None Identification Marks on Do. H28
 Material of Steam Pipes Copper Test pressure 360lb

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 plan & the workmanship - material are of good quality
 The Machinery is eligible in my opinion for the Record of. L.M.C 11-14

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 11-14.

The amount of Entry Fee .. £ 2 : - :
 Special .. £ 15. 18 - :
 Donkey Boiler Fee .. £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 23/11/14
 When received, 24/11/14

Committee's Minute

GLASGOW

24 NOV. 1914

Assigned + L.M.C. 11, 14.

MACHINERY CERTIFICATE
 DATED 25/11/14

Wm Gordon Michie
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Lloyd's Register
 Foundation

GLASGOW

Certificate (if required) to be sent to
 The Surveyors are requested not to write on or below the space for Committee's Minute.