

## REPORT ON MACHINERY.

No. 24239  
TUES. 24 JUL 1906

Port of Glasgow

Received at London Office

19

No. in Survey held at Paisley  
Reg. Book.Date, first Survey 9<sup>th</sup> Oct 1905 Last Survey July 12<sup>th</sup> 1906

(Number of Visits 2)

on the

Dredger 2<sup>nd</sup> 350

Master Built at Paisley By whom built Fleming &amp; Ferguson Tons Gross 1906

Engines made at Paisley By whom made Fleming & Ferguson (2<sup>nd</sup> 350) when made 1906

Boilers made at do By whom made do when made 1906

Registered Horse Power

Owners

Port belonging to Tamar

Nom. Horse Power as per Section 28 117

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted Yes

ENGINES, &amp;c.—Description of Engines Twin &amp; New Triple Expansion No. of Cylinders 6 No. of Cranks 6

Dia. of Cylinders (12" 18" 30") 2 Length of Stroke 24" Revs. per minute 6.9" Material of Steel

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 painted — Length of stern bush 2-4

Dia. of Tunnel shaft as per rule 5.85" Dia. of Crank shaft journals as per rule 6.14" Dia. of Crank pin 6 1/2" Size of Crank webs 4 1/2" x 2 1/4" Dia. of thrust shaft under

collars 6 3/4" Dia. of screw 8-0" Pitch of Screw 10-0" No. of Blades 3 State whether moveable No Total surface 21" each

No. of Feed pumps 1 Diameter of ditto 2 1/4" Stroke 15" Can one be overhauled while the other is at work } each engine

No. of Bilge pumps 1 Diameter of ditto 2 1/4" Stroke 15" Can one be overhauled while the other is at work }

No. of Donkey Engines 1 Sizes of Pumps 6" x 4" x 6" duplex No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2-2" 1-2 1/4" In Holds, &amp;c. 2-2"

No. of Bilge Injections 2 sizes 3 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room &amp; 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

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 21.5.06

Dates of examination of completion of fitting of Sea Connections 9 of Stern Tube 8 Screw shaft and Propeller 14.6.06

Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door — worked from W.T. Bulkhead

BOILERS, &amp;c.—(Letter for record 18) Manufacturers of Steel Clyde Bridge Steel Company Ltd.

Total Heating Surface of Boilers 2196.8 Is Forced Draft fitted No No. and Description of Boilers Two Single Ended

Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 24.3.06 No. of Certificate 8042

Can each boiler be worked separately Yes Area of fire grate in each boiler 39 No. and Description of Safety Valves to

each boiler 2 Spring Area of each valve 4.9" Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork stokehold Mean dia. of boilers 11-0" Length 9-6" Material of shell plates steel

Thickness 17/16" Range of tensile strength 27-32 lbs Are the shell plates welded or flanged No Descrip. of riveting: cir. seams D. R. L.

long. seams D. B. S. Diameter of rivet holes in long. seams 1" Pitch of rivets 7 1/4" Lap of plates or width of butt straps 15"

Per centages of strength of longitudinal joint rivets 86.22 Working pressure of shell by rules 178 lbs Size of manhole in shell 16 x 12

Size of compensating ring 2-6 x 2-2 x 17/16 No. and Description of Furnaces in each boiler 2 Fox's Material steel Outside diameter 3-7 1/16

Length of plain part top 15" Thickness of plates crown 32" Description of longitudinal joint weld No. of strengthening rings

Working pressure of furnace by the rules 160 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 23/32"

Pitch of stays to ditto: Sides 9 x 7 1/2" Back 8 1/2 x 8 1/4" Top 8 1/2 x 8 1/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 161 lbs

Material of stays steel Diameter at smallest part 1.45" Area supported by each stay 6.8" Working pressure by rules 170 lbs End plates in steam space:

Material steel Thickness 7/8" Pitch of stays 16 x 16 1/2" How are stays secured D. nuts Working pressure by rules 163 Material of stays steel

Diameter at smallest part 5.05" Area supported by each stay 26.4" Working pressure by rules 190 Material of Front plates at bottom steel

Thickness 3/4" Material of Lower back plate steel Thickness 5/8" Greatest pitch of stays 13" Working pressure of plate by rules 160 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 11 1/2"

Pitch across wide water spaces 13 1/4" Working pressures by rules 164 lbs Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 6 3/4" x 11" x 2 Length as per rule 25 1/2" Distance apart 4" Number and pitch of stays in each 2-9"

Working pressure by rules 177 lbs Superheater or Steam chest; how connected to boiler None 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

W1240-0013

Lloyd's Register  
Foundation

# VERTICAL DONKEY BOILER—

Manufacturers of Steel

None

No.	Description	By whom made	When made	Where fixed
Made at	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area
Working pressure	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment
Valves	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	Rivets
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	Stayed by	Dates of survey	
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes		

SPARE GEAR. State the articles supplied:— crank pin brasses, air pump rod & bucket, circulating pump rod & bucket, air & circulating pump head valves seats & guards, set of piston rings, etc., & the bolts etc. required by the Rules.

The foregoing is a correct description,

FOR FLEMING & FERGUSON, LIMITED.

Manufacturer.

Regd. W. H. Mear, Esq.

Dates of Survey while building	During progress of work in shops—	1905. Oct 9. 23. Nov 1. 9. 17. Dec 4. 11. 15. 18. 26. 1906 Jan 10. 11. 16. Feb 2.
	During erection on board vessel—	8. 16. 20. 24. June 8. 29. July 12.
Total No. of visits		21

Is the approved plan of main boiler forwarded herewith

Yes

" " " donkey " " " None

Dates of Examination of principal parts—	Cylinders 22. 2. 0. 6. 4.	Slides 22. 2. 0. 6. 4.	Covers 22. 2. 0. 6. 4.	Pistons 22. 2. 0. 6. 4.	Rods 24. 3. 0. 6. 4.
Connecting rods 24. 3. 0. 6. 4.	Crank shaft 23. 10. 0. 5. 4.	Thrust shaft 26. 1. 0. 6. 4.	Tunnel shafts 14. 1. 0. 6. 4.	Screw shaft 19. 1. 0. 6. 4.	Propeller 21. 5. 0. 6. 4.
Stern tube 24. 4. 0. 6. 4.	Steam pipes tested 4. 6. 0. 6. 4.	Engine and boiler seatings 19. 6. 0. 6. 4.	Engines holding down bolts 19. 6. 0. 6. 4.		
Completion of pumping arrangements 12. 7. 0. 6. 4.	Boilers fixed 26. 6. 0. 6. 4.	Engines tried under steam 26. 6. 0. 6. 4.			
Main boiler safety valves adjusted 26. 6. 0. 6. 4.	Thickness of adjusting washers Port Bld. P 3/8 f. 3 1/2. Starb. Bld. 13/32 f. 13/32				
Material of Crank shaft steel	Identification Mark on Do.	Material of Thrust shaft steel	Identification Mark on Do.		
Material of Tunnel shafts steel	Identification Marks on Do.	Material of Screw shafts steel	Identification Marks on Do.		
Material of Steam Pipes Copper		Test pressure 320 lbs			

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

The engines & boilers of this dredger have been constructed under Special Survey & are of good materials & workmanship. They have been securely fitted on board & satisfactorily tried under steam.

This vessel is in my opinion eligible to have notation — \* L.M.C. 7.06 (in red) in the Register Book.

It is submitted that this vessel is eligible for THE RECORD & L.M.C. 7.06. ELEC. LIGHT.

The amount of Entry Fee.	£ 2	When applied for.	21. JUL 1906
Special	£ 17	When received.	24. 7. 06
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

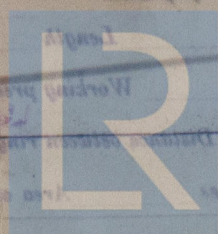
H. Gardner-Smith  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

+ L.M.C. 7.06

MACHINERY CERTIFICATE  
WRITTEN 7.4.7.06



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