

No. 24

BRITISH CORPORATION FOR THE SURVEY
AND
REGISTRY OF SHIPPING.

Report No. 19 No. in Register Book HHH

OWNERS-LIMERICK HARBOUR COMMISSIONERS

S. S. ERIN - GO - BRAGH

Makers of Boilers Fleming and Ferguson

Makers of Engines Fleming and Ferguson

Works No. 189.

MACHINERY.



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004009-004018-0088

BRITISH CORPORATION FOR THE SURVEY AND
REGISTRY OF SHIPPING.

Surveyor's Report on the New Machinery of the

Gentle Well Steam Dredger Erin-go-Bragh.

No. in Register Book *444.*

Report No. *17.*

Received at Glasgow Office *22.3.94.*

Surveyor's District *Glasgow*

Works No. *189.*

Survey held at *Paisley*

First Visit *17/10/93*

Last Visit *22.3.94*

Total Visits *15*

Name of Steamer *Erin-go-Bragh.*

Gross Tons *386*

R.H.P. ☒

When Built *3/94*

Where Built *Paisley*

Owner *Limerick Harbour Commissioners*

Port of Registry *Limerick*

Engines made by *Fleming & Ferguson*

in *3/94*

Where made *Paisley*

Boiler made by *Fleming & Ferguson*

in *3/94*

Where made *Paisley*

Donkey Boiler made by *home*

in ☒

Where made ☒

ENGINES.

Description *Triple expansion on two cranks*

No. of Cyls. *3*

Diameter *13 - 22 - 34*

Stroke *24*

Cub. feet in L. P. Cylinder *12.61*

Revs. per minute

Diameter of Crank Shaft *6 1/2*

thrust Shaft *6 1/2*

Propeller Shaft *6 1/2*

and Length of Crank Pin *6 1/2 dia x 6 1/2 long*

Shaft Journals *6 1/2 dia x 4 long*

Size of Crank Webs *13x4. 3 1/4 round pins*

Is Crank Shaft built?

built

Diameter of Propeller *8-0*

Pitch *10-0*

No. of Blades *3*

Fitted or Solid *Solid*

Material of Blades and Boss *cast iron*

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Total Surface *16.5 square feet*
 No. of Feed Pumps or Engines *1* Diameter *2 1/2* Stroke *12 3/4*
 Can one be overhauled while the other is at work? *on pump*
 Where do they pump from and to? *from hotwell to boilers*
 No. of Donkey Engines *1 Duplex* Diameter of Pump and Stroke *2 1/4 x 4*
 Where do they pump from and to? *from sea, bilge & fore holds discharges overboard, deck & to boiler*
 No. of Bilge Pumps or Engines *1* Diameter *2 1/2* Stroke *12 3/4*
 Can one be overhauled while the other is at work? *one pump*
 Where do they pump from and to? *from bilge, engine room & fore hold & discharges overboard*
 No. and kind of Sluices on Engine Room Bulkheads *none*
 Are they always accessible?
 Are all the Bilge Suction Pipes fitted with Roses, and are these always accessible? *Yes*
 No. and Size of Bilge Injections connected *1 3 dia*
 Has Circulating Pump a Bilge Suction with Non-return Valve? *Yes*
 Are Circulating and other Pumps worked by Main Engines? *Yes*
 Are all Sea Connections fitted direct on to Vessel's plating? *Yes*
 Are they Valves or Cocks? *Both* Placed so as to be easily seen and accessible? *Yes*
 Are the Discharge Chests fitted above the Deep Load Line? *Yes*
 Are they fitted direct on Vessel's side with Non-return Valves, easily accessible? *Yes*
 Are all Valves, Cocks, or Pipes, in connection with the Machinery, accessible? *Yes*
 Are the Valves, Cocks, and Pipes so arranged as to absolutely prevent any unintentional connection between the Sea and the Bilges? *Yes*
 Are all Blow-off Cocks fitted with Spigots passing through the Vessel's plating, and having Covering Plates or Flanges on the outside? *Yes*
 Are efficient Rose Plates or Grids fitted to the Sea Suctions? *Yes*
 What Pipes are carried through Bankers or Holds, and how are they protected? *The two fore*

hold, suction one on each side of ship properly covered
 Is the Shaft Tunnel fitted with an efficient Watertight Door? *no tunnel*

From what Deck is it worked?

Are there any Doors in Stokehold Bulkheads?

From what Deck are they worked?

Are these Doors in good working condition?

MAIN BOILERS.

Iron or Steel *steel*
 No. of Boilers *1* No. of Furnaces in each *2*
 Description of Boilers, single or double ended, or any Superheating Arrangement *Single*
 Diameter of Boilers *10-0 inside* Length *9-6*
 Working Pressure *160* Hydraulic Test *320*
 Can Boilers be worked separately? *one boiler*
 Can Superheater be shut off while Boiler is working? *none*
 Square feet of Grate Surface in ~~each~~ Boiler *32.76 square feet*
 " " Heating " " *861.75*
 No. and kind of Safety Valves on ~~each~~ Boiler *2 valves lockburn*
 Diameter and Area of each Safety Valve *2 1/4 dia 3.97 area*
 No., Diameter, and Area of Safety Valves ~~on~~ Superheater *none*
 Are the Valves fitted with Easing Gear? *Yes*
 Thickness of Shell Plates *15/16*
 Diameter of Rivets *holes 17/16* Holes Punched or Drilled *drilled*
 Description of Riveting in Shell *all double riveted*
 Circumferential Seams *double riveted laps* Long Seams *double riveted butt straps*
 Pitch of Rivets *4 3/4 long 1 1/4 in* Width of Overlap *in 6*
 Percentage of Strength in Long Seams *74*
 Working Pressure by Rules *161.8*
 Size of Manhole in Shell *16 1/2 x 12* Size of Compensating Rings *2-6 x 2 1/2 x 1*

Description of Furnaces *Adamson's with one ring in centre*

Outside Diameter of Furnace $36\frac{7}{8}$ Inside ditto $35\frac{3}{4}$ Length between Tube Plates $6-6$

Thickness of Plates $9/16$

If Adamson Rings, state greatest distance between the Rings *one ring*

Working Pressure by Rules 153 lbs

Combustion Chamber distance, front to back $2-2\frac{1}{2}$

Thickness of Plating, Back $9/16$ Sides $9/16$ Bottom $9/16$

Pitch of ^{Stays} Sides $7\frac{1}{2} \times 7\frac{1}{2}$ Back $7\frac{1}{2} \times 7\frac{1}{2}$ Top $7\frac{1}{2} \times 7\frac{1}{2}$

Top Girders, No. ~~over~~ Chamber 12 Depth $6\frac{3}{4}$ Thickness $9/8$ two plates

Diameter of Screwed Stays $1\frac{3}{8} + 1\frac{1}{2}$ If fitted with Nuts outside and inside? *but inside*

Working Pressure by Rules 207

Thickness of End Plates in Steam Space $3/4$

Pitch of Stays on End Plates $14 \times 14\frac{1}{4}$

Effective Diameter of Stays (smallest part) $2-16$ dia at bot of head

How are Stays secured? *double nuts & riveted strips outside end plate*

Working Pressure by Rules 160 lbs

Thickness of Front ^{end} ~~and~~ Plates at Bottom $3/4$

Back $1/16$

External Diameter and thickness of Tubes (Plain and Stay) $3 \text{ dia } N^{\circ} 9 \text{ B.W.G. plain, stay tubes } 9/16 \text{ thick}$

Pitch of Tubes $4\frac{1}{8} \times 4\frac{1}{8}$

No. of Plain Tubes in each Stack $3 \text{ nests, } 25 \text{ in wings } 48 \text{ in centre}$

Stay $3 - 12 \text{ in wings } 16 \text{ in centre}$

How are they secured to Tube Plates? *screwed into plates*

Thickness of Tube Plates, Front $3/4$ Back $3/4$

Spaces between Stacks of Tubes

Least distance between Side Stacks and Boiler Shell

Distance between Top of Furnaces and Bottom Row of Tubes, Side Furnaces

Centre Furnace *none*

Dimensions of Steam Chest or Superheater

Thickness of Plating of ditto Riveting

Is the Staying Longitudinal or otherwise?

How connected to Boiler?

Working Pressure by Rules

DONKEY BOILER.

no donkey boiler.

Iron or Steel

Description of Boiler

Diameter Length

Working Pressure Hydraulic Test, and when applied

Square Feet of Grate Surface

Heating

Thickness of Shell Plating

Description of Riveting

Diameter of Rivets Pitch

Holes Punched or Drilled

Lap of Plating

Percentage of strength of Joint

Thickness of Crown Plates

Side

Description of Staying

Height of Furnace Crown above Fire Grate

Diameter of Uptake Tube

Material Thickness

Number of Water Tubes Material

Diameter Thickness

Number and kind of Safety Valves

Diameter and Area of each

If fitted with Easing Gear?



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If the Donkey Boiler is Tubular, the additional particulars as required for Main Boilers must be given

DONKEY BOILER

GENERAL CONSTRUCTION.

Have all the requirements under Section 33 of the Rules, paragraphs 1 to 13, been complied with in every respect?

If not, give full details of the points of difference, and state when the same were sanctioned by the Chief

Surveyor

Instead of test cocks being put on the Boilers, an additional water gauge with fittings complete was fitted Sanctioned by the Chief Surveyor 8/12/93.

State articles of Spare Gear supplied

1 Connecting rod top end bolt.
1 Connecting rod bottom end bolt. 2 Main bearing bolts. 1 Set coupling bolts. 1 Set piston rings. 2 Gauge glasses. 6 Cylinder cover studs. 6 Valve chest cover studs.
1 Set feed & bilge pump valves, Bolts, nuts, air & air pump valves, propeller, 1/2 doz gauge glasses,

& iron assorted. 1 Two ton derrick crane, 2 hunting links, 6 intermediate links, 36 pins & cottars, 2 bucket rollers, 4 bushes & brackets for do, 2 pinions for bow & stern winches, 2 dytches, 1 pinion for upper tumbler shaft, do intermediate shaft, 1 lower tumbler shaft, 1 set fire bars, 2 4 fathom sling chain
Give for each Main Boiler and for Donkey Boiler respectively the dates of Hydraulic Testing and Valve Setting

and Trial of Machinery under Steam. If the Trial was conducted at the Wharf and not at Sea, the Surveyor

should state how long he was in attendance

Boiler tested by hydraulic pressure 14/10/93.
Safety valves adjusted 22/3/94.
Main steam pipe tested 5/12/93.
Trial trip 21/3/94.

Are the Steam Pumping Arrangements in accordance with the approved Plan, and Section 34 of the Rules? If

not, state in what respect they differ, and when such differences were sanctioned by the Chief Surveyor

In accordance with the approved plan

Are the Materials used in the construction of Boilers and Engines sound and trustworthy?

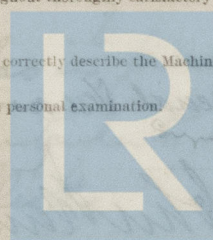
Yes

Is the workmanship throughout thoroughly satisfactory?

Yes

The above particulars correctly describe the Machinery of the S.S.

as ascertained by me from personal examination



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Engineer Surveyors to the British Corporation for the
Survey and Registry of Shipping.

Fees— *Special Fee for which see Report on Hull*

MAIN BOILERS.

H.S. 861.75 Sq. ft.

G.S. 32.76

DONKEY BOILERS.

H.S. — Sq. ft.

G.S. —

ENGINES.

L. P. C. 12.64 Cub. ft.

Testing, &c. ...

Expenses ...

Total ...

It is submitted that this Report be approved.

H. J. Comrie. Dutton
Chief Surveyor.
30/3/94

Approved by the Committee,

for M.B.S.* Class on
4th April 1894.

Fees applied for included in Special Fee on Hull Report

Fees paid

John Manning
Secretary.

SKETCHES OF SPECIAL ARRANGEMENTS, &c.

Dia of air pump 11" stroke 12 3/4"

" " cir " 6 " 12 3/4"

Main steam pipe 4" dia ho 6 B.W.G.

No of dredging buckets 33

Capacity of each bucket 10 cubic ft.

Capacity of hopper 400 tons

3 Spare buckets

18 " Cast steel picks

The Undersigned attended
Dredging Trials of this Vessel in
the River Cant on the 20th March 1894
& Speed Trials on the following
day in the Eneclach & Loch Loag.
The work done upon each occasion
being entirely satisfactory & carried
out also in presence of Company's
Superintendent Mr Maroney C. E. &
Mr Elliott.

H. J. Comrie
Chief Surveyor



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