

REPORT ON MACHINERY.

Port of

Belfast

FRI, 14 OCT 1898

Received at London Office

18

No. in Survey held at
Reg. Book.

Date, first Survey

13th January 1898

Last Survey

October 6 - 1898

(Number of Visits)

on the

S.S. "Hippingham Grange"

Gross 5789
Tons Net 3793

Master

Built at

Belfast

By whom built

Wokman Clark & Co. Ltd.

When built

1898

Engines made at

Belfast

By whom made

Wokman Clark & Co. Ltd.

when made

1898

Boilers made at

Belfast

By whom made

Wokman Clark & Co. Ltd.

when made

1898

Registered Horse Power

650

Owners

Houlder Bros

Port belonging to

London

Nom. Horse Power as per Section 28

513

ENGINES, &c.—

Description of Engines

Triple Expansion

No. of Cylinders

Three

Diameter of Cylinders

27" - 44" - 74"

Length of Stroke

54"

Revolutions per minute

73

Diameter of Screw shaft

as per rule 13.9"
as fitted 14.5"

Diameter of Tunnel shaft

as per rule 13.2"
as fitted 13.76"

Diameter of Crank shaft journals

14.5"

Diameter of Crank pin

14.5"

Size of Crank webs

19 3/4" x 10"

Diameter of screw

18" - 0"

Pitch of screw

18" - 6"

No. of blades

Four

State whether moveable

Yes

Total surface

92 sq ft

No. of Feed pumps

Two

Diameter of ditto

Stroke

29"

Can one be overhauled while the other is at work

Yes

No. of Bilge pumps

Two

Diameter of ditto

Stroke

27"

Can one be overhauled while the other is at work

Yes

No. of Donkey Engines

Two

Sizes of Pumps

6" x 4 1/2" x 6"
8" x 10" x 10"

General

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

In Engine Room

Three - 3 1/2"

In Holds, &c.

Nine - 8 1/2"

Two - 2 1/2"

No. of bilge injections

Two sizes 8"

Connected to condenser, or to circulating pump

Pump

Is a separate donkey suction fitted in Engine room & size

Yes - 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

Yes

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

Forward Bilge Suctions

How are they protected

Wood casing

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

When were stern tube, propeller, screw shaft, and all connections examined in dry dock

Before launching the screw shaft tunnel watertight

Stated to be

Is it fitted with a watertight door

Yes

worked from

Engine Room Top Platform

BOILERS, &c.—

(Letter for record S)

Total Heating Surface of Boilers

7176 sq ft

No. and Description of Boilers

Three Single Ended, Cylindrical

Working Pressure

180 lbs

Tested by hydraulic pressure to

360 lbs

Date of test

21-7-98

Can each boiler be worked separately

Yes

Area of fire grate in each boiler

56 sq ft

No. and Description of safety valves to

each boiler

Three - Direct Spring

Area of each valve

8.29 sq

Pressure to which they are adjusted

180 lbs

Are they fitted

with easing gear

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

3 ft

Mean diameter of boilers

14' - 9"

Length

11' - 6"

Material of shell plates

Steel

Thickness

1 1/2"

Description of riveting: circum. seams

Double long. seams

Butt Table Riv

Diameter of rivet holes in long. seams

1 1/2"

Pitch of rivets

10"

Lap of plates or width of butt straps

21 1/2"

Percentage of strength of longitudinal joint

rivets 89.6
plate 85.3

Working pressure of shell by rules

201 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

18" x 2 1/4" x 1 1/2"

No. and Description of Furnaces in each boiler

Two - Normal

Material

Steel

Outside diameter

45 1/8"

Length of plain part

top
bottom

Thickness of plates

crown 2 1/8"
bottom 2 1/8"

Description of longitudinal joint

Weld

No. of strengthening rings

5

Working pressure of furnace by the rules

195 lbs

Combustion chamber plates: Material

Steel

Thickness: Sides

2 1/8"

Back

2 1/8"

Top

2 1/8"

Bottom

2 1/8"

Pitch of stays to ditto: Sides

7 3/4" x 7 3/4"

Back

7 3/4" x 7 3/4"

Top

7 3/4" x 7 3/4"

If stays are fitted with nuts or riveted heads

Nuts

Working pressure by rules

182 lbs

Material of stays

Steel

Diameter at smallest part

1 3/8"

Area supported by each stay

60 sq

Working pressure by rules

197 lbs

End plates in steam space:

Material

Steel

Thickness

1 1/8"

Pitch of stays

Various

How are stays secured

Nuts & Washers

Working pressure by rules

213 lbs

Material of stays

Steel

Diameter at smallest part

4 1/8"

Area supported by each stay

228 sq

Working pressure by rules

180 lbs

Material of Front plates at bottom

Steel

Thickness

1"

Material of Lower back plate

Steel

Thickness

3/4"

Greatest pitch of stays

16 approx

Working pressure of plate by rules

180 lbs

Diameter of tubes

2 1/2"

Pitch of tubes

3 3/4" x 3 5/8"

Material of tube plates

Steel

Thickness: Front

3/8"

Back

3/4"

Mean pitch of stays

1 1/2"

Pitch across wide water spaces

1 3/4"

Working pressures by rules

180 lbs

Girders to Chamber tops: Material

Steel

Depth and

Thickness of girder at centre

9 1/2" (3/4" x 2)

Length as per rule

32 3/4"

Distance apart

7 1/2"

Number and pitch of Stays in each

Three - 7 1/4"

Working pressure by rules

200 lbs

Superheater or Steam chest; how connected to boiler

Yes

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

Pitch of rivets

Working pressure of shell by rules

Diameter of flue

Material of flue plates

Thickness

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

Foundation

BEL69-0029

DONKEY BOILER—

Description

Single Ended

Made at *Belfast* By whom made *Workman Clark & Co. Ltd.* When made *1898* Where fixed *Stockholm*
 Working pressure *180 lbs* tested by hydraulic pressure to *360 lbs* No. of Certificate *274* Fire grate area *42.4* Description of safety valves *Direct Spring*
 No. of safety valves *Two* Area of each *4.9* Pressure to which they are adjusted *180 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *12'-0"* Length *10'-0"* Material of shell plates *Steel* Thickness *1 1/2"*
 Description of riveting long. seams *Butt Saddle Rivet* Diameter of rivet holes *1 3/4"* Whether punched or drilled *Drilled* Pitch of rivets *8 1/2"*
 Dia. of stays *2 1/2"* Per centage of strength of joint *83.2* Rivets *83.2* Thickness of shell plates *1 1/2"* Radius of do. *5'* No. of Stays to do *16 x 1/2"*
 Dia. of stays *2 1/2"* Diameter of furnace Top *46 1/4"* Bottom *46 1/4"* Length of furnace *6'-9"* Thickness of furnace plates *3/8"* Description of joint *Weld* Thickness of furnace crown plates *3/8"* Stayed by *Scrawled Stay p/3 diam Riveted* Working pressure of shell by rules *274*
 Working pressure of furnace by rules *190 lbs* Diameter of uptake *✓* Thickness of uptake plates *✓* Thickness of water tubes *5" x 4 1/2"*

SPARE GEAR.

State the articles supplied:— *Spare propeller shaft: two propeller blades cast iron: one third crank shaft: one thrust shaft: one length tunnel shaft: two slide valves: spindles: air pump rod: air pump bushes and set valves: set bottom end bushes: set top end do. spare piston rings for H.P. & I.P. & L.P. & set valves for all pumps: and other gear to our requirements.*

The foregoing is a correct description,
WORKMAN, CLARK & CO., LIMITED Manufacturer.
M. H. Bell

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

Dates of survey while building: During progress of work in shops: *1897-Jan. 13-25, Feb. 8, 24 May 21 June 18 Aug 31 Sept 22, Oct. 1, 6, 27, Feb. 1898, 24, 27*
 During erection on board vessel: *March 1, 15, 23, 28, 29, April 4, 14, 15, 21, 25, 28, May 7, June 21, 24, 29, 30, July 21, Aug 1*
 Total No. of visits: *4, 5, 6, 9, 12, 17, 19, Sept 17, 21, 23, 27, 29, 3, 4, 14, Oct 1, 3, 4, 6* *50 visits*

The machinery of this vessel, which is duplicate of that of the S.S. *Denton* (Guano Report 4648), has been constructed under Special Survey, and is of good material and workmanship; it has been securely fitted on board, and on trial, worked satisfactorily under steam.
 In my opinion, it is eligible for record of *+ L.M.C. 10-98 F.D.*

This vessel is fitted with *Hawden's* System of Forced Draft. The electric light installation has been fitted by *The Globe Electrical Coy., London*; a report will be forwarded later on.
 The photo prints of main and donkey boilers are appended.

It is submitted that this vessel is eligible for THE RECORD. *+ L.M.C. 10, 98 F.D. the Light*

14/10/98

Certificate (if required) to be sent to

The amount of Entry Fee. £ *3* : - : When applied for, *10-10-98*
 Special £ *45* : *13* :
 Donkey Boiler Fee £ : : When received, *13-10-98*
 Travelling Expenses (if any) £ : :
 Committee's Minute
 Assigned

R. J. P. Curd
 Engineer/Surveyor to Lloyd's Register of British & Foreign Shipping

TUES. 18 OCT 1898

FRI. 9 JUN 1899

FRI. 23

MACHINERY CERTIFICATE WRITTEN.

+ L.M.C. 10, 98

7 D Elec. Light