

## REPORT ON MACHINERY.

No. 24575

WED. JAN. 17. 1911

Date of writing Report 9.1.12 When handed in at Local Office 12.1.12 Port of Hull

No. in Survey held at Reg. Book. Hull.

Date, First Survey July 27<sup>th</sup>Last Survey Jan 8<sup>th</sup> 1912

(Number of Visits 35)

36 Tonnage on the S. S. Hawler EPWORTH

Master

Built at Selby.

By whom built Lochrane &amp; Sons

Tons Gross 223

Net 88

When built 1911

Engines made at Hull.

By whom made Amos &amp; Smith Ltd

when made 5

Boilers made at 5

By whom made 5

when made 5

Registered Horse Power

Owners C. H. Northen &amp; S. S. Fotherby &amp; Co.

Port belonging to Hull

Nom. Horse Power as per Section 28 51.

Is Refrigerating Machinery fitted for cargo purposes No

Is Electric Light fitted No

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

Inverted triple expansion

No. of Cylinders 3

No. of Cranks 3

Dia. of Cylinders 10.17.28

Length of Stroke 24"

Revs. per minute 114

Dia. of Screw shaft as per rule 7.2

as fitted 7.2

Material of screw shaft Iron

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 32"

Dia. of Tunnel shaft as per rule 5.76

as fitted 6.2

Dia. of Crank shaft journals as per rule 6.04

as fitted 6.2

Dia. of Crank pin 6.2

Size of Crank webs 23.4

Dia. of thrust shaft under collars 6.2

Dia. of screw 10.0

Pitch of Screw 7.6 mean

No. of Blades 4

State whether moveable No

Total surface 314

No. of Feed pumps one

Diameter of ditto 2.2

Stroke 11

Can one be overhauled while the other is at work

No. of Bilge pumps one

Diameter of ditto 2.2

Stroke 11

Can one be overhauled while the other is at work

No. of Donkey Engines one

Sizes of Pumps 6x3x6

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

In Engine Room 2.2 (For 4" aft)

In Holds, &amp;c. 4.2 (For 4" main beam)

No. of Bilge Injections one sizes 3

Connected to condenser, or to circulating pump pump

Is a separate Donkey Suction fitted in Engine room &amp; size 2.2

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 Hold suction

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

Dates of examination of completion of fitting of Sea Connections 2/10/11

of Stern Tube 2/10/11

Screw shaft and Propeller 2/10/11

Is the Screw Shaft Tunnel watertight No

Is it fitted with a watertight door

worked from

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

Manufacturers of Steel Grange &amp; Co. Ltd. Hull.

Total Heating Surface of Boilers 8724

Is Forced Draft fitted No

No. and Description of Boilers 1. S. F. Multitubular

Working Pressure 200 lb.

Tested by hydraulic pressure to 400 lb.

Date of test 6.12.11

No. of Certificate 1860

Can each boiler be worked separately

Area of fire grate in each boiler 254

No. and Description of Safety Valves to each boiler 2 Spring loaded

Area of each valve 3.14

Pressure to which they are adjusted 205 lb.

Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 7

Mean dia. of boilers 11.0

Length 9.6

Material of shell plates Steel

Thickness 1

Range of tensile strength 29-33 1/2

Are the shell plates welded or flanged No

Descrip. of riveting: cir. seams 8A Lap

long. seams 8B S. S. rivets

Diameter of rivet holes in long. seams 1 1/8

Pitch of rivets 7 1/2

Lap of plates or width of butt straps 16 1/2

Per centages of strength of longitudinal joint rivets 98.5

plate 85

Working pressure of shell by rules 204

Size of manhole in shell 16x12

Size of compensating ring 3 1/2 x 4 1/2

No. and Description of Furnaces in each boiler 2 plain

Material Steel

Outside diameter 3.3

Length of plain part top 6.2

bottom 5.7

Thickness of plates crown 1.47

bottom 1.4

Description of longitudinal joint welded

No. of strengthening rings

Working pressure of furnace by the rules 203

Combustion chamber plates: Material Steel

Thickness: Sides 5/8

Back 5/8

Top 5/8

Bottom 13/16

Pitch of stays to ditto: Sides 7 1/2 x 9

Back 8 1/2 x 7 1/2

Top 9 x 7 1/2

If stays are fitted with nuts or riveted heads Yes

Working pressure by rules 202

Material of stays Steel

Diameter at smallest part 1 1/2 = 2.06

Area supported by each stay 90.50

Working pressure by rules 238

End plates in steam space: Material Steel

Thickness 1

Pitch of stays 14 1/2 x 15

How are stays secured Dr. wash Working pressure by rules 218

Material of stays Steel

Diameter at smallest part 5.05

Area supported by each stay 218

Working pressure by rules 240

Material of Front plates at bottom Steel

Thickness 1

Material of Lower back plate Steel

Thickness 1

Greatest pitch of stays 13 1/2 x 7 1/2

Working pressure of plate by rules 277

Diameter of tubes 3 1/4

Pitch of tubes 4 1/2 x 4 1/2

Material of tube plates Steel

Thickness: Front 1

Back 7/8

Mean pitch of stays 9 1/2

Pitch across wide water spaces 13 1/2

Working pressures by rules 203

Girders to Chamber tops: Material Steel

Depth and thickness of girder at centre 7 1/2 x 1 3/4

Length as per rule 2.7 1/2

Distance apart 7 1/2

Number and pitch of stays in each 209

Working pressure by rules 204

Superheater or Steam chest; how connected to boiler No

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

# 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 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	Rivets Plates
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:— *Two top & two bottom end connecting rod bolts & nuts, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of feed & bilge pump valves, one main & one donkey feed check valve, one set of air pump valves, assorted bolts & nuts etc.*

The foregoing is a correct description, **FOR AMOS & SMITH LTD.**

Manufacturer. *W. H. White*

Managing Director. *W. H. White*

Dates of Survey while building { During progress of work in shops -- } *1911: July 27, Aug 3, 5, 8, 14, Sep 5, 23, 26 Oct 3, 5, 9, 13, 16, 20, 21, 26 Nov 2, 4, 10, 16, 22, 30, Dec 1, 4, 6, 11, 14, 18, 19, 22, 23, 28, 30, 1912: Jan 1, 8.*

{ During erection on board vessel -- } *35.*

Total No. of visits *35.*

Is the approved plan of main boiler forwarded herewith *R/L No 24570*

Dates of Examination of principal parts—Cylinders *11.12.11* Slides *14.12.11* Covers *11.12.11* Pistons *11.12.11* Rods *11.12.11*

Connecting rods *11.12.11* Crank shaft *1.12.11* Thrust shaft *1.12.11* Tunnel shafts *—* Screw shaft *16.10.11* Propeller *16.10.11*

Stern tube *16.10.11* Steam pipes tested *22.12.11* Engine and boiler seatings *18.12.11* Engines holding down bolts *19.12.11*

Completion of pumping arrangements *28.12.11* Boilers fixed *28.12.11* Engines tried under steam *28.12.11*

Main boiler safety valves adjusted *28.12.11* Thickness of adjusting washers *P5 5-6*

Material of Crank shaft *Steel* Identification Mark on Do. *821 1.12.11* Material of Thrust shaft *Steel* Identification Mark on Do. *821 1.12.11*

Material of Tunnel shafts *—* Identification Marks on Do. *5-6* Material of Screw shafts *Iron* Identification Marks on Do. *821 16.10.11*

Material of Steam Pipes *Solid drawn copper* Test pressure *40 lb.*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The machinery & boiler of this vessel have been constructed under Special Survey. are of good material & workmanship & have been fitted & secured on board in accordance with the Rules. They are now in good working condition & respect fully submitted as being eligible in my opinion to have record of T.L.M.C. 1-12 in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. T.L.M.C. 1-12.

The amount of Entry Fee .. £ *1.00* When applied for, *16-1-1912*

Special .. £ *8.00*

Donkey Boiler Fee .. £ *—*

Travelling Expenses (if any) £ *8.2* When received, *31.1.1912*

Committee's Minute

Assigned

FRI. JAN. 19. 1912

*+ L/R 1.12*

*John W. Foyne*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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