

REPORT ON MACHINERY.

No. 4313

Port of

Grimby

Received at London **WED. 18 JUL 1906**

No. in Survey held at

Date, first Survey *22 November 1905* Last Survey *16 July 1906*

(Number of Visits *37*)

on the

Steam Trawler HELCIA

Gross Tons *230*

Master

W. Sandall

Built at

Sally

By whom built

Cochran & Sons

Net Tons *86*

When built

1906

Engines made at

Grimby

By whom made

J. Central Co. of Eng. & Ship. Co.

when made

1906

Boilers made at

Hull & Co.

By whom made

Central Marine & Engine Co.

when made

1906

Registered Horse Power

76

Owners *Rushworth & Co.*

Port belonging to

Grimby

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

Engines, &c.—Description of Engines

Triple Exp. Surf. End.

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders *12 1/4 22 35*

Length of Stroke *24*

Revs. per minute *110*

Dia. of Screw shaft

7 1/2

Material of screw shaft

Iron

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

Yes

the propeller boss *Yes* If the liner is in more than one length are the joints burned *Yes* 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

Yes

If two

are fitted, is the shaft lapped or protected between the liners

Length of stern bush

3'0"

Dia. of Tunnel shaft

7'0"

Dia. of Crank shaft journals

6'7"

Dia. of Crank pin

7'

Size of Crank webs

4'13"

Dia. of thrust shaft under

Blades

7'

Dia. of screw

8'6"

Pitch of Screw

11'0"

No. of Blades

4

State whether moveable

no

Total surface

28'0"

No. of Feed pumps

1

Diameter of ditto

24"

Stroke

12"

Can one be overhauled while the other is at work

No. of Bilge pumps

1

Diameter of ditto

3'

Stroke

12"

Can one be overhauled while the other is at work

No. of Donkey Engines

1

Sizes of Pumps

3 1/2 x 6 stroke

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

Engine Room

San filger & Hotwell

2'0"

In Holds, &c.

2'0"

No. of Bilge Injections

1

sizes

2 3/4

Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size

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

Cocks

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

That pipes are carried through the bunkers

2'0" room 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

6th June 1906

Stern Tube

6th June 1906

Screw shaft and Propeller

6th June 1906

the Screw Shaft Tunnel watertight

no tunnel

is it fitted with a watertight door

Yes

worked from

BOILERS, &c.—(Letter for record)

Manufacturers of Steel

Total Heating Surface of Boilers

Is Forced Draft fitted

No. and Description of Boilers

Working Pressure

Tested by hydraulic pressure

Date of test

No. of Certificate

Can each boiler be worked separately

Area of fire grate in each boiler

No. and Description of Safety Valves to

each boiler

Area of each valve

Pressure to which they are adjusted

Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork

Mean dia. of boilers

Length

Material of shell plates

Thickness

Range of tensile strength

Are the shell plates welded or flanged

Descrip. of riveting: cir. seams

Long. seams

Diameter of rivet holes in long. seams

Pitch of rivets

Lap of plates or width of butt straps

Percentage of strength of longitudinal joint

Working pressure of shell by rules

Size of manhole in shell

Size of compensating ring

No. and Description of Furnaces in each boiler

Material

Outside diameter

Length of plain part

top

bottom

Thickness of plates

top

bottom

Description of longitudinal joint

No. of strengthening rings

Working pressure of furnace by the rules

Combustion chamber plates: Material

Thickness: Sides

Back

Top

If stays are fitted with nuts or riveted heads

Working pressure by rules

Pitch of stays to ditto: Sides

Back

Top

Area supported by each stay

Working pressure by rules

End plates in steam space:

Material of stays

Diameter at smallest part

How are stays secured

Working pressure by rules

Material of stays

Material

Thickness

Pitch of stays

Area supported by each stay

Working pressure by rules

Material of Front plates at bottom

Diameter at smallest part

Working pressure of plate by rules

Material of Lower back plate

Thickness

Greatest pitch of stays

Working pressure by rules

Material of flue plates

Thickness

Mean pitch of stays

Back

Front

Material of tube plates

Thickness: Front

Back

Mean pitch of stays

Depth and

Girders to Chamber tops: Material

Number and pitch of stays in each

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

How stayed

End plates: Thickness

Are they fitted with easing gear

Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Area of safety valves to superheater

Working pressure by rules

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Area of safety valves to superheater

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Area of safety valves to superheater

Working pressure by rules

Distance between rings

Working pressure by rules

Working pressure of end plates

Area of safety valves to superheater

Working pressure by rules

Distance between rings

Working pressure by rules

End plates: Thickness

How stayed

Area of safety valves to superheater

Working pressure by rules

Distance between rings

VERTICAL DONKEY BOILER—Manufacturers of Steel

No. Description
 Made at By whom made Where made Where used
 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
 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
 Diameter of uptake Thickness of uptake plates Thickness of water tubes Dates of survey

SPARE GEAR. State the articles supplied:— 2 each of top & bottom end main bearings, one set of coupling bolts, one set each of an circulating feed and bilge pump valves, feed check valves, stud iron bolts nuts and end covers etc.

The foregoing is a correct description,

Manufacturer.

For the GREAT CENTRAL CO-OPERATIVE
 ENGINEERING & SHIP REPAIRING COMPANY, LTD.

J. H. Lister

Dates of Survey while building During progress of work in shops— 1905:— Nov 22, 30 Dec 21 Jan 6:— 19, 27, 31 During erection on board vessel— 1906:— June 15, 22, 26, 27 July 16 Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 9/16/06 Slides 14/5/06 Covers 14/5/06 Pistons 14/5/06 Rods 6/2/06
 Connecting rods 24/6/06 Crank shaft 24/7/06 Thrust shaft 5/5/06 Tunnel shafts v Screw shaft 24/3/06 Propeller 24/3/06
 Stern tube 24/3/06 Steam pipes tested 22/6/06 Engine and boiler seatings 15/6/06 Engines holding down bolts 26/6/06
 Completion of pumping arrangements 26/6/06 Boilers fixed 15/6/06 Engines tried under steam 27/6/06
 Main boiler safety valves adjusted 26/6/06 Thickness of adjusting washers 8.
 Material of Crank shaft Perin Identification Mark on Do. 489 Material of Thrust shaft Perin Identification Mark on Do. 518.
 Material of Tunnel shafts Identification Marks on Do. v Material of Screw shafts Perin Identification Marks on Do. 479
 Material of Steam Pipes Copper Solid drawn 3 1/2 inch 6 lb. test pressure 400 lb.

General Remarks (State quality of workmanship, opinions as to class, &c. These engines have been tried under special survey, the materials & workmanship are good; they have been satisfactorily fitted on board the vessel & tried under steam & the case is in my opinion eligible for the notation +LMC 7.06.

The Committee have approved in this instance of one feed and one bilge pump being fitted. See Secy's letter E 22/9/06

This case is identical with Enquiries 33.4.5 by the same maker. See Genl. Reports 4200, 4154 and 4235 respectively.

It is submitted that this vessel is eligible for THE RECORD

+LMC 7.06.

The amount of Entry Fee... £ 1 : : : When applied for, 17 July 1906
 Special ... £ 11 : 8 : :
 Donkey Boiler Fee ... £ 12 : 8 : :
 Travelling Expenses (if any) £ 3 : 16 : :
 8 : 12 : 0

Committee's Minute

Assigned

+LMC 7.06

FRI. 20 JUL 1906

MACHINERY CERTIFICATE
 WRITTEN.

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



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Lloyd's Register
 Foundation

This office.

Certificate (if required) to be sent to

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