

## REPORT ON MACHINERY

No. 6846

Received at London Office

THUR, 22 SEP 1910

Date of writing Report

19

When handed in at Local Office

21/9/10

Port of

GRIMSBY

No. in Survey held at  
Reg. Book.

GRIMSBY

Date, First Survey

19/5

Last Survey

16/9/

19/10

on the steam trawler "Bereian"

(Number of Visits 24)

Tons

Gross

Net

When built

1910

Master

Built at

Selby

By whom built

Cochrane &amp; Sons

Engines made at

Grimsby

By whom made

V. Central Co-op. Eng. &amp; R. Ch.

when made

1910

Boilers made at

do.

By whom made

do.

when made

1910

Registered Horse Power

Owners

Great Central Co-operative Eng. &amp; Ship Repairing Co. Ltd.

Port belonging to

Grimsby

Nom. Horse Power as per Section 28

45

Is Refrigerating Machinery fitted for cargo purposes

no

Is Electric Light fitted

no

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

Triple expansion inverted

No. of Cylinders

3

No. of Cranks

3

Dia. of Cylinders

12, 2 1/2, 3 1/4

Length of Stroke

24

Revs. per minute

Dia. of Screw shaft

as per rule 7.05

Material of

Scrap 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

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

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

yes

Length of stern bush

35

Dia. of Tunnel shaft

as per rule

Dia. of Crank shaft journals

as per rule

6.61

Dia. of Crank pin

7

Size of Crank webs

4 1/4 x 13

Dia. of thrust shaft under

collars

4

Dia. of screw

8-6

Pitch of Screw

10-9

No. of Blades

4

State whether moveable

no

Total surface

280

No. of Feed pumps

1

Diameter of ditto

2 1/8

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Bilge pumps

1

Diameter of ditto

2 1/8

Stroke

24

Can one be overhauled while the other is at work

yes

No. of Donkey Engines

1

Sizes of Pumps

6 x 3 1/2 x 6

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

In Engine Room

2 sea, hotwell, bilge

In Holds, &amp;c.

2 forepeak and 2 dushwell

No. of Bilge Injections

1

sizes

3"

Connected to condenser, or to circulating pump

pump

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

2 1/2 ejector

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

none

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

rich steam exhaust

How are they protected

wood casings

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

seen at Hull

of Stern Tube

at Hull

Screw shaft and Propeller

at Hull

Is the Screw Shaft Tunnel watertight

none

Is it fitted with a watertight door

yes

worked from

yes

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

S)

Manufacturers of Steel

Phoenix A.M. Ges. Abt. Hoerder Veran. Hoerde

Total Heating Surface of Boilers

13400

Is Forced Draft fitted

no

No. and Description of Boilers

one S.E. return tube

Working Pressure

180 lb.

Tested by hydraulic pressure to

360 lb.

Date of test

7.9.10

No. of Certificate

91

Can each boiler be worked separately

yes

Area of fire grate in each boiler

34.7

No. and Description of Safety Valves to

each boiler

2-direct going

Area of each valve

3.98

Pressure to which they are adjusted

185 lb.

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

4"

Mean dia. of boilers

12-6"

Length

10-0"

Material of shell plates

S

Thickness

1 1/32

Range of tensile strength

28/32

Are the shell plates welded or flanged

no

Descrip. of riveting: cir. seams

double

long. seams

double butt

Diameter of rivet holes in long. seams

1 1/8"

Pitch of rivets

7 1/4"

Lap of plates or width of butt straps

16 5/8"

Per centages of strength of longitudinal joint

rivets

87.0

Working pressure of shell by rules

194

Size of manhole in shell

12 x 16

Size of compensating ring

16 x 16 x 1 1/8"

No. and Description of Furnaces in each boiler

2 plain

Material

S

Outside diameter

43"

Length of plain part

top 3 7/10"

Thickness of plates

crown 3 3/4"

bottom 3 3/4"

Description of longitudinal joint

welded

No. of strengthening rings

none

Working pressure of furnace by the rules

181

Combustion chamber plates: Material

S

Thickness: Sides

2 1/32"

Back

2 1/32"

Top

2 1/32"

Bottom

1 1/16"

Pitch of stays to ditto: Sides

9 1/4 x 8 3/4"

Back

9 x 8 3/4"

op 9 1/4 x 8 1/4"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

184

Material of stays

S

Thickness

1 1/8"

Pitch of stays

17 1/2 x 18

How are stays secured

d. nuts &amp; washers

Working pressure by rules

207

End plates in steam space:

Material

S

Thickness

1 1/8"

Pitch of stays

17 1/2 x 18

How are stays secured

d. nuts &amp; washers

Working pressure by rules

190

Material of stays

S

Diameter

at smallest part 6 6/8"

Area supported by each stay

320"

Working pressure by rules

215

Material of Front plates at bottom

S

Thickness

1"

Material of Lower back plate

S

Thickness

15/16"

Mean pitch of stays

16"

Working pressure of plate by rules

180 lb.

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2"

Material of tube plates

S

Thickness: Front

1"

Back

3/4"

Mean pitch of stays

9"

Pitch across wide water spaces

14 1/4"

Working pressures by rules

190

Girders to Chamber tops: Material

S

Depth and

thickness of girder at centre

9 x 3/4 (2)

Length as per rule

31.5

Distance apart

8 1/4"

Number and pitch of stays in each

2-9 1/4"

Working pressure by rules

223

Superheater or Steam chest; how connected to boiler

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



# 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:— 2 Top & bottom end and main bearing bolts  
 a set of coupling bolts nuts feed, bridge, circulating & air pump valves  
 safety valves & escape valves and assorted bolts nuts & iron

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

The foregoing is a correct description,

Manufacturer.

J. H. Lister

Dates of Survey while building  
 During progress of work in shops— May 19. 31. June 2. 6. 10. 11. 18. July 1. 12. 13. 26. 30. Aug 10. 12. 18. 25. 29. 30.  
 During erection on board vessel— Sep 2. 5. 8. 13. 14. 16  
 Total No. of visits 24

Is the approved plan of main boiler forwarded herewith No

Dates of Examination of principal parts—Cylinders HP 12/16/6 LP 1/7 Slides 18/8 Covers 18/8 Pistons 18/8 Rods 10/8  
 Connecting rods 18/8 Crank shaft 13/7 Thrust shaft 5/9 Tunnel shafts ✓ Screw shaft 11/6 Propeller 6/6  
 Stern tube 6/6 Steam pipes tested 13/9 Engine and boiler seatings Seen at Hull Engines holding down bolts 13/9  
 Completion of pumping arrangements 13/9 Boilers fixed 13/9 Engines tried under steam 16/9  
 Main boiler safety valves adjusted 16/9 Thickness of adjusting washers P+S 5/16"  
 Material of Crank shaft iron Identification Mark on Do. N° 302 18.7.10 C.M.  
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Thrust shaft steel Identification Mark on Do. HAMA N° 261 5.9.10  
 Material of Steam Pipes Solid drawn copper 6 SWG. ✓ Test pressure 360 lb. ✓  
 Material of Screw shafts Iron Identification Marks on Do. N° 286 11.6.10 C.M.

General Remarks (State quality of workmanship, opinions as to class, &c. This machinery has been built under special survey the materials and workmanship are good. The boiler steel has been tested as required by rule, and the boiler constructed in accordance with the approved plan. On completion it was tested by water to try the working pressure and found tight and sound.

This machinery has been fitted on board the vessel in an efficient manner, and in my opinion is eligible for record of +LMC 9.10.

This vessel is a sister to the S.S. "Arian" Imo. N° 6805.

It is submitted that this vessel is eligible for THE RECORD + LMC 9.10.

The amount of Entry Fee .. £ 1 : : :  
 Special .. £ 1 : 5 : :  
 Donkey Boiler Fee .. £ : : :  
 Travelling Expenses (if any) .. £ : : :  
 When applied for, 24/9/10 C.M.  
 When received, 24.11.10 C.M.

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

Committee's Minute

FRI. 23 SEP 1910

Assigned

MACHINERY CERTIFICATE WRITTEN.



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