

## REPORT ON MACHINERY

No. 15097

THU. 14 DEC. 1916

Received at London Office

Date of writing Report

19

When handed in at Local Office

19

Port of *Linn*No. in Survey held at  
Reg. Book.*Alma*

Date, First Survey

*1915. Mar 5*

Last Survey

*Dec 1st 1916*on the *413 "Cargan"*

(Number of Visits)

*22*

Master

Built at

*Alma*

By whom built

*Jiffings & Co*

Tons

Gross

When built *1916*

Engines made at

*Alma*

By whom made

*Jiffings & Co*

when made

*1916*

Boilers made at

*Wassow*

By whom made

*A. L. Hodgkin*

when made

*1916*

Registered Horse Power

*300*

Owners

*Messrs. Bowden Bros.*

Port belonging to

*Belfast*

Nom. Horse Power as per Section 28

*53*

Is Refrigerating Machinery fitted for cargo purposes

*no*

Is Electric Light fitted

*no*

ENGINES, &amp;c.—Description of Engines

*Compound*

No. of Cylinders

*2*

No. of Cranks

*2*

Dia. of Cylinders

*14" 30"*

Length of Stroke

*22"*

Revs. per minute

*110*

Dia. of Screw shaft

*6 1/2"*

Material of

*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

*no*

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

Length of stern bush

*28"*

Dia. of Tunnel shaft

*6 1/2"*

Dia. of Crank shaft journals

*6 1/2"*

Dia. of Crank pin

*6 1/2"*

Size of Crank webs

*12 x 4 1/2"*

Dia. of thrust shaft under

collars

Dia. of screw

*7-9"*

Pitch of Screw

*9-3"*

No. of Blades

*4*

State whether moveable

*no*

Total surface

*27 1/2"*

No. of Feed pumps

*1*

Diameter of ditto

*2 1/4"*

Stroke

*11"*

Can one be overhauled while the other is at work

No. of Bilge pumps

*1*

Diameter of ditto

*2 1/4"*

Stroke

*11"*

Can one be overhauled while the other is at work

No. of Donkey Engines

*2*

Sizes of Pumps

*5 x 3 1/2 x 6, 4 x 4 x 5*

No. and size of

Suctions connected to both Bilge and Donkey pumps

*2 in main hold 2 1/2"*

In Engine Room

*2*

In Holds, &amp;c.

*2**in main hold 2 1/2"**in main hold 2 1/2"**in main hold 2 1/2"**in main hold 2 1/2"**in main hold 2 1/2"**in main hold 2 1/2"*

No. of Bilge Injections

*1*

sizes

*3"*

Connected to condenser, or to circulating pump

*yes*

Is a separate Donkey Suction fitted in Engine room

*yes*

size

*4 1/2"**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

*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

*none*

How are they protected

*yes*

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

*13/9/16*

of Stern Tube

*13/9/16*

Screw shaft and Propeller

*13/9/16*

Is the Screw Shaft Tunnel watertight

*yes*

Is it fitted with a watertight door

*yes*

worked from

*in any dock after launch**worked from*

OILERS, &amp;c.—(Letter for record)

*yes*

Manufacturers of Steel

*Wassow*

Report 35657 attached

*yes**yes**yes*

Total Heating Surface of Boilers

*1050*

Is Forced Draft fitted

*no*

No. and Description of Boilers

*one single unit*

Working Pressure

*135 lbs*

Tested by hydraulic pressure to

*140 lbs*

Date of test

*13/9/16*

No. of Certificate

Can each boiler be worked separately

*yes*

Area of fire grate in each boiler

*35.5 sq ft*

No. and Description of Safety Valves to

each boiler

*2 spring valves*

Area of each valve

*5.94 sq in*

Pressure to which they are adjusted

*140 lbs*

Are they fitted with easing gear

*yes**yes*

Smallest distance between boilers or uptakes and bunkers or woodwork

*11"*

Mean dia. of boilers

*11"*

Length

*11"*

Material of shell plates

Thickness

*11"*

Range of tensile strength

*11"*

Are the shell plates welded or flanged

*yes*

Descrip. of riveting: cir. seams

Long. seams

*yes*

Diameter of rivet holes in long. seams

*11"*

Pitch of rivets

*11"*

Lap of plates or width of butt straps

*11"*

Size of manhole in shell

*11"*

Percentage of strength of longitudinal joint

*yes*

Working pressure of shell by rules

*yes*

Size of manhole in shell

*yes**yes**yes**yes**yes*

Size of compensating ring

*yes*

No. and Description of Furnaces in each boiler

*yes*

Material

*yes*

Outside diameter

*yes**yes**yes**yes**yes*

Length of plain part

*yes*

Thickness of plates

*yes*

Description of longitudinal joint

*yes*

No. of strengthening rings

*yes**yes**yes**yes**yes**yes*

Working pressure of furnace by the rules

*yes*

Combustion chamber plates: Material

*yes*

Thickness: Sides

*yes*

Back

*yes*

Top

*yes*

Bottom

*yes*

Pitch of stays to ditto: Sides

*yes*

Back

*yes*

Top

*yes*

If stays are fitted with nuts or riveted heads

*yes*

Working pressure by rules

*yes**yes**yes**yes**yes*

Material of stays

*yes*

Diameter at smallest part

*yes*

Area supported by each stay

*yes*

Working pressure by rules

*yes*

End plates in steam space:

*yes**yes**yes**yes**yes**yes*

Material

*yes*

Thickness

*yes*

Pitch of stays

*yes*

How are stays secured

*yes*

Working pressure by rules

*yes*

Material of stays

*yes**yes**yes**yes**yes*

Diameter at smallest part

*yes*

Area supported by each stay

*yes*

Working pressure by rules

*yes*

Material of Front plates at bottom

*yes*

Working pressure of plate by rules

*yes**yes**yes**yes**yes*

Thickness

*yes*

Material of Lower back plate

*yes*

Thickness

*yes*

Greatest pitch of stays



IS A DONKEY BOILER FITTED? *No.* ✓

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *Two top end & two bottom end connecting rods and bolts and nuts, two main bearing bolts, one set coupling bolts, one set and little pump valves, assorted bolts, Iron of various sizes.*

The foregoing is a correct description,  
FOR A. JEFFREY & CO., LTD.

*Robt. Jeffrey* DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 1915 Mar 5, 9, 12, 17, 29, June 7, 10, July 8, Oct 27, Nov 17, 19, 1916 Feb 24, Mar 22, 24, Apr 26, June 2, July 5.  
During erection on board vessel -- 1916 Aug 7, Sept 13, Oct 17, Nov 1, Dec 1.  
Total No. of visits 22.

Is the approved plan of main boiler forwarded herewith *Yes*

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 22/3/16 5/7/16 Slides 26/4, 5/7/16 Covers 2/6, 5/7/16 Pistons 2/6, 5/7/16 Rods 26/4 6/5/16  
Connecting rods 5/3/16 6/7/16 Crank shaft 5/3/16 5/7/16 Thrust shaft 27/10/16 9/1/16 Tunnel shafts *None* Screw shaft 26/5/16 5/7/16 Propeller 10/4/16  
Stern tube 5/7/16 Steam pipes tested 1/11/16 Engine and boiler seatings 7/8, 13/9/16 Engines holding down bolts 7/8/16  
Completion of pumping arrangements 1/12/16 Boilers fixed 17/10/16 Engines tried under steam 1/12/16  
Main boiler safety valves adjusted 1/12/16 Thickness of adjusting washers 10 7/8 5 3/8

Material of Crank shaft *Steel* Identification Mark on Do. 4034 GAA Material of Thrust shaft *Steel* Identification Mark on Do. 4034  
Material of Tunnel shafts *None* Identification Marks on Do. — Material of Screw shafts *Iron* Identification Marks on Do. 4034 G  
Material of Steam Pipes *Copper* ✓ Test pressure 270 lbs. ✓

Is an installation fitted for burning oil fuel *No.* ✓

Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with.

Is this machinery duplicate of a previous case *Yes* If so, state name of vessel *S/S 'Cottin'*

General Remarks (State quality of workmanship, opinions as to class, &c. *In L's letter E 22<sup>nd</sup> March 1915*

*The Machinery of this vessel has been built under special survey. The workmanship and workmanship are sound and good and under the vessel up to in my opinion to have used of - L.M.C. 12.16.*

*It is submitted that this vessel is eligible for THE RECORD + LMC 12.16.*

*JWD.*  
15.12.16.

*G. N. H. H.*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

The amount of Entry Fee ... £ 1 : : When applied for,  
Special *plus* ... £ 8 : 10 : 13<sup>th</sup> Dec 1916.  
Donkey Boiler Fee *plus* ... £ 4 : 10 :  
Travelling Expenses (if any) £ 2 : 8 : 22.2.1917

Committee's Minute TUE. 19. DEC. 1916

Assigned *+ L.M.C. 12.16.*

MACHINERY CERTIFICATE  
WRITTEN.



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