

REPORT ON MACHINERY.

Received at London Office

MON FEB 15 1915

Date of writing Report

When handed in at Local Office

12.2.15 Port of Hull

No. in Survey held at Reg. Book.

Date, First Survey

21-8-14 Last Survey

29-1-1915

Log kept on the steel screw tug *Cuirass*

(Number of Visits) 39

Gross 321

Master

Built at *Leby*

By whom built *Cochran & Sons Ltd*

Tons Net 139

When built 1915-1

Engines made at *Hull*

By whom made *Arnold & Smith Ltd (No 2595)*

when made 1915-1

Boilers made at *Hull*

By whom made *Arnold & Smith Ltd*

when made 1915-1

Registered Horse Power

Owners *Hardy & Kelly, Crown S. F. Co. Ltd* Port belonging to *Grimby*

Nom. Horse Power as per Section 28 90

Is Refrigerating Machinery fitted for cargo purposes *no*

Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines

Triple expansion

No. of Cylinders *Three*

No. of Cranks *3*

Dia. of Cylinders *13" - 22 3/4" - 37"* Length of Stroke *26"* Revs. per minute

Dia. of Screw shaft as per rule *7.76"* Material of screw shaft *Iron*

as fitted *8 1/4"*

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 *33"*

Dia. of Tunnel shaft as per rule *6.78"* Dia. of Crank shaft journals as per rule *7.12"*

as fitted *7 3/4"* Dia. of Crank pin *7 3/4"*

Size of Crank webs *5" x 4 3/4"* Dia. of thrust shaft under

collars *7 3/4"* Dia. of screw *9"-F"* Pitch of Screw *11-0"*

No. of Blades *4* State whether moveable *no* Total surface *34 1/2"*

No. of Feed pumps *one* Diameter of ditto *2 7/8"* Stroke *12"* Can one be overhauled while the other is at work *yes*

No. of Bilge pumps *one* Diameter of ditto *2 7/8"* Stroke *12"* Can one be overhauled while the other is at work *yes*

No. of Donkey Engines *one 2 1/2" dia.* Sizes of Pumps *6 1/2" x 4 3/4" x 6" duplex* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *one 2" dia.* In Holds, &c. *one 2" dia. in each compartment*

all suction also connected to ejector

No. of Bilge Injections *one* sizes *3"* Connected to condenser or to circulating pump *yes* Is a separate Donkey Suction fitted in Engine room & 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 *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 suction* 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 *20-10-14* of Stern Tube *20-10-14* Screw shaft and Propeller *5-1-14*

Is the Screw Shaft Tunnel watertight *yes* Is it fitted with a watertight door *yes* worked from *yes*

BOILERS, &c.—(Letter for record *S*)

Manufacturers of Steel *Stewarts & Lloyds*

Total Heating Surface of Boilers *1590 1/2* Is Forced Draft fitted *no* No. and Description of Boilers *one single ended*

Working Pressure *180 lbs* Tested by hydraulic pressure to *360 lbs* Date of test *24-12-14* No. of Certificate *3050*

Can each boiler be worked separately *yes* Area of fire grate in each boiler *47.5 sq ft* No. and Description of Safety Valves to each boiler *two spring loaded*

Area of each valve *5.94 sq in* Pressure to which they are adjusted *185 lbs* Are they fitted with easing gear *yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *22"* Mean dia. of boilers *165 1/8"* Length *10'-6"* Material of shell plates *S*

Thickness *1 3/32"* Range of tensile strength *29-33 tons* Are the shell plates welded or flanged *no* Descrip. of riveting: cir. seams *double*

long. seams *J.P. & B.* Diameter of rivet holes in long. seams *1 1/32"* Pitch of rivets *7 3/4"* Lap of plates or width of butt straps *17 1/8"*

Per centages of strength of longitudinal joint rivets *92.2* Working pressure of shell by rules *181* Size of manhole in shell *16" x 12"*

Size of compensating ring *9 x 1 1/2"* No. and Description of Furnaces in each boiler *3 Plain* Material *S* Outside diameter *39 1/32"*

Length of plain part top *80"* Thickness of plates crown *7 49/64"* Description of longitudinal joint *welded* No. of strengthening rings *1 flat*

bottom *79"* Working pressure of furnace by the rules *189* Combustion chamber plates: Material *S* Thickness: Sides *2 3/32"* Back *1 1/16"* Top *1 1/16"* Bottom *2 3/32"*

Pitch of stays to ditto: Sides *9" x 7 3/4"* Back *9 1/2" x 9"* Top *9" x 7 3/4"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *191*

Material of stays *S* Diameter at smallest part *1 7/16"* Area supported by each stay *70 sq in* Working pressure by rules *201* End plates in steam space

Material *S* Thickness *1 3/32"* Pitch of stays *17 1/2" x 17 1/2"* How are stays secured *secured* Working pressure by rules *180* Material of stays *S*

Diameter at smallest part *10"* Area supported by each stay *306 sq in* Working pressure by rules *207* Material of Front plates at bottom *S*

Thickness *2 7/32"* Material of Lower back plate *S* Thickness *2 7/32"* Greatest pitch of stays *14 3/4" x 9 1/4"* Working pressure of plate by rules *265*

Diameter of tubes *3 1/2"* Pitch of tubes *4 15/16" x 4 3/4"* Material of tube plates *S* Thickness: Front *2 7/32" + 1/2" dbh* Back *2 7/32"* Mean pitch of stays *9 1/16"*

Pitch across wide water spaces *14 3/4"* Working pressures by rules *197* Girders to Chamber tops: Material *S* Depth and thickness of girder at centre *9" x 2"*

Length as per rule *36"* Distance apart *9"* Number and pitch of stays in each *Three 7 3/4"*

Working pressure by rules *189* Superheater or Steam chest; how connected to boiler *yes* Can the superheater be shut off and the boiler worked separately *yes*

Diameter *yes* Length *yes* Thickness of shell plates *yes* Material *yes* Description of longitudinal joint *yes* Diam. of rivet holes *yes*

Pitch of rivets *yes* Working pressure of shell by rules *yes* Diameter of flue *yes* Material of flue plates *yes* Thickness *yes*

If stiffened with rings *yes* Distance between rings *yes* Working pressure by rules *yes* End plates: Thickness *yes* How stayed *yes*

Working pressure of end plates *yes* Area of safety valves to superheater *yes* Are they fitted with easing gear *yes*



IS A DONKEY BOILER FITTED? *No*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

Two top end bolts & nuts; two bottom end bolts & nuts; one set of coupling bolts & nuts; two main bearing bolts & nuts; one set of feed, bilge, & air pump valves; one main & one donkey check valve; a quantity of bolts & nuts & iron of various sizes.

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

W. Shackleton

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1914:— Aug 21 24 28 Sep 4 9 15 18 21 25 29 Oct 1 14 16 20 23 27 29 Nov 1 11 13 18
{ During erection on board vessel -- } 24 28 Dec 1 3 5 8 11 15 18 22 24 29 Jan 2 5 13 15 20 29
Total No. of visits *39*

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

" " " donkey " " " *Yes*

Dates of Examination of principal parts—Cylinders *24-11-14* Slides *22-12-14* Covers *22-12-14* Pistons *18-12-14* Rods *18-12-14*

Connecting rods *18-12-14* Crank shaft *15-12-14* Thrust shaft *11-11-14* Tunnel shafts Screw shaft *14-10-14* Propeller *5-1-15*

Stern tube *16-10-14* Steam pipes tested *15-1-15* Engine and boiler seatings *20-10-14* Engines holding down bolts *13-1-15*

Completion of pumping arrangements *29-1-15* Boilers fixed *13-1-15* Engines tried under steam *20-1-15*

Main boiler safety valves adjusted *20-1-15* Thickness of adjusting washers *P 7/16, S 3/8*

Material of Crank shaft *Steel* Identification Mark on Do. *1405 FLS* Material of Thrust shaft *steel* Identification Mark on Do. *1366 FLS*

Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts *Iron* Identification Marks on Do. *1295 FLS*

Material of Steam Pipes *solid drawn copper* Test pressure *400 lb.*

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 *"Merisia"*

General Remarks (State quality of workmanship, opinions as to class, &c. *The machinery of this*

vessel has been constructed under special survey in accordance with the approved plans & the rules of this Society, the materials & workmanship are good, the boilers & steam pipes have been tested as above by hydraulic pressure & found sound & good. The machinery has been properly fitted & secured on board, & on completion tried under steam & found satisfactory. The safety valves have been adjusted under steam & tested for accumulation, which did not exceed 187 lbs.

In our opinion the vessel is eligible for the record. *+ LMC 1, 15*

It is submitted that this vessel is eligible for THE RECORD. + LMC 1. 15.

J.M. J.W.D. 15/27/15

The amount of Entry Fee ... £ 1 : 0 :
Special ... £ 3 : 10 :
Donkey Boiler Fee ... £ - : - :
Travelling Expenses (if any) £ - : 8 : 2

When applied for, *12/21/1915*

When received, *Feb 27 1915*

Frank L. Sturgeon & P. Fitzgerald
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE FEB 16 1915

Assigned + LMC 1. 15

MANUALLY VERIFIED
WRITTEN



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Hull

Certificate (if required) to be sent to
The Surveyors and requested not to write on or below the space for Committee's Minute.