

REPORT ON MACHINERY.

Received at London Office **WED. FEB. 28. 1917**

Date of writing Report 23-2-17 19 27-2-17 19 When handed in at Local Office Hull Port of Hull
 No. in Survey held at Hull Date, First Survey 3.4.16 Last Survey 23-2-17 19
 Reg. Book. 87 on the steel screw trawler Capricornus (Number of Visits 39) Tons { Gross 219 Net 98
 Master Gool Built at Gool By whom built Gool & B. & P. Ryg Co. Ltd When built 1917-2
 Engines made at Hull By whom made C. D. Holmes & Co. Ltd when made 1917-2
 Boilers made at Hull By whom made C. D. Holmes & Co. Ltd when made 1917-2
 Registered Horse Power 76 Owners Gimby & Co. Sea & Land Trawling Co. Ltd Port belonging to Gimby
 Nom. Horse Power as per Section 28 76 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders Three No. of Cranks 3
 Dia. of Cylinders 12 1/2 - 21 1/2 - 35 Length of Stroke 24 Revs. per minute 7.14 as per rule 7.14 Material of screw shaft Iron
 as fitted 7 1/2 as fitted 7 1/2 screw shaft)
 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 1/2
 Dia. of Tunnel shaft as per rule 4.41 Dia. of Crank shaft journals as per rule 6.73 Dia. of Crank pin 7 Size of Crank webs 13 1/2 x 4 1/2 Dia. of thrust shaft under
 collars 7 1/2 Dia. of screw 8-7 1/2 Pitch of Screw 10-10 1/2 No. of Blades 4 State whether moveable no Total surface 29 1/2
 No. of Feed pumps one Diameter of ditto 2 1/2 Stroke 14 1/4 Can one be overhauled while the other is at work yes
 No. of Bilge pumps one Diameter of ditto 2 1/2 Stroke 14 1/4 Can one be overhauled while the other is at work yes
 No. of Donkey Engines one 3 1/2 hp Sizes of Pumps 6, 3 1/2 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room two 2" dia In Holds, &c. one 2" dia in each compartment
all suction also connected to ejector
 No. of Bilge Injections one sizes 3 1/2 Connected to condenser, or to circulating pump pumps Is a separate Donkey Suction fitted in Engine room & size 3" 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 no
 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 strong wooden 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
 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 Stewart & Lloyd
 Total Heating Surface of Boilers 1310 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 15-11-16 No. of Certificate 3175
 Can each boiler be worked separately yes Area of fire grate in each boiler 33 1/2 sq ft No. and Description of Safety Valves to
 each boiler two spring loaded Area of each valve 3.97 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear yes
 Smallest distance between boilers on uptakes and bunkers on woodwork 6" lagged Mean dia. of boilers 150" Length 10'-0" Material of shell plates steel
 Thickness 1 1/4" Range of tensile strength 28-32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams double
 long. seams T.P.D.B.F. Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 7 3/8" Lap of plates or width of butt straps 15"
 Per centages of strength of longitudinal joint rivets 84.4 Working pressure of shell by rules 185 1/2 Size of manhole in shell 16" x 12"
 plate 85.6
 Size of compensating ring 7" x 1 1/4" No. and Description of Furnaces in each boiler two plain Material steel Outside diameter 43"
 Length of plain part top 7 1/2" Thickness of plates crown 1 13/16" Description of longitudinal joint welded No. of strengthening rings one pt
 bottom 7 1/2" bottom 7 1/2"
 Working pressure of furnace by the rules 192 Combustion chamber plates: Material steel Thickness: Sides 3/4" Back 1 1/16" Top 1 1/16" Bottom 3/4"
 Pitch of stays to ditto: Sides 10" x 9" Back 9 1/2" x 8 3/4" Top 10" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 181
 Material of stays steel Area at smallest part 2.4 sq in Area supported by each stay 110 sq in Working pressure by rules 196 End plates in steam space:
 Material steel Thickness 1 1/4" Pitch of stays 17" x 16" How are stays secured 8.7.9.2 Working pressure by rules 196 Material of stays steel
 Area at smallest part 5.79 sq in Area supported by each stay 272 sq in Working pressure by rules 221 Material of Front plates at bottom steel
 Thickness 7/8" Material of Lower back plate steel Thickness 29/32" Greatest pitch of stays 14 1/2" x 9 1/2" Working pressure of plate by rules 188
 Diameter of tubes 3 1/2" Pitch of tubes 5" x 5 1/2" Material of tube plates steel Thickness: Front 7/8" + 3/4" double Back 7/8" Mean pitch of stays 11.4"
 Pitch across wide water spaces 15" Working pressures by rules 211 lbs Girders to Chamber tops: Material steel Depth and
 thickness of girder at centre 7 3/4" x 1 3/4" Length as per rule 30.4" Distance apart 9" Number and pitch of stays in each two 10"
 Working pressure by rules 201 Steam dome: description of joint to shell yes % of strength of joint yes
 Diameter 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 Crown plates yes Thickness yes How stayed yes

SUPERHEATER. Types yes Date of Approval of Plan yes Tested by Hydraulic Pressure to yes
 Date of Test yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler yes
 Diameter of Safety Valve yes Pressure to which each is adjusted yes Is Easing Gear fitted 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, two main bearing bolts & nuts, one set of coupling bolts & nuts, one set of feed, bilge & air pump valves, 6 piston studs & nuts, one main & one donkey check valve, one set of escape valves & springs, one safety valve spring, & a quantity of bolts & nuts & iron of various sizes.*

The foregoing is a correct description,

CHARLES D. HOLMES & Co. Ltd.
Harold Sheardson

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } *1916: Apr 3, 17 Jun 15 Aug 15 Sep 1, 2, 5, 7, 12, 13, 15, 18, 19, 21, 23, 26, 27, 29 Oct 5, 6, 10*
{ During erection on board vessel --- } *12, 17, 20, 31 Nov 1, 3, 7, 10, 13, 15 1917: Jan 10, 17, 22, 23, 25, 29 Feb 1, 23.*
Total No. of visits *39*

Is the approved plan of main boiler forwarded herewith *yes* *please return*
" " " donkey " " " *28/2/17*

Dates of Examination of principal parts—Cylinders *13-9-16* Slides *17-10-16* Covers *5-10-16* Pistons *5-10-16* Rods *5-10-16*
Connecting rods *5-10-16* Crank shaft *21-9-16* Thrust shaft *15-6-16* Tunnel shafts Screw shaft *27-9-16* Propeller *27-9-16*
Stern tube *27-9-16* Steam pipes tested *23-1-17* Engine and boiler seatings *29-9-16* Engines holding down bolts *17-1-17*
Completion of pumping arrangements *23-2-17* Boilers fixed *17-1-17* Engines tried under steam *23-2-17*
Completion of fitting sea connections *6-10-16* Stern tube *29-9-16* Screw shaft and propeller *6-10-16*
Main boiler safety valves adjusted *1-2-17* Thickness of adjusting washers *7/16" & 9/16"*

Material of Crank shaft *Iron* Identification Mark on Do. *1734 FLS* Material of Thrust shaft *Iron* Identification Mark on Do. *7215 FLS*
Material of Tunnel shafts Identification Marks on Do. Material of Screw shafts *Iron* Identification Marks on Do. *1739 FLS*
Material of Steam Pipes *solid drawn copper* Test pressure *40 lbs.*

Is an installation fitted for burning oil fuel 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? *no* so, state name of vessel *Cancer, Saturn*

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 steam pipes & boiler have been tested as above by hydraulic pressure & found sound & good. The machinery has been properly fitted & secured on board the vessel & on completion was tried under steam under full working conditions & found satisfactory. The safety valves have been adjusted under steam & tested for accumulation which did not exceed 180 lbs.*
In my opinion the vessel is eligible for the record + L.M.C. 2.17

*This vessel is eligible for
THE RECORD + L.M.C. 2.17.*

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

The amount of Entry Fee	£ 1 : 0 :	When applied for,
Special	£ 11 : 8 :	27-2-1917
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any)	£ : 6/4 :	28-2-1917 1/3/17

Frank L. Stanger
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI.-2MAR. 1917*
Assigned *+ L.M.C. 2.17.*

MACHINERY CERTIFICATE
Waited

