

REPORT ON MACHINERY

No. 10797
SAT. DEC. 18 1920

Received at London Office

Date of writing Report 11th Dec. 1920 When handed in at Local Office 13th Dec. 1920 Port of Southampton
No. in Survey held at Portsmouth Date, First Survey 4th May Last Survey 6th August 1920
Reg. Book. 62028 on the S.S. Trawler "JOHN COOPER" (Number of Visits 3)
Master Built at Middlesbrough By whom built W. Harkness & Son Ltd Tons Gross 1917
Engines made at Birmingham By whom made Messrs. Belliss & Morcom Ltd when made 1917
Boilers made at Wallsend-on-Tyne By whom made North Eastern Marine Eng^{rs} Co Ltd when made 1916
Registered Horse Power Owners Port belonging to
Nom. Horse Power as per Section 28 87 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ACROSS THIS MARGIN.

ENGINES, &c.—Description of Engines Triple Exp^{ns}, Surface Condensing No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 12 $\frac{1}{2}$ "-21"-35" Length of Stroke 26" Revs. per minute 110 Dia. of Screw shaft as per rule 7 $\frac{3}{4}$ " Material of screw shaft as fitted 7 $\frac{3}{8}$ "
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 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 If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 34"
Dia. of Tunnel shaft as per rule 7 $\frac{3}{8}$ " Dia. of Crank shaft journals as per rule 6 $\frac{9}{8}$ " Dia. of Crank pin 7 $\frac{1}{8}$ " Size of Crank webs 4 $\frac{1}{2}$ " Dia. of thrust shaft under collars 7 $\frac{1}{8}$ " Dia. of screw 9 $\frac{1}{2}$ " Pitch of Screw 11 $\frac{1}{2}$ " No. of Blades 4 State whether moveable No Total surface 35 $\frac{1}{2}$ "
No. of Feed pumps 2 Diameter of ditto 2 $\frac{1}{2}$ " Stroke 12" Can one be overhauled while the other is at work yes
No. of Bilge pumps 2 Diameter of ditto 2 $\frac{1}{2}$ " Stroke 12" Can one be overhauled while the other is at work yes
No. of Donkey Engines 2 x 1 $\frac{1}{2}$ hp Sizes of Pumps 6x3x6" & 6x4x6" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3-2" In Holds, &c. 1-2" from Fore Hold, 1-2" from Starboard Well, 2" from Starboard Suction from Starboard Well.
No. of Bilge Injections 1 sizes 3 $\frac{1}{2}$ " Connected to condenser, or to circulating pump C.P.M.C. Is a separate Donkey Suction fitted in Engine room & size yes, 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 Ford Suctions 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
Is the Screw Shaft Tunnel watertight none Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons Ltd
Total Heating Surface of Boilers 1619 $\frac{1}{2}$ 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 11-12-16 No. of Certificate 3375
Can each boiler be worked separately Area of fire grate in each boiler 38 $\frac{1}{2}$ ft² No. and Description of Safety Valves to each boiler 2 Spring loaded Area of each valve 4.9 ft² Pressure to which they are adjusted NOT ADJUSTED Are they fitted with easing gear yes
Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean dia. of boilers 13 $\frac{1}{4}$ " Length 10 $\frac{1}{2}$ " Material of shell plates steel
Thickness 1" Range of tensile strength 29 $\frac{1}{2}$ to 33 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.B.L.A.P.
long. seams T.R. BUTTS Diameter of rivet holes in long. seams 1 $\frac{1}{32}$ " Pitch of rivets 9 $\frac{1}{8}$ " Lap of plates or width of butt straps 19"
Per centages of strength of longitudinal joint rivets 87.86 plate 87.65 Working pressure of shell by rules 180 lbs. Size of manhole in shell END PLATE 16"x12"
Size of compensating ring 7 flanged No. and Description of Furnaces in each boiler 2 Right Angle Material steel Outside diameter 47 $\frac{1}{2}$ "
Length of plain part top 9 $\frac{1}{16}$ " Thickness of plates crown 9 $\frac{1}{16}$ " Description of longitudinal joint Welded No. of strengthening rings 1
Working pressure of furnace by the rules 185 Combustion chamber plates: Material steel Thickness: Sides 3 $\frac{1}{4}$ " Back 2 $\frac{1}{2}$ " Top 3 $\frac{1}{4}$ " Bottom 1 $\frac{1}{16}$ "
Pitch of stays to ditto: Sides 11 $\frac{1}{8}$ " x 8 $\frac{1}{2}$ " Back 10 $\frac{1}{8}$ " x 11" Top 11 $\frac{1}{8}$ " x 8 $\frac{1}{2}$ " If stays are fitted with nuts or riveted heads none Working pressure by rules 180 lbs.
Material of stays steel Area at smallest part 2.79 ft² Area supported by each stay 137.5 ft² Working pressure by rules 182 End plates in steam space:
Material steel Thickness 1 $\frac{1}{32}$ " Pitch of stays 23" x 18 $\frac{1}{8}$ " How are stays secured DOUBLE NUTS & WASHERS Working pressure by rules 181.2 Material of stays steel
Area at smallest part 7.36 ft² Area supported by each stay 416.8 ft² Working pressure by rules 183 Material of Front plates at bottom steel
Thickness 3 $\frac{1}{4}$ " Material of Lower back plate steel Thickness 1 $\frac{1}{16}$ " Greatest pitch of stays 14 $\frac{1}{8}$ " x 10 $\frac{1}{8}$ " Working pressure of plate by rules 181
Diameter of tubes 3 $\frac{1}{4}$ " Pitch of tubes 4 $\frac{3}{4}$ " x 4 $\frac{1}{2}$ " Material of tube plates steel Thickness: Front 3 $\frac{1}{4}$ " Back 3 $\frac{1}{4}$ " Mean pitch of stays 10.56"
Pitch across wide water spaces 14 $\frac{1}{2}$ " Working pressures by rules 192.7 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8"x2 $\frac{1}{8}$ " Length as per rule 30 $\frac{1}{2}$ " Distance apart 11 $\frac{1}{8}$ " Number and pitch of stays in each 2-8 $\frac{1}{2}$ "
Working pressure by rules 182 Steam dome: description of joint to shell % of strength of joint
Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes
Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed
SUPERHEATER. Type Date of Approval of Plan Tested by Hydraulic Pressure to
Date of Test Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler
Diameter of Safety Valve Pressure to which each is adjusted Is Easing Gear fitted

IS A DONKEY BOILER FITTED? No

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— 2 Top-end bolts & nuts, 2 Bottom end bolts & nuts, 2 Main bearing bolts and nuts, 1 set of Coupling bolts & nuts, 1 spare set of valves for each pump, 1 set of springs for piston rod packing, 1 Safety Valve spring, 1 Main check valve, 1 Donkey check valve, 6 girth ring studs & nuts, 3 Condenser tubes, 20 Condenser grommets, 3 Escape valve springs, 1 complete set of fire-bars, 3 Boiler tubes.

(The above articles of spare gear are stored at Portsmouth Dockyard, and will be placed on board before the vessel is handed over.)

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- During SURVEY on board vessel -- Total No. of visits

4th & 17th May. 6th August. 3

Is the approved plan of main boiler forwarded herewith No

" " " donkey " " "

Dates of Examination of principal parts—Cylinders 4-5-20 Slides 4-5-20 Covers 4-5-20 Pistons 4-5-20 Rods 4-5-20 Connecting rods 4-5-20 Crank shaft 4-5-20 Thrust shaft 4-5-20 Tunnel shafts — Screw shaft 4-5-20 Propeller 4-5-20 Stern tube 4-5-20 Steam pipes tested — Engine and boiler seatings 4-5-20 Engines holding down bolts 4-5-20 Completion of pumping arrangements — Boilers fixed — Engines tried under steam NOT YET TRIED. Completion of fitting sea connections — Stern tube — Screw shaft and propeller — Main boiler safety valves adjusted NOT YET ADJUSTED Thickness of adjusting washers — Material of Crank shaft — Identification Mark on Do. — Material of Thrust shaft — Identification Mark on Do. — Material of Tunnel shafts — Identification Marks on Do. — Material of Screw shafts — Identification Marks on Do. — Material of Steam Pipes Copper Test pressure — 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 — If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, &c.)

The Machinery of this vessel has been built under British Corporation survey and the Boiler under Lloyd's Register survey, to plans & specification jointly approved by Lloyd's Register & British Corporation.

The materials & workmanship throughout appear to be sound and good.

The spare gear is in order with the rule requirements and the specification, and the machinery will be eligible in my opinion to have notation L.M.C. 5-20, and date of examination of Tail shaft 5-20, when the Safety Valves have been adjusted under steam and a trial under working conditions carried out.

The amount of Entry Fee ... £ : : When applied for. Special ... £ : : 19. Donkey Boiler Fee ... £ : : 19. Travelling Expenses (if any) £ : : 19.

Committee's Minute

Assigned

WED 29 DEC 1920

L.M.C. 5-20

Object.

CERTIFICATE WRITTEN

FRI 27 JAN 1922

C. H. Boyle
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation