

# REPORT ON MACHINERY.

No. 29437

Received at London Office MON. 24 JUL. 1916

Date of writing Report 19 22/7/16 When handed in at Local Office Port of Hull  
 No. in Survey held at Hull Date, First Survey 10-6-15 Last Survey 13-7-1916  
 Reg. Book. 420 on the Steam Trawler "Orvieto." (Number of Visits 63)  
 Master Built at Swirley By whom built book, Milton & Gemmill Tons } Gross 226  
 Engines made at Hull By whom made Amos & Smith Ltd (No. 2731) when made 1916 } Net 109  
 Boilers made at Hull By whom made Amos & Smith Ltd when made 1916 } When built 1916  
 Registered Horse Power 75 Owners A. L. Black Port belonging to Gimsby  
 Nom. Horse Power as per Section 28 75 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

**ENGINES, &c.**—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 12" 21" 34" Length of Stroke 24" Revs. per minute 110 Dia. of Screw shaft as per rule 7.23" Material of screw shaft 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 34"  
 Dia. of Tunnel shaft as per rule 6.48" Dia. of Crank shaft journals as per rule 6.8" Dia. of Crank pin 7" Size of Crank webs 13 1/2" x 4 1/2" Dia. of thrust shaft under collars 7" Dia. of screw 8" 9" Pitch of Screw 11' 0" No. of Blades 4 State whether moveable no Total surface 29 sq  
 No. of Feed pumps 1 Diameter of ditto 2 5/8" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 1 Diameter of ditto 2 5/8" Stroke 12" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 1 Sizes of Pumps 6 1/4" 4 1/4" 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room two 2" one forward and one aft. In Holds, &c. two 2" fore hold and slushwell.  
 No. of Bilge Injections 1 sizes 3" Connected to condenser, or to circulating pump no 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 hold 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 1-2-16 of Stern Tube 1-2-16 Screw shaft and Propeller 1-2-16  
 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 Steel Co. of Scotland  
 Total Heating Surface of Boilers 1268 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended  
 Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 1-6-16 No. of Certificate 3139  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 315 sq ft No. and Description of Safety Valves to each boiler 2 spring loaded Area of each valve 3.97 sq in Pressure to which they are adjusted 204 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork abt. 7" Mean dia. of boilers 12' 9 1/16" Length 10' 0" Material of shell plates S.  
 Thickness 1 5/32" Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D. R.  
 Long. seams T.S.D.B.S. Diameter of rivet holes in long. seams 1 3/16" Pitch of rivets 7 3/4" Lap of plates or width of butt straps 16 3/4"  
 Per centages of strength of longitudinal joint 91.4 Working pressure of shell by rules 200 Size of manhole in shell 16" x 12"  
 Size of compensating ring 40" x 30" x 1 1/2" No. and Description of Furnaces in each boiler 3 plain Material S. Outside diameter 3' 1 5/8"  
 Length of plain part 81 3/4" Thickness of plates 13 1/16" Description of longitudinal joint Welded No. of strengthening rings Yes  
 Working pressure of furnace by the rules 214 Combustion chamber plates: Material S. Thickness: Sides 3/4" Back 2 3/8" Top 1 1/16" Bottom 3/4"  
 Pitch of stays to ditto: Sides 8 3/4" x 9 1/2" Back 8" x 9 1/4" Top 8 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 202  
 Material of stays S. Diameter at smallest part 2.066 Area supported by each stay 79.5 Working pressure by rules 234 End plates in steam space S.  
 Thickness 1 1/16" Pitch of stays 16 1/2" x 15 3/4" How are stays secured scanned Working pressure by rules 206 Material of stays S.  
 Diameter at smallest part 6.1 Area supported by each stay 260 Working pressure by rules 244 Material of Front plates at bottom S.  
 Thickness 1 1/16" Material of Lower back plate S. Thickness 1 5/16" Greatest pitch of stays 14 1/2" x 8" Working pressure of plate by rules 222  
 Diameter of tubes 3 1/2" Pitch of tubes 4 7/8" x 5" Material of tube plates S. Thickness: Front 1 1/16" Back 7/8" Mean pitch of stays 10.8"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 206 lbs. Girders to Chamber tops: Material S. Depth and thickness of girder at centre 8" x 2" Length as per rule 2' 8 3/4" Distance apart 8 1/2" Number and pitch of stays in each two 9 1/2"  
 Working pressure by rules 211 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? no

SPARE GEAR. State the articles supplied:— Two top end bolts and nuts; two main bearing bolts and nuts; one set of coupling bolts and nuts; one check valve and one donkey cheque valve; a quantity of bolts and nuts of various sizes and iron of various lengths and sizes; Two bottom end connecting rod bolts and nuts; one set of feed and bilge pump valves.

The foregoing is a correct description,

FOR AMOS & SMITH LTD.

*M. Brackenbury*

Manufacturer.

Dates of Survey while building { During progress of work in shops -- } 1915:— Jan 10, 22, 26, July 2, 9, 14, 30, Aug 6, 13, 20, 27, Sep 3, 13, 20, 25, Oct 5, 12, 19, 29, Nov 5, 12  
 { During erection on board vessel --- } 19, 26, 29, Dec 3, 7, 13, 17, 21, 30, 1916:— Jan 6, 7, 13, 20, 28, Feb 1, 4, 18, 25, Mar 9, 17, 23, 30, 31, Apr 6, 7  
 Total No. of visits 63 Is the approved plan of main boiler forwarded herewith Yes ✓  
 " " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 31-3-16 Slides 31-3-16 Covers 31-3-16 Pistons 6-4-16 Rods 17-6-16  
 Connecting rods 17-6-16 Crank shaft 17-6-16 Thrust shaft 17-6-16 Tunnel shafts ✓ Screw shaft 6-1-16 Propeller 6-1-16  
 Stern tube 6-1-16 Steam pipes tested 27-6-16 Engine and boiler seatings 1-2-16 Engines holding down bolts 23-6-16  
 Completion of pumping arrangements 13-7-16 Boilers fixed 23-6-16 Engines tried under steam 6-7-16  
 Main boiler safety valves adjusted 6-7-16 Thickness of adjusting washers P  $\frac{11}{32}$  S  $\frac{13}{32}$   
 Material of Crank shaft Steel Identification Mark on Do. 17-6-16 Material of Thrust shaft Iron Identification Mark on Do. 17-6-16  
 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 6-1-16  
 Material of Steam Pipes S. D. Copper ✓ Test pressure 400 lbs per sq. inch ✓  
 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 "Carillon"

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 and the rules of this Society; the materials and workmanship are good; the boiler and steam pipes have been tested as above by hydraulic pressure and found satisfactory. The machinery has been properly fitted and secured on board, and on completion tried under steam and found satisfactory. The safety valves have been adjusted under steam and tested for accumulation which did not exceed 210 lbs per sq. inch.

In my opinion the vessel is eligible for the record + I.M.C. 7, 16.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 7, 16.

*JWR*  
*24/7/16*

*Geo. Allan*

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

The amount of Entry Fee ... £ 1 : - :  
 Special ... £ 11 : 5 :  
 Donkey Boiler Fee ... £ - : - :  
 Travelling Expenses (if any) £ - : 2 :  
 When applied for, 22/7/1916  
 When received, 17.8.1916

Committee's Minute TUE JUL 25 1916

Assigned + *L.M.C. 7, 16*

MACHINERY CERTIFICATE WRITTEN



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Null

The Surveys are required to be signed on or before the date for Committee's Minute.