

REPORT ON MACHINERY.

No. 31016
FRI. 11. APR. 1919

Received at London Office

Date of writing Report 10/4 1919 When handed in at Local Office 10/4 1919 Port of Hull

No. in Survey held at Hull. Date, First Survey 15/5/18 Last Survey 4/4/1919

Reg. Book. on the Michael Griffith ("Castle" Class Drawler) Number of Visits 61 Gross 290

Master Built at Beverley By whom built Cook, Welton & Gemmell Net 127

Engines made at Hull By whom made Amos & Smith (n.p. 2964) when made 1919

Boilers made at Hull By whom made Amos & Smith (n.p. 2963) when made 1919

Registered Horse Power Owners British Admiralty Port belonging to

Nom. Horse Power as per Section 28 8786. 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 12½"-21" & 35" Length of Stroke 26" Revs. per minute 110 Dia. of Screw shaft as per rule 7.57 Material of iron as fitted 7 7/8 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 ✓ 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 ✓ Dia. of Crank shaft journals as per rule 6.95 6.91 Dia. of Crank pin 7 1/8" Size of Crank webs 14" x 4 9/16" Dia. of thrust shaft under collars 7 1/8" Dia. of screw 9'-6" Pitch of Screw 11'-1 1/2" No. of Blades 4 State whether moveable No Total surface 35.5 sq

No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2 Diameter of ditto 2 1/2" Stroke 12" Can one be overhauled while the other is at work Yes.

No. of Donkey Engines 2 + ejector Sizes of Pumps 6" x 3" x 6" & 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room One 2" engine room one 2" aft & one 2" fore In Holds, &c. One 2" from forehold one 2" from slush well also separate 2" ejector suction from slush well.

No. of Bilge Injections one size 3 1/2" Connected to condenser, or to circulating pump pump Is a separate Donkey Suction fitted in Engine room & size 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 ✓

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Valves & cocks ✓

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.

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

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Port Talbot Steel Co. Ltd - Port Talbot.

Total Heating Surface of Boilers 1590 sq ft 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 13/3/19 No. of Certificate 3344

Can each boiler be worked separately ✓ Area of fire grate in each boiler 48.75 sq ft No. and Description of Safety Valves to each boiler two spring loaded area of each valve 4.90" 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 12" dia. of boilers 16 1/2" Length 10'-6 1/16" Material of shell plates steel

Thickness 1 3/32" Range of tensile strength 28/32 tons Are the shell plates welded or flanged no. Descrip. of riveting: cir. seams double.

long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 5/32" Pitch of rivets 8" Top of plates or width of butt straps 17"

Per centages of strength of longitudinal joint rivets 89.3 Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 9" x 1 3/32" No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 40 3/16"

Length of plain part top 8 1/2" Thickness of plates crown 2 5/32" Description of longitudinal joint welded No. of strengthening rings

Working pressure of furnace by the rules 188 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 2 1/32" Top 1/16" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/2" x 9 3/8" Back 9" x 9" Top 9 1/2" x 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182

Material of stays steel Area at smallest part 2.070" Area supported by each stay 90.250" Working pressure by rules 206 End plates in steam space:

Material steel Thickness 1 1/16" Pitch of stays 17 7/8" x 17" How are stays secured DN & W Working pressure by rules 181 Material of stays steel

Area at smallest part 6.10" Area supported by each stay 2950" Working pressure by rules 215 Material of Front plates at bottom steel

Thickness 3 1/32" Material of Lower, back plate steel. Thickness 1 5/16" Greatest pitch of stays 14" x 9" Working pressure of plate by rules 219

Diameter of tubes 3 1/2" Pitch of tubes 5" x 4 3/4" Material of tube plates steel Thickness: Front 3 1/2" Back 7/8" Mean pitch of stays 10"

Pitch across wide water spaces 14" Working pressures by rules 184 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 1/2" x 1 3/4" Length as per rule 32" Distance apart 9 1/2" Number and pitch of stays in each two 9 1/2"

Working pressure by rules 197 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 ✓

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?



4. 31016.

IS A DONKEY BOILER FITTED? No.

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:-

Two top & two bottom end bolts & nuts, one set coupling bolts & nuts, two main bearing bolts & nuts, one set each of Air Feed & Bilge Pump Valves, one set piston studs & nuts, three condenser tubes, three boiler tubes, one escape valve spring of each size, two donkey pump suction & delivery valves, a quantity of assorted bolts & nuts, & iron of assorted sizes.

The foregoing is a correct description,

For AMOS & SMITH LTD.

A. J. Robinson Manufacturer.

Dates of Survey while building: During progress of work in shops... 1918. May 15. 22. Jun 7. 14. 18. 20. 25. 29. Jul 5. 8. 9. 11. 15. 19. 26. 30. Aug 3. 10. 15. 22. 26. 29. Sep. 2. 5. 10. 14. 17. 30 Oct. 28. Nov. 14. 29. Dec. 5. 11. 17. 18. 20. 24. 31. 1919. Jan 2. 5. 8. 13. 16. 17. 18. 20. 22. 24. 27. 28. Total No. of visits 61

Is the approved plan of main boiler forwarded herewith previously sent

Dates of Examination of principal parts - Cylinders 11/12/18 Slides 24/12/18 Covers 24/12/18 Pistons 24/12/18 Rods 24/12/18 Connecting rods 31/12/18 Crank shaft 8/1/19 Thrust shaft 14/1/19 Tunnel shafts ✓ Screw shaft 22/8/18 Propeller 22/8/18 Stern tube 22/8/18 Steam pipes tested 24/3/19 Engine and boiler seatings 2/1/19 Engines holding down bolts 22/3/19 Completion of pumping arrangements 2/4/19 Boilers fixed 22/3/19 Engines tried under steam 29/3/19 Completion of fitting sea connections 2/9/18 Stern tube 2/9/18 Screw shaft and propeller 2/9/18 Main boiler safety valves adjusted 29/3/19 Thickness of adjusting washers P 5/16" F S 1/32" F Material of Crank shaft steel. Identification Mark on Do. 2206 WNS Material of Thrust shaft IRON Identification Mark on Do. 2208 Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts iron Identification Marks on Do. 2218 Material of Steam Pipes Copper (Solid Drawn) Test pressure 360 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 Yes If so, state name of vessel Griffith Griffith

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 the Society. The material & workmanship are good. The boiler & steam pipe have been tested as above & found sound & good. The machinery has been properly fitted & secured on board the vessel & on completion was tested at full power for two hours as required by the Admiralty & found satisfactory. The safety valves have been adjusted under steam & accumulation did not exceed 8 lbs. In my opinion the vessel is eligible for the record + L.M.C. 4, 19.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 4-19

WRS 11/4/19

The amount of Entry Fee ... £ 2 : 0 : When applied for, Special ... £ 26 : 2 : 7/4 1919 Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : 9/4 1919

W. Stone. Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 15. APR. 1919

Assigned + L.M.C. 4.19



Vertical text on the left margin: Certificate (if required) to be sent to Hull. The Surveyors are requested not to write on or below the space for Committee's Minute.

MACHINERY CERTIFICATE WRITTEN