

# REPORT ON MACHINERY

No. 30900

FRI. 24 JAN. 1919

Received at London Office

Date of writing Report

19

When handed in at Local Office

22/1/19 Port of Hull.

Date, First Survey May 15/18 Last Survey 15 Jan<sup>ry</sup> 1919

(Number of Visits 52)

No. in Survey held at Hull.

Reg. Book. on the John Graham ("Castle" class Trawler)

Tons { Gross 290  
Net 127  
When built 1918

Master Built at Beverley By whom built Cook Welton & Gemmell Ltd when made 1918

Engines made at Hull By whom made Amos & Smith Ltd (n<sup>o</sup>. 2961) when made 1918

Boilers made at Hull By whom made Amos & Smith Ltd (n<sup>o</sup>. 2961) when made 1918

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 12 1/2" - 21" & 35" Length of Stroke 26" Revs. per minute 108 Dia. of Screw shaft as per rule 7.57 as fitted 7 5/8" 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 6.58 as fitted 6 3/4" Dia. of Crank shaft journals as per rule 6.95 as fitted 6.91" Dia. of Crank pin 7 1/8" Size of Crank webs 14" x 4 1/2" 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 ft

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" after one 2" for In Holds, &c. One 2" from forehold one 2" from shushwell

also separate 2" ejector suction from shushwell. No. of Bilge Injections One sizes 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 Yes

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 Yes Is it fitted with a watertight door Yes worked from

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Port Talbot Steel Coy - Port Talbot One single ended.

Total Heating Surface of Boilers 1590 Is Forced Draft fitted No. No. and Description of Boilers No. of Certificate 3338

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 6/12/18

Can each boiler be worked separately Yes 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 valve 4.90 sq ft 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" Mean dia. of boilers 162" Length 10'-6 1/2" 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 9/16"

Length of plain part top 8 1/2" bottom 7'6" Thickness of plates crown 2 5/32" Description of longitudinal joint welded. No. of strengthening rings 40 9/16"

Working pressure of furnace by the rules 188 Combustion chamber plates: Material steel Thickness: Sides 1/16" Back 3/32" 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 3/8" 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 1/32" 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 lbs Steam dome: description of joint to shell % 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

UPERHEATER. Type 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 & two bottom end bolts & nuts, one set coupling bolts & nuts, two main bearing bolts & nuts, one set each of Air Reed & 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

*B. J. Robinson*

Manufacturer.

Dates of Survey while building: 1918: - May 15, 22, Jun 7, 14, 18, 20, 25, 29, July 3, 8, 9, 11, 13, 15, 19, 24, 26, 30, Aug 3, 12, 15. During progress of work in shops: 19, 22, 29, Sep 2, 5, 10, 14, 17, 30, Oct 8, 28, Nov 5, 14, 18, 28, 29, Dec 3, 5, 6, 11, 17, 21, 30, 1919: - Jan 2, 4, 6, 7, 9, 10, 11, 13.

Is the approved plan of main boiler forwarded herewith *previously sent.*

Dates of Examination of principal parts: Cylinders 5/11/18, Slides 14/11/18, Coars 14/11/18, Pistons 14/11/18, Rods 18/11/18, Connecting rods 18/11/18, Crank shaft 18/11/18, Thrust shaft 28/11/18, Tunnel shafts 26/7/18, Screw shaft 26/7/18, Propeller 26/7/18, Stern tube 26/7/18, Steam pipes tested 2/1/19, Engine and boiler seatings 3/12/18, Engines holding down bolts 30/12/18, Completion of pumping arrangements 6/1/19, Boilers fixed 17/12/18, Engines tried under steam 4/1/19, Completion of fitting sea connections 22/7/18, Stern tube 26/7/18, Screw shaft and propeller 26/7/18, Main boiler safety valves adjusted 4/1/19, Thickness of adjusting washers P 1/2" S 1/2". Material of Crank shaft *steel*, Identification Mark on Do. *2975 G.P.W.*, Material of Thrust shaft *steel*, Identification Mark on Do. *2976 W.N.S. 1900 J.R.*, Material of Tunnel shafts *✓*, Identification Marks on Do. *✓*, Material of Screw shafts *iron*, Identification Marks on Do. *✓*, Material of Steam Pipes *Solid drawn copper*, Test pressure *360*. 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 *"William Darnold"*

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 materials & 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 6 lbs. In my opinion the vessel is eligible for the record + L.M.C. 1.19.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 1.19.

*W.D.*  
*24/1/19*  
*J.R.*

The amount of Entry Fee £ 2 : 0 : - When applied for, Special £ 26 : 2 : - 23-1-19, Donkey Boiler Fee £ : : - When received, Travelling Expenses (if any) £ : : - 24.1.19 R.R.N. 25/1/19.

*W. R. Stone* - *John Robinson*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 28 JAN 1919  
Assigned + L.M.C. 1.19.



Certificate (if required) to be sent to Hull.

The Surveyors are requested not to write on or below the space for Committee's Minute.