Rpt. 4.

REPORT ON MACHINERY.

No. 30,519

Received at London Office FRI. 17 MAY. 1918

Date of writing Report 19 When handed in at Local Office 16/5/ 19 18 Port of Hull.

No. in Reg. Book. Survey held at Hull. Date, First Survey 22-10-17 Last Survey 14-5-1918 (Number of Visits 39)

on the Steam Trawler "William Bell" Tons Gross 289.81 Net 119.23.

Master Built at Beverley. By whom built Cook, Welton & Gemmell, Ltd. When built 1918

Engines made at Hull. By whom made Amos & Smith, Ltd. (No. 2936) when made 1918

Boilers made at Hull. By whom made Amos & Smith Ltd. (No 2936) when made 1918

Registered Horse Power Owners British Admiralty. Port belonging to —

Nom. Horse Power as per Section 28 84. 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 114. Dia. of Screw shaft as per rule 7.56" 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 — 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 6.54" as fitted 6¾" Dia. of Crank shaft journals as per rule 6.9" as fitted 7/8 Dia. of Crank pin 7/8" Size of Crank webs 14"×4 1/16" Dia. of thrust shaft under collars 7/8". Dia. of screw 9'6". Pitch of Screw 11' 1½". No. of Blades 4. State whether moveable No. Total surface 35½ ☐ft.

No. of Feed pumps 2. Diameter of ditto 2½". Stroke 12". Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 2. Diameter of ditto 2½". Stroke 12". Can one be overhauled while the other is at work Yes.

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

No. of Bilge Injections 1 sizes 3½". 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 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 Forward suction. How are they protected Wood covering.

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 John Spencer & Sons.

Total Heating Surface of Boilers 1590 ☐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 23-3-18 No. of Certificate 3281

Can each boiler be worked separately — Area of fire grate in each boiler 48.75 ☐ft. No. and Description of Safety Valves to each boiler Two spring loaded. Area of each valve 4.9 ☐". 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 8". ~~Mean~~ INT. dia. of boilers 162". Length 10'-6 15/16" Material of shell plates Steel.

Thickness 1 3/32". Range of tensile strength 28/32. 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". ~~Lap of plates or~~ width of butt straps 14".

Per centages of strength of longitudinal joint rivets 89.3 plate 85.5 Working pressure of shell by rules 180 lbs. Size of manhole in shell 16"×12".

Size of compensating ring 9"×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 81½" bottom 76" Thickness of plates crown 25/32" bottom — Description of longitudinal joint Welded. No. of strengthening rings —

Working pressure of furnace by the rules 188. Combustion chamber plates: Material Steel. Thickness: Sides 11/16". Back 21/32". Top 11/16". Bottom 7/8".

Pitch of stays to ditto: Sides 9½"×9 3/8" Back 9"×9". Top 9½"×9½" If stays are fitted with nuts or riveted heads Nuts. Working pressure by rules 181.

Material of stays Steel. Area at smallest part 2.04 ☐". Area supported by each stay 90.25 ☐". Working pressure by rules 206. End plates in steam space: Material Steel. Thickness 1 1/16". Pitch of stays 14 3/8"×14". How are stays secured D.N.& W. Working pressure by rules 181. Material of stays Steel.

Area at smallest part 6.1 ☐". Area supported by each stay 295 ☐". Working pressure by rules 215. Material of Front plates at bottom Steel.

Thickness 31/32". Material of Lower back plate Steel. Thickness 15/16". Greatest pitch of stays 14"×9". Working pressure of plate by rules 219.

Diameter of tubes 3½". Pitch of tubes 5"×4 3/4". Material of tube plates Steel. Thickness: Front 31/32". Back 7/8". Mean pitch of stays 10".

Pitch across wide water spaces 14". Working pressures by rules 184 lbs. Girders to Chamber tops: Material Steel. Depth and thickness of girder at centre 8½"×1 3/4". Length as per rule 32". Distance apart 9½". Number and pitch of stays in each Two, 9½".

Working pressure by rules 194. 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:— Two top end bolts & nuts, two bottom end bolts & nuts; one set of coupling bolts & nuts, two main bearing bolts & nuts, one set of air, feed & bilge pump valves; one set of piston studs & nuts. Three condenser tubes, three boiler tubes, one escape valve spring each size, two donkey pump suction & delivery valves & a quantity of assorted bolts & nuts & iron of various sizes.

The foregoing is a correct description,

For AMOS & SMITH LTD.

J. F. Robinson SECRETARY Manufacturer.

Dates of Survey while building — During progress of work in shops: 1917.- Oct 22. Nov. 17 23. Dec 3. 8. 10. 15. 21. 24. 29 1918.- Jan 2. 10. 11. 16. 22. 29. Feb 1. 7. 8.

During erection on board vessel: 11. 15. 15. 21. Mar 6. 12. 14. 15. 16. 20. 22, 23 Apr 2. 5. 13. 25. May 3. 9. 14.

Total No. of visits 39

Is the approved plan of main boiler forwarded herewith no ✓

" " " donkey " " " ✓

Dates of Examination of principal parts— Cylinders 29-1-18 Slides 29-1-18 Covers 29-1-18 Pistons 11-2-18 Rods 11-2-18

Connecting rods 18-2-18 Crank shaft 14-3-18 Thrust shaft 16-3-18 Tunnel shafts ✓ Screw shaft 21-12-17 Propeller 21-12-17

Stern tube 21-12-17 Steam pipes tested 25-4-18 Engine and boiler seatings 2-1-18 Engines holding down bolts 13-4-18

Completion of pumping arrangements 9-5-18 Boilers fixed 13-4-18 Engines tried under steam 3-5-18

Completion of fitting sea connections 2-1-18 Stern tube 2-1-18 Screw shaft and propeller 2-1-18.

Main boiler safety valves adjusted 3-5-18 Thickness of adjusting washers P. 9/32 S 11/32

Material of Crank shaft Iron. Identification Mark on Do. 1863 GA. 14-3-18 Material of Thrust shaft Iron. Identification Mark on Do. 1864 GA. 16-3-18

Material of Tunnel shafts ✓ Identification Marks on Do. ✓ Material of Screw shafts Iron Identification Marks on Do. 1843 GA. 21-11-17

Material of Steam Pipes Solid drawn copper 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 "William Brady" Hull Rpt. 30510

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 boilers & steam pipes 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 & tested for accumulation which did not exceed 190 lbs.

In my opinion the vessel is eligible for the record + L.M.C. 5. 18.

Hull

It is submitted that this vessel is eligible for THE RECORD. + LMC 5. 18.

J.W.D. 17/5/18

The amount of Entry Fee ... £ 2 : - : - When applied for, 14-5 1918

Special ... ... £ 26 : 2 : -

Donkey Boiler Fee ... £ : : When received, 15/5 1918 MK

Travelling Expenses (if any) £ : :

P. Fitzgerald. J. W. D. Reid.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED. 22 MAY. 1918

Assigned + L. M. C. 5. 18

MACHINERY CERTIFICATE EMITTED

Certificate (if required) to be sent to

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