

REPORT ON MACHINERY.

SUNDERLAND RPT. No 28011

No. 13983

Received at London Office TUE 4 JAN. 1921

Date of writing Report 19 When handed in at Local Office 19 Port of NEWCASTLE-ON-TYNE

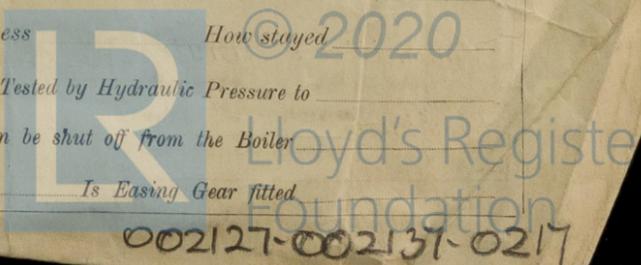
No. in Survey held at Walker on Tyne Date, First Survey 21st Oct. 1919 Last Survey 10th Jan. 1921
 Reg. Book. on the SS "VANELLUS" (Number of Visits 58) Gross 1886

Master F. F. Brund Built at Sunderland By whom built Swan Hunter & Luggan Richards & Co. Ltd when made 1920
 Engines made at Walker on Tyne By whom made Swan Hunter & Luggan Richards & Co. Ltd when made 1920
 Boilers made at Walker on Tyne By whom made Swan Hunter & Luggan Richards & Co. Ltd when made 1920
 Registered Horse Power Owners Cook & Co. Ltd Port belonging to London
 Nom. Horse Power as per Section 28 318 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three No. of Cranks three
 Dia. of Cylinders 20 1/2 - 34 - 56 Length of Stroke 42 Revs. per minute Dia. of Screw shaft as per rule 11.96 Material of screw shaft Steel
 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 49 1/2 inches
 Dia. of Tunnel shaft as per rule 10.67 Dia. of Crank shaft journals as per rule 11.21 Dia. of Crank pin 11 1/4 Size of Crank webs 16 1/2 x 7 3/8 Dia. of thrust shaft under collars 11 1/2 Dia. of screw 14 1/2 Pitch of Screw 15 - 0 No. of Blades 4 State whether moveable no Total surface 70 Sq feet
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 22 Can one be overhauled while the other is at work Yes
 No. of Bilge pumps 2 Diameter of ditto 3 1/2 Stroke 22 Can one be overhauled while the other is at work Yes
 No. of Donkey Engines 3 Sizes of Pumps 8"-9"-8"; 8"-5"-8"; 4 1/2"-3"-6" ALL DUPLEX No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 1 off 3" bore, 3 off 2 3/4" bore In Holds, &c. 4 off 2 3/4" bore to Forward Holds, 1 off 2" bore Forward Oil Tight Well
 4 off 2 3/4" bore to Aft Holds, 1 off 2" bore to Oil Tight Well (aft.), 1 off 2 1/2" bore to Tunnel Well.
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump cp Is a separate Donkey Suction fitted in Engine room & size Yes 3"
 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 Just below
 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 None How are they protected
 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 upper platform

BOILERS, &c.—(Letter for record 5) Manufacturers of Steel J. Spencer & Sons Ltd
 Total Heating Surface of Boilers 5000 Is Forced Draft fitted Yes No. and Description of Boilers Three Cyl. S. E. multitubular
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 21. 7. 20 No. of Certificate 9434
 Can each boiler be worked separately Yes Area of fire grate in each boiler 42 sq ft No. and Description of Safety Valves to each boiler two direct spring Area of each valve 7.06 sq in 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 12-6" Length 11-6" Material of shell plates steel
 Thickness 31/32 Range of tensile strength 29 3/4 / 34 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams Double Lap long. seams DB stop Diameter of rivet holes in long. seams 1" Pitch of rivets 7-3 1/2 Lap of plates or width of butt straps 15"
 Per centages of strength of longitudinal joint rivets 86.1% plate 85.7% Working pressure of shell by rules 182 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 24 1/2 x 18 3/4 No. and Description of Furnaces in each boiler two Duglans Material steel Outside diameter 47 7/8
 Length of plain part top 4-10 1/2 bottom Thickness of plates crown 9/16 Description of longitudinal joint weld No. of strengthening rings
 Working pressure of furnace by the rules 183 lbs Combustion chamber plates: Material steel Thickness: Sides 21/32 Back 32 Top 32 Bottom 29/32
 Pitch of stays to ditto: Sides 9 x 8 1/2 Back 8 1/4 x 8 1/4 Top 8 1/2 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 194 lbs
 Material of stays steel Area at smallest part 2.03 Area supported by each stay 76.7 Working pressure by rules 239 lbs End plates in steam space:
 Material steel Thickness 1 1/2 Pitch of stays 18 x 14 How are stays secured 8 nuts Working pressure by rules 183 lbs Material of stays steel
 Area at smallest part 4.57 Area supported by each stay 252 Working pressure by rules 186 lbs Material of Front plates at bottom steel
 Thickness 29/32 Material of Lower back plate steel Thickness 1" Greatest pitch of stays 13 1/2 Working pressure of plate by rules 272 lbs
 Diameter of tubes 2 1/2 Pitch of tubes 3 3/4 x 3 3/4 Material of tube plates steel Thickness: Front 29/32 Back 3/4 Mean pitch of stays 9 3/8
 Pitch across wide water spaces 13 1/2 Working pressures by rules 184 lbs - 229 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 7/8 x 1 1/4 Length as per rule 30 1/2 Distance apart 9 Number and pitch of stays in each 20 7 1/2
 Working pressure by rules 182 lbs Steam dome: description of joint to shell none % 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



002127-002131-0217

IS A DONKEY BOILER FITTED? *None*

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:— *one spare propeller 56 fire bars (Template of propeller one + keyway + shaft Coupling) 2 top end bolts & nuts 2 bottom end bolts & nuts 2 main bearing bolts & nuts 1 set of feed pump valves 1 set large pump valves, quantity assorted bolts & nuts + iron of various sizes. 6 shaft coupling bolts & nuts 6 junk king bolts. 1 slide rod and gland bush & neckring 1 piston rod gland bush & neckring Various Stores.*

The foregoing is a correct description,

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD.

G. F. J. J. J.

Manufacturer.

Dates of Survey while building: During progress of work in shops - - - 1919 Oct. 21, Dec. 11, 1920 Jan. 6, 8, 15, 20, 26, Feb. 10, 15, Mar. 3, 10, 12, 23, 26, May 5, 7, 11, 17, 19, Jun. 1, 4, 8, 9, 13, 15, 31, Jul. 5, 13, 14, 15, 19, 20, 21, 22, 27, Aug. 12, 23, 26, 31, Sep. 13, 15, 23, 27, 30, Oct. 4, 6, 12, 13, 17, 28, Nov. 10, 12, 16, 18. Boilers duplicate of order nos 1080/1082/1116. Total No. of visits: 54 (58) *1919 31 Aug. 7 Dec. Jan. 6. 1920* Is the approved plan of main boiler forwarded herewith *Yes*

Dates of Examination of principal parts: Cylinders 10. 20 Slides 10. 20 Covers 10 20 Pistons 10. 20 Rods 10. 20 Connecting rods 10. 20 Crank shaft 23. 9. 20 Thrust shaft 18. 10. 19 Tunnel shafts 10. 3. 20 Screw shaft 22. 7. 20 Propeller 12. 11. 20 Stern tube 12. 11. 20 Steam pipes tested 17 Nov 20 Engine and boiler seatings 12. 11. 20 Engines holding down bolts 12. 11. 20 Completion of pumping arrangements *to be done at Sunderland 6. 1. 21 4 AM* Boilers fixed 18. Nov 20 Engines tried under steam 18 November 20 Completion of fitting sea connections *done at Sunderland 31. 8. 20 4 AM* Stern tube fitted at Sunderland 31. 8. 20 4 AM Screw shaft and propeller Nov. 20 Main boiler safety valves adjusted 18 Nov 20 Thickness of adjusting washers *P5B. P5/6 S3/8 - CB. P3/4 S3/8 S13. P3/8 S3/8 4/20 - LGS* Material of Crank shaft *Steel* Identification Mark on Do. *5146N* Material of Thrust shaft *Steel* Identification Mark on Do. *LGS. 10. 3. 20. 26. 1. 20* Material of Tunnel shafts *Steel* Identification Marks on Do. *3264D. MR* Material of Screw shafts *Steel* Identification Marks on Do. *LLOYDS LGS* Material of Steam Pipes *Iron* Test pressure *booth. 10p at Neptune Works Walker.* 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 *2/s 1116*

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

The machinery built under special survey. The material and workmanship found good and efficient. Boilers tested under hydraulic pressure found good. The machinery fitted up on board, tested under steam and found satisfactory. The vessel has returned to the builders yard at Sunderland under her own steam the machinery working satisfactorily - where the vessel will be completed, & trial trip carried out. To complete the survey. The steering gear. Control from the bridge to fore aft remains to be completed and tested, and spare gear put on board. Re pumping connections are also to be completed. Surveyors at Sunderland advised. In my opinion the vessel will be eligible for the notation of L.M.C. with date upon completion as recommended above.

Steering gear control now laid and tested, spare gear put on board & checked, and pumping arrangements completed & examined. The vessel is now eligible in my opinion for notation of L.M.C. 1. 21 It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 1. 21

Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.

The amount of Entry Fee ...	£ 3 : :	When applied for,
Special ...	£ 35 : 18 :	2 - 1921
Donkey Boiler Fee ...	£ : :	When received,
Travelling Expenses (if any) £	: :	7 th Jan. 1921

Leonard Challerois
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. JAN. 25 1921
Assigned *+ L.M.C. 1. 21.*



CERTIFICATE WRITTEN