

REPORT ON MACHINERY

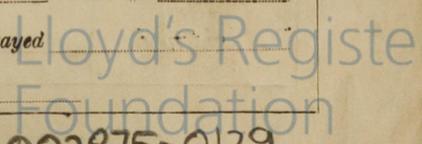
No. 10965.

Received at London Office FRI. 4 MAR 1921

Date of writing Report 2.3.21 10 When handed in at Local Office Port of MIDDLESBRO
 No. in Survey held at Stockton-on-Tees Date, First Survey 8th Sept 20 Last Survey 1st March 1921
 Reg. Book. on the S/S 'CABO HUERTAS' (S.S. N^o 19) Tons } Gross
 Master Built at Bilbao By whom built Soc Espanola de Construccion Naval When built } Net
 Engines made at Stockton By whom made Messrs Blair & Co Lim (N^o 1946) when made 1921
 Boilers made at Stockton By whom made Messrs Blair & Co Lim when made 1921
 Registered Horse Power Owners Port belonging to
 Nom. Horse Power as per Section 28 253 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 22-36-59 Length of Stroke 39 Revs. per minute Dia. of Screw shaft as per rule 12.42 Material of screw shaft as fitted 13.5 Ingt 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 in one 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 tight fit If two liners are fitted, is the shaft lapped or protected between the liners Length of stern bush 4'-8"
 Dia. of Tunnel shaft as per rule 10.856 Dia. of Crank shaft journals as per rule 11.4 Dia. of Crank pin 12 1/4 Size of Crank webs 23 1/2 x 7 1/4 Dia. of thrust shaft under collars 12 1/4 Dia. of screw 15'-6" Pitch of Screw 15'-9" No. of Blades 4 State whether moveable no Total surface 68 sq ft
 No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 28 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 28 Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps Ballast 10" x 10" Feed 5 x 8 Sulfur No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room In Holds, &c.
 No. of Bilge Injections 1 size 6" Connected to condenser, or to circulating pump Is a separate Donkey Suction fitted in Engine room & size
 Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible
 Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the Discharge Pipes above or below the deep water line
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Are the Blow Off Cocks fitted with a spigot and brass covering plate
 What pipes are carried through the bunkers How are they protected
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
 Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges
 Dates of examination of completion of fitting of Sea Connections of Stern Tube Screw shaft and Propeller
 Is the Screw Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record (S) 4120) Manufacturers of Steel Messrs John Spencer & Sons
 Total Heating Surface of Boilers 4126 Is Forced Draft fitted no No. and Description of Boilers Two single ended
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 8.2.21 No. of Certificate 6204
 Can each boiler be worked separately yes Area of fire grate in each boiler 60.2 sq ft No. and Description of Safety Valves to each boiler 2 direct spring Area of each valve 7.07 sq ft Pressure to which they are adjusted Are they fitted with easing gear
 Smallest distance between boilers or uptakes and bunkers or woodwork External Mean dia. of boilers 15'-3" Length 10'-6" Material of shell plates steel
 Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R-lap long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 18 1/2 x 1 1/2
 Per centages of strength of longitudinal joint rivets 86.4 plate 85.6 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"
 Size of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 47 1/2
 Length of plain part top Thickness of plates crown 37 bottom 24 Description of longitudinal joint Weld No. of strengthening rings
 Working pressure of furnace by the rules 192 Combustion chamber plates: Material steel Thickness: Sides 1/2 Back 1/2 Top 1/2 Bottom 3/4
 Pitch of stays to ditto: Sides 9 x 9 1/2 Back 9 1/2 x 9 1/2 Top 10 x 9 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185
 Material of stays steel Diameter at smallest part 1.99 Area supported by each stay 87.8 Working pressure by rules 204 End plates in steam space
 Material steel Thickness 1 1/4 Pitch of stays 18 1/2 x 20 How are stays secured nuts & washers Working pressure by rules 200 Material of stays steel
 Diameter at smallest part 7.24 Area supported by each stay 375 Working pressure by rules 201 Material of Front plates at bottom steel
 Thickness 1 1/2 Material of Lower back plate steel Thickness 1 Greatest pitch of stays 14 1/2 x 9 1/2 Working pressure of plate by rules 232
 Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 3/8 Material of tube plates steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 11 1/2
 Pitch across wide water spaces 14 1/2 Working pressures by rules 191 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 3/4 x 1 1/2 Length as per rule 28 1/2 Distance apart 10 Number and pitch of stays in each 2 @ 8 3/4
 Working pressure by rules 189 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness
 If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed
 Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

SPARE GEAR. State the articles supplied:—

To be examined at - Bilbao

The foregoing is a correct description,

FOR BLAIR & Co., LIMITED,

Geo. Wattasmy

Manufacturer.

MANAGING DIRECTOR

Dates of Survey while building: During progress of work in shops - 1920. Sep 8, 17, Oct 7, 15, 18, 20, 21, 22, 25; Nov 1, 3, 5, 8, 10, 12, 15, 19, 22, 23, 26, 29; Dec 2, 3, 6, 7, 8, 10, 13, 15, 16, 17, 20, 21, 22, 24, 29, 30, 31 - 1921. Jan 5, 7, 10, 12, 14, 18, 20, 21, 24, 26, 27, 31; Feb 3, 4, 8, 10, 11, 14, 16, 18, 21, 24; Mar 1.

Total No. of visits 02. Is the approved plan of main boiler forwarded herewith yes Return for duplicate Boiler donkey

Dates of Examination of principal parts - Cylinders 18.1.21 Slides 24.1.21 Covers 18.1.21 Pistons 24.1.21 Rods 14.1.21 Connecting rods 4.2.21 Crank shaft 24.1.21 Thrust shaft 16.12.20 Tunnel shafts 10.9.20 3.12.20 Screw shaft 21.10.20 Propeller 21.10.20 Stern tube 20.10.20 Steam pipes tested Engine and boiler seatings Engines holding down bolts Completion of pumping arrangements Boilers fixed Engines tried under steam Main boiler safety valves adjusted Thickness of adjusting washers Material of Crank shaft Ing Steel Identification Mark on Do. 7286 Material of Thrust shaft Ing Steel Identification Mark on Do. 5485-N Material of Tunnel shafts Ing Steel Identification Marks on Do. 5485-N Material of Screw shafts Ing Steel Identification Marks on Do. 7286 Material of Steam Pipes Test pressure 540 lb per sq in 5/2/21

Is an installation fitted for burning oil fuel will be 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 Blair's Eng No 1945; Indt Rpt No 10910

General Remarks (State quality of workmanship, opinions as to class, &c. Evaporator cast iron shell and solid drawn copper coils tested to 50 lb & 400 lbs respectively & found good: Evap. marked No 164, 50 lb, 24/2/21. These engines and boilers have been built under special survey. The materials & workmanship are sound and good. The main boilers and oil fuel settling tanks were tested by hydraulic pressure to 360 lb & 15 lb per square inch, respectively and found good. The engines, boilers & fittings are to be forwarded to Bilbao where, it is stated, they will be fitted on board. In my opinion the vessel will be eligible to have the notations of L.M.C. (with a date) and "Fitted for oil fuel (with a date) F.P. above 150°F"; when the machinery has been satisfactorily fitted on board in accordance with the Rules and examined under steam.

MIDDLEBRO

Table with columns for fee type (Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses), amount (£), and dates (When applied for, When received).

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

Committee's Minute Assigned

