

REPORT ON MACHINERY.

No. 73140

Received at London Office

THU MAY 27 1920

Writing Report 25th May 1920 When handed in at Local Office 25th May 1920 Port of Newcastle on Tyne

Survey held at Jarrow & Horden Date, First Survey 14th May 1919 Last Survey 15th May 1920
Book. S.S. Erle (Number of Visits 59)

Builder Newcastle By whom built Northumberland S.B. Co. Ltd Tons { Gross 5650
Net 3550
When built 1920
Engines made at Jarrow on Tyne By whom made Palmer Shipbuilding & Iron Co. Ltd when made 1920
(Engine No 908)
Boilers made at do By whom made do when made 1920

Registered Horse Power _____ Owners Greutz Halmersens Rederi Port belonging to Christiania
Horse Power as per Section 28 517 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 3

No. of Cylinders 27 Length of Stroke 48" Revs. per minute 77 Dia. of Screw shaft 14 1/2" Material of screw shaft Steel
as per rule 14 1/2" as fitted 15 1/2" Material of 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 yes
Is 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 yes

When the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes If two yes
shafts are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 5 0/2"

Dia. of Tunnel shaft 13 3/4" as per rule 13 3/4" as fitted 13 3/4" Dia. of Crank shaft journals 14 1/2" as per rule 14 1/2" as fitted 14 1/2" Dia. of Crank pin 14 1/2" Size of Crank webs 25" x 9" Dia. of thrust shaft under 14 3/4"

Dia. of screw 17-9" Pitch of Screw 16-9" No. of Blades 4 State whether moveable no Total surface 93 ft
of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work yes

of Donkey Engines Three Sizes of Pumps 10 1/2" x 14" x 24" No. and size of Suctions connected to both Bilge and Donkey pumps one 9 1/2" x 7" x 15"

Engine Room Four 3 1/2" diameter In Holds, &c. Two 3 1/2" diameter in Nos. 1, 2
and 4 holds and one 2 1/2" in tunnel well.

of Bilge Injections 1 sizes 13" Connected to condenser, or to circulating pump no Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2"

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 no 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

Are all pipes carried through the bunkers bilge pipes before holds How are they protected Hood boxing

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 Engine room top plate

Boilers, &c.—(Letter for record S) Manufacturers of Steel Spencer & Sons Ltd 3 S.B.

Total Heating Surface of Boilers 7668 ft Is Forced Draft fitted yes No. and Description of Boilers 3 Single Ended

Working Pressure 180 lb per sq in Tested by hydraulic pressure to 360 lb per sq in Date of test 31/10/19 No. of Certificate 9315

Can each boiler be worked separately yes Area of fire grate in each boiler 63.3 ft No. and Description of Safety Valves to one direct spring

Area of each valve 9.62 ft Pressure to which they are adjusted 185 lb per sq in Are they fitted with easing gear yes

Least distance between boilers or uptakes and bunkers or woodwork 30" Mean dia. of boilers 15-6" Length 11-6" Material of shell plates Steel

Thickness 1/4" Range of tensile strength 28/32 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R Lap

seams Double straps Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9/8" Lap of plates or width of butt straps 19 1/2"

Percentages of strength of longitudinal joint rivets 88.3 Working pressure of shell by rules 152 lb Size of manhole in shell 16" x 12"

of compensating ring flanged spigot No. and Description of Furnaces in each boiler 3 Dighton Material Steel Outside diameter 50 3/8"

Thickness of plain part 1 1/2" Thickness of plates 1 1/2" Description of longitudinal joint Welded No. of strengthening rings yes

Working pressure of furnace by the rules 155 Combustion chamber plates: Material Steel Thickness: Sides 2 3/32" Back 1/16" Top 2 3/32" Bottom 2 3/32"

Thickness of stays to ditto: Sides 1 1/32" x 8 1/8" Back 1 1/32" x 8 3/8" Top 1 1/32" x 9 1/4" If stays are fitted with nuts or riveted heads nuts inside Working pressure by rules 180

Material of stays Steel Area at smallest part 2.75 ft Area supported by each stay 1.04 ft Working pressure by rules 219 End plates in steam space: Steel Thickness 1 1/32" Pitch of stays 20 1/2" x 21 1/2" How are stays secured Double nuts Working pressure by rules 192 Material of stays Steel

Area at smallest part 8.45 ft Area supported by each stay 4.46 ft Working pressure by rules 199 Material of Front plates at bottom Steel Thickness 3/32" Material of Lower back plate Steel Thickness 2 7/32" Greatest pitch of stays 3 5/8" x 8 3/4" Working pressure of plate by rules 187

Diameter of tubes 2 3/4" Pitch of tubes 4" x 3 7/8" Material of tube plates Steel Thickness: Front 3 1/32" Back 3/4" Mean pitch of stays 9 7/8"

Thickness across wide water spaces 13 5/8" Working pressures by rules 194 lb Girders to Chamber tops: Material Steel Depth and 10" x 1 3/4" Length as per rule 35 9/16" Distance apart 10 5/8" Number and pitch of stays in each Three, 9 1/4"

Working pressure by rules 157 lb Steam dome: description of joint to shell None % of strength of joint yes

Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet holes yes

Working pressure of shell by rules yes Crown plates yes Thickness yes How stayed yes

Superheater. Type None Date of Approval of Plan yes Tested by Hydraulic Pressure to yes

Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler 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: - 2 top and 2 bottom end bolts and nuts, bearing bolts and nuts, one set of coupling bolts and nuts, one for and one ridge pump suction and discharge valves, 3 main and 3 check valves, a quantity of assorted bolts and nuts, a few of iron, one propeller boss and six blades etc.

The foregoing is a correct description,

For *Palmer Shipbuilders & Iron Co., Ltd.*

Manufacturer.

General Manager, Engine Works. Dates of Survey while building: During progress of work in shops - May 14, June 18, July 10, 25, Aug 6, 11, 15, 18, 29, Sept 1, 5, 12, 17, 19, 26, 29, 30, Oct 6, 7, 8, 15, 16, 20, 31, Nov 6, 7, 14, 26, Dec 1, 11, 19, 1920, Jan 9, 15, 22, 23, 26, 29, 30, Feb 2, 5, 6, 9, 12, 13, 14, Mar 11, 12, 20, 29, Apr 4, 15, 19, 22, 27, May 7, 11, 13. Total No. of visits: 59

Is the approved plan of main boiler forwarded herewith?

Dates of Examination of principal parts: Cylinders 18/6, 6/5, 5/19, Slides 6/11, 17/11/19, Covers 6/11, 17/11/19, Pistons 6/11, 17/11/19, Rods 17/11/19, Connecting rods 7/19, 4/11/19, Crank shaft 6/11, 23/1/20, Thrust shaft 23/1/20, Tunnel shafts 23/1/20, Screw shaft 23/1/20, Propeller 23/1/20, Stern tube 23/1/20, Steam pipes tested 6/2, 14/2, 23/2, Engine and boiler seatings 22/1, 20/2, 20, Engines holding down bolts 5/2, Completion of pumping arrangements 22/4/20, Boilers fixed 5/2, 11/2/20, Engines tried under steam 22/4/20, Completion of fitting sea connections 23/1, 11/5/20, Stern tube 23/1, 11/5/20, Screw shaft and propeller 23/1, 11/5/20, Main boiler safety valves adjusted 22/4/20, Thickness of adjusting washers PB 1 1/2" C.B. 7/16" 15/32" SB 17/32"

Material of Crank shaft: *Steel* Identification Mark on Do. 1/4/20 6M Material of Thrust shaft: *Steel* Identification Mark on Do. 1/4/20 6M Material of Tunnel shafts: *Steel* Identification Marks on Do. 1/4/20 6M Material of Screw shafts: *Steel* Identification Marks on Do. 1/4/20 6M Material of Steam Pipes: *Steel & Copper* Test pressure 540 + 360 lbs per sq in

Is an installation fitted for burning oil fuel? *Yes* Is the flash point of the oil to be used over 150°F? *Yes* Have the requirements of Section 49 of the Rules been complied with? *Yes*

Is this machinery duplicate of a previous case? *Yes* If so, state name of vessel: *"Comille Gilbert" No. 72 Standard Class B.*

General Remarks (State quality of workmanship, opinions as to class, &c): *The machinery of this vessel has been constructed under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tried under full steam. The boilers are now fitted for burning oil fuel.*

The machinery of this vessel is now, in my opinion eligible for record: L.M.C. 5.20 (in red) in the register book.

Dime castings & forging reports, and minies for furnaces and steel plates & bars now forwarded.

It is submitted that this vessel is eligible for THE RECORD - L.M.C. 5.20 F.D. FITTED FOR OIL FUEL 5.20 F.P. ABOVE 150°F

WJH *WJE 28/3/20* *GRJ*

The amount of Entry Fee ... £ 3 : : When applied for, 2.6 MAY 1920 Special ... £ 45 : 17 : Donkey Boiler Fee ... £ : : When received, 6/6 29 Travelling Expenses (if any) £ : : 28.6.20

Committee's Minute FRI JUN 4 1920 Assigned *L.M.C. 5.20 F.D. Fitted for Oil Fuel 5.20 F.P. above 150°F*

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

