

# REPORT ON MACHINERY.

Received at London Office

1919

Date of writing Report 10 When handed in at Local Office *Adley* 19 Port of *THURSDAY*

No. in Survey held at *Jarrow & Hebburn* Date, First Survey *10<sup>th</sup> May 1918* Last Survey *31<sup>st</sup> July 1919*  
 Reg. Book. *211* on the *S.S. Naar Begum* (Number of Visits *7*) Gross *5578* Tons  
 Master *By whom built* *Palmer's Co. Ltd* No. *890* Net *3428* Tons  
 Built at *Hebburn* By whom built *Palmer's Co. Ltd* No. *893* when made *1919*  
 Engines made at *Jarrow* By whom made *Palmer's Co. Ltd* when made *1919*  
 Boilers made at *Jarrow* By whom made *Palmer's Co. Ltd* when made *1919*  
 Registered Horse Power *517* Owners *The Shipping Controller* Port belonging to *British*  
 Nom. 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 *3* No. of Cranks *3*  
 Dia. of Cylinders *27.44" x 73"* Length of Stroke *48* Revs. per minute *77* Dia. of Screw shaft *as per rule 14.66* Material of *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 *5-0 1/2"*  
 Dia. of Tunnel shaft *as per rule 13.33* Dia. of Crank shaft journals *as per rule 14* Dia. of Crank pin *14 1/2* Size of Crank web *22 1/2 x 9* Dia. of thrust shaft under  
 collars *14 3/4* Dia. of screw *17-6* Pitch of Screw *16.6* No. of Blades *4* State whether moceable *No* Total surface *98.20"*  
 No. of Feed pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*  
 No. of Bilge pumps *2* Diameter of ditto *4"* Stroke *24"* Can one be overhauled while the other is at work *Yes*  
 No. of Donkey Engines *3* Sizes of Pumps *10 1/2, 14, 24, 9 1/2, 7, 18* No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room *Four, 3 1/2" diameter* In Holds, &c. *Two 3 1/2" in fore hold, Two 2 1/2"*  
*in pump room, Two 2 1/2" to after flat and one 2 1/2" in tunnel well.*  
 No. of Bilge Injections *1* sizes *8"* Connected to condenser, or to circulating pump *Yes* 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 *✓*  
 Are all connections with the sea direct on the skin of the ship *Yes and on copper* 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 *main discharge*  
 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*  
 Dates of examination of completion of fitting of Sea Connections *2/6, 3/6, 4/6/19* of Stern Tube *3/6, 4/6/19* Screw shaft and Propeller *3/6, 3/6, 4/6/19*  
 Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *No* *Entered from deck*

BOILERS, &c. — (Letter for record *5*) Manufacturers of Steel *J. Spencer & Sons Ltd*  
 Total Heating Surface of Boilers *7668 sq 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* Date of test *17/3/19, 10/4/19, 16/4/19* No. of Certificate *9208, 9215, 9219*  
 Can each boiler be worked separately *Yes* Area of fire grate in each boiler *63.3 sq ft* No. and Description of Safety Valves to  
 each boiler *Two direct spring* Area of each valve *9.62 sq in* Pressure to which they are adjusted *185 lb* Are they fitted with easing gear *Yes*  
 Smallest distance between boilers or uptakes and bunkers or woodwork *30" inside* dia. of boilers *15.6"* Length *11.6"* Material of shell plates *Steel*  
 Thickness *1 1/4"* Range of tensile strength *28/32 ton* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *2 R Lap*  
 long. seams *5 rivets* Diameter of rivet holes in long. seams *1 1/16"* Pitch of rivets *9/8"* Lap of plates on width of butt straps *19 1/2"*  
 Per centages of strength of longitudinal joint *88.3* Working pressure of shell by rules *182 lb* Size of manhole in *end 16" x 12"*  
 Size of compensating ring *Flange* No. and Description of Furnaces in each boiler *3 Brighton* Material *Steel* Outside diameter *50 3/16"*  
 Length of plain part *top 19 1/32"* Thickness of plates *bottom 19 1/32"* Description of longitudinal joint *Welded* No. of strengthening rings *✓*  
 Working pressure of furnace by the rules *188* Combustion chamber plates: Material *Steel* Thickness: Sides *23/32"* Back *1 1/16"* Top *23/32"* Bottom *23/32"*  
 Pitch of stays to ditto: Sides *1 1/32" x 8/8"* Back *10/16" x 8 1/2"* Top *10/16" x 9 1/2"* stays are fitted with nuts or riveted heads *Nuts inside* Working pressure by rules *180*  
 Material of stays *Steel* Diameter at smallest part *2.75"* Area supported by each stay *104 sq in* Working pressure by rules *219* End plates in steam space:  
 Material *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*  
 Diameter at smallest part *8-180* Area supported by each stay *446 sq in* Working pressure by rules *199* Material of Front plates at bottom *Steel*  
 Thickness *3 1/32"* Material of Lower back plate *Steel* Thickness *27/32"* Greatest pitch of stays *13 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"*  
 Pitch across wide water spaces *13 7/8"* Working pressures by rules *181 lb* Girders to Chamber tops: Material *Steel* Depth and  
 thickness of girder at centre *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 *187 lb* 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? No If so, is a report now forwarded?

SPARE GEAR. State the articles supplied: - 2 top and 2 bottom connecting rod bolts & nuts, 2 main bearing bolts and nuts, 6 coupling bolts and nuts, one feed pump suction and one discharge valve, one bilge pump suction and one discharge valve, 3 main and 3 donkey feed check valves, 24 assorted bolts & nuts, 6 cylinder covers and 6 steam chest cover studs and nuts, 5 bars round iron 3/8", 1/2", 5/8", 3/4" and 1" one propeller shaft & one propeller.

The foregoing is a correct description,  
*Palmers Shipbuilding & Iron Co. Ltd.*

*J. Kemp*  
 Manager, Engine Dept. Manufacturer.

Dates of Survey while building: During progress of work in shops - *May 10 to 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31*  
 During erection on board vessel - *Apr 16, 23, 30, May 7, 14, 21, 28, Jun 4, 11, 18, 25, Jul 2, 9, 16, 23, 30, Aug 6, 13, 20, 27, Sep 3, 10, 17, 24, Oct 1, 8, 15, 22, 29, Nov 5, 12, 19, 26, Dec 3, 10, 17, 24, 31*  
 Total No. of visits: *108*

Is the approved plan of main boiler forwarded herewith?  *Standard B*  
 " " " donkey " " " *None*

Dates of Examination of principal parts - Cylinders *17/9, 26/9, 10/10*  
 Connecting rods *17/9, 26/9* Crank shaft *26/5, 16/10* Thrust shaft *22/10, 29/10* Tunnel shafts *30/10, 19/11* Pistons *17/9, 26/9* Rods *26/9, 16/10*  
 Stern tube *26/5, 22/10* Steam pipes tested *30/4/19* Engine and boiler settings *4/6/19* Engines holding down bolts *3/7/19*  
 Completion of pumping arrangements *17/7/19* Boilers fixed *3/7/19* Engines tried under steam *17/7/19*  
 Main boiler safety valves adjusted *17/7/19* Thickness of adjusting washers *PV 3/8", SV 7/16", PV 7/16", SV 3/8", PV 3/8", SV 7/16"*  
 Material of Crank shaft *Stul* Identification Mark on Do. *12/3/19 G.M.* Material of Thrust shaft *Stul* Identification Mark on Do. *12/3/19 G.M.*  
 Material of Tunnel shafts *do* Identification Marks on Do. *do* Material of Screw shafts *do* Identification Marks on Do. *do*  
 Material of Steam Pipes *Stul* Test pressure *540 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 *Har Mizany No 71416*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under steam. In our opinion the machinery of this vessel is now eligible for record: LMC 7.19 (oil fuel) in register book.*

*Iron forging, casting & pipe reports & invoices of steel now forwarded.*

It is submitted that this vessel is eligible for THE RECORD + LMC 7.19. F.D.

Fitted for oil fuel 7.19 F.P. above 150°F. *JWD 22/6/19*

The amount of Entry Fee ... £ : :  
 Special ... £ 146 : 11 :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, *20 AUG 1919*  
 When received, *30/9/19*

*George Murdoch & Co. Ltd.*  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *TUE AUG 26 1919*  
 Assigned *Home 7.19*

*Fitted for oil fuel 7.19 F.P. above 150°F.*



Certificates (if registered) to be sent to Newcastle-on-Tyne

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