

## REPORT ON MACHINERY.

No. 15685

Date of writing Report 11<sup>th</sup> Oct 1919 when handed in at Local Office 14/10/19 Port of WEST HARTLEPOOL  
 No. in Survey held at West Hartlepool Date, First Survey 10<sup>th</sup> Feb 1919 Last Survey 8<sup>th</sup> Oct 1919  
 Reg. Book. 32546 on the S.S. "Kara" (W Gray & Co Ltd No 926) (Number of Visits 102)  
 Master E. G. Badcock Built at West Hartlepool By whom built Wm Gray & Co Ltd Gross 2478.75  
 Engines made at West Hartlepool By whom made Central Marine Engine Works Net 1472.93  
 Boilers made at ditto By whom made ditto When built 1919  
 Registered Horse Power 266 Owners F. E. Strick & Co when made 1919  
 Nom. Horse Power as per Section 28 266 Is Refrigerating Machinery fitted for cargo purposes no Port belonging to Swansea  
 Is Electric Light fitted yes

## ENGINES, &amp;c.—Description of Engines Triple expansion

No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 22"-36"-59" Length of Stroke 39" Revs. per minute 68

Dia. of Screw shaft as per rule 12.5" Material of forged steel  
as fitted 13" 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

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 yes

If two

liners are fitted, is the shaft lapped or protected between the liners ✓

Length of stern bush 4'-10"

Dia. of Tunnel shaft as per rule 10.86" as fitted 11" Dia. of Crank shaft journals as per rule 11.4" as fitted 11.4"

collars 12" Dia. of screw 15-9" Pitch of Screw 15-3" No. of Blades 11 State whether moveable no Total surface 77 ft<sup>2</sup>

No. of Feed pumps 2 Diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3½" Stroke 24" Can one be overhauled while the other is at work yes

No. of Donkey Engines 3 Sizes of Pumps Feed 10½" x 12½" x 18" single Ballast 8" x 6" x 15" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 of 3" x two of 3½" General Service 8" x 6" x 15" In Holds, &amp;c. Two of 3" in each hold.

One of 3" in tunnel.

No. of Bilge Injections 1 sizes 8" Connected to condenser, or to circulating pump C.P. or a separate Donkey Suction fitted in Engine room &amp; size 3½"

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 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 both

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 30-7-19 of Stern Tube 20-8-19 Screw shaft and Propeller 20-8-19

Is the Screw Shaft Tunnel watertight see ship reports it fitted with a watertight door yes worked from upper grating

BOILERS, &amp;c.—(Letter for record S) Manufacturers of Steel J. Spencer &amp; Son Ltd

Total Heating Surface of Boilers 4500 ft<sup>2</sup> Is Forced Draft fitted no No. and Description of Boilers Two single ended

Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 30.5.19 No. of Certificate 3532

Can each boiler be worked separately yes Area of fire grate in each boiler 62 ft<sup>2</sup> No. and Description of Safety Valves toeach boiler Two, direct spring Area of each valve 8.29 in<sup>2</sup> 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 3'-4" Inside Mean dia. of boilers 15'-6" Length 10'-6" Material of shell plates Steel

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

long. seams J.R. &amp; B. Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9" Lap of plates or width of butt straps 19 1/2"

Per centages of strength of longitudinal joint rivets 88.5 Working pressure of shell by rules 184 lbs Size of manhole in shell end 12" x 16"

Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Deightons Material Steel Outside diameter 49 3/16"

Length of plain part top 37" Thickness of plates crown 37" Description of longitudinal joint welded No. of strengthening rings

bottom 64 Working pressure of furnace by the rules 185 Combustion chamber plates: Material Steel Thickness: Sides 11" Centre 4" Back 23/32" Wings 11" Bottom 11"

Pitch of stays to ditto: Sides 9" x 9 3/4" Back 10 1/8" x 9 3/4" Top 9" x 9 3/4" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 183

Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 10 1/8" x 9 5/8" Working pressure by rules 190 lbs End plates in steam space

Material Steel Thickness 1 3/8" Pitch of stays 21" x 22" How are stays secured 2 nuts Working pressure by rules 194 lbs Material of stays Steel

Diameter at smallest part 8.48" Area supported by each stay 21" x 22" Working pressure by rules 190 lbs Material of Front plates at bottom Steel

Thickness 1 3/16" Material of Lower back plate Steel Thickness 1 5/16" Greatest pitch of stays 15 1/4" x 10 5/8" Working pressure of plate by rules 181

Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates Steel Thickness: Front 13 double 13 Centre 13 Back 13/16" Wings 13/16" Mean pitch of stays 8 3/4" x 11 1/4"

Pitch across wide water spaces 11 1/4" Working pressures by rules 262 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 7 1/2" x 1 1/4" Length as per rule 32" Distance apart 9" Number and pitch of stays in each Two 9 3/4"

Working pressure by rules 180 lbs 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

Pitch of rivets Working pressure by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules Flue 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? *Yes*

If so, is a report now forwarded? *Yes*

SPARE GEAR. State the articles supplied:— *2 Bolts & nuts for connecting rods, piston rods & main bearings. 6 Coupling bolts & nuts. 1 set feed & bilge & air pump valves. 4 feed check valves. Screw shaft, propeller. 2 safety valve springs. 1 escape valve spring 50 Condenser ferrules. Assorted bolts, studs & nuts. Various spare parts for circulating and donkey pumps and winches.*

The foregoing is a correct description,

(M. Gray & Co. (1918) Ltd.)

*M. Gray*

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1919. Feb 10, 12, 14, 17, 18, 19, 20, 21, 25, 26, 28. March 3, 7, 17, 18, 19, 20, 21, 27, 28. April 3, 23, 25, 28, 29. May 1, 8, 9, 12, 13, 14, 15, 20, 22, 23, 27, 28, 29, 30. June 2, 3, 4, 5, 6, 7, 11, 12, 13, 16, 18, 20, 24, 25, 26, 27, 30. July 2, 3, 4, 7, 9, 10, 11, 14, 15, 16, 17, 18, 22, 23, 24, 25, 28, 29, 30. Aug 1, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 27, 28. Sep 2, 3, 10, 15, 19, 22, 23, 26. Oct 2, 6, 8. Total No. of visits *102*

Is the approved plan of main boiler forwarded herewith *Previously sent with duplicate*

" " " donkey " " *Yes*

Dates of Examination of principal parts—Cylinders *11.8.19* Slides *2.7.19* Covers *25.2.19* Pistons *28.7.19* Rods *8.5.19*

Connecting rods *12.8.19* Crank shaft *15.7.19* Thrust shaft *15.7.19* Tunnel shafts *10.7.19* Screw shaft *14.7.19* Propeller *14.7.19*

Stern tube *14.8.19* Steam pipes tested *22.9.19* Engine and boiler seatings *20.8.19* Engines holding down bolts *15.9.19*

Completion of pumping arrangements *26.9.19* Boilers fixed *15.9.19* Engines tried under steam *2.10.19*

Main boiler safety valves adjusted *26.9.19* Thickness of adjusting washers *St. S.  $\frac{17}{32}$  P  $\frac{1}{2}$  full Pt S  $\frac{15}{32}$  P  $\frac{1}{2}$*

Material of Crank shaft *Ing. Stl* Identification Mark on Do. *6076* Material of Thrust shaft *Ing. Stl* Identification Mark on Do. *6076*

Material of Tunnel shafts *Ing. Stl* Identification Marks on Do. *6076* Material of Screw shafts *Ing. Stl* Identification Marks on Do. *6076*

Material of Steam Pipes *Lap welded steel* Test pressure *600 lbs*

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 *S.S. "Grodno"*

General Remarks (State quality of workmanship, opinions as to class, &c. *An evaporator has been fitted the shell of which was tested to 50 lbs and the coils to 400 lb hydraulic pressure.*

This vessel's machinery has been built and installed under Special Survey and is in accordance with the provisions of the Rules. The materials and workmanship are good.

On completion the engines, boilers and auxiliaries were examined under full steam while working at mooring and all found satisfactory, and in my opinion the vessel is eligible to have the record of

**LMC 10.19**

It is submitted that this vessel is eligible for

THE RECORD. + L.M.C. 10-19.

The amount of Entry Fee ... £ 2 + - When applied for, Special ... £ 9 19 6 When received, Donkey Boiler Fee ... £ 11 - - - - - 28/10/19 1919

Committee's Minute

Assigned

+ LMC 10 19

*R.D. Shilston*

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



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