

REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office
Sunderland.

Date of writing Report 19 *1943* When handed in at Local Office *13 Mch 1943* Port of *Sunderland.*

No. in Survey held at *Sunderland* Date, First Survey *Nov. 17* Last Survey *Mch 11 1943*
Reg. Book *"EMPIRE BARDOLPH"* (Number of Visits *22*)

on the *"EMPIRE BARDOLPH"* Tons { Gross *7017*
Net *4758*

Built at *Sunderland* By whom built *Short Bros. Ld.* Yard No. *444.* When built *1943.*

Engines made at *Wallsend* By whom made *H.S. Massey Eng. Co.* Engine No. *3031* When made *1943.*

Boilers made at *Wallsend* By whom made *H.S. Massey Eng. Co.* Boiler No. *3031* When made *1943.*

Registered Horse Power *534.* Owners *Ministry of War Transport.* Port belonging to *Sunderland*

Nom. Horse Power as per Rule *534.* Is Refrigerating Machinery fitted for cargo purposes *Yes.* Is Electric Light fitted *Yes.*

Trade for which vessel is intended *See Newcastle Report No 100846.*

ENGINES, &c.—Description of Engines

Dia. of Cylinders *24"* Length of Stroke *24"* No. of Cylinders *2* No. of Cranks *2* Revs. per minute *100846*

Crank shaft, dia. of journals *as per Rule* Crank pin dia. *as per Rule* Crank webs *as per Rule* Mid. length breadth *as per Rule* Thickness parallel to axis *as per Rule*

Intermediate Shafts, diameter *as per Rule* Thrust shaft, diameter at collars *as per Rule* Mid. length thickness *as per Rule* Thickness around eye-hole *as per Rule*

Tube Shafts, diameter *as per Rule* Screw Shaft, diameter *as per Rule* Is the tube shaft fitted with a continuous liner *Yes.*

Bronze Liners, thickness in way of bushes *as per Rule* Thickness between bushes *as per Rule* Is the after end of the liner made watertight in the propeller boss *Yes.*

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *Yes.*

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 *Yes.* Is an approved Oil Gland or other appliance fitted at the after end of the tube at *Yes.*

Propeller, dia. *36"* Pitch *24"* No. of Blades *3* Material *Cast Iron* whether Moveable *Yes.* Total Developed Surface *1000* sq. feet

Feed Pumps worked from the Main Engines, No. *2* Diameter *3"* Stroke *4"* Can one be overhauled while the other is at work *Yes.*

Bilge Pumps worked from the Main Engines, No. *2* Diameter *3"* Stroke *4"* Can one be overhauled while the other is at work *Yes.*

Feed Pumps { No. and size *2 @ 3" W.E.R.* Pumps connected to the Main Bilge Line { No. and size *2 @ 3" W.E.R.*
How driven *Hand* How driven *Hand*

Ballast Pumps, No. and size *2 @ 3" W.E.R.* Lubricating Oil Pumps, including Spare Pump, No. and size *2 @ 3" W.E.R.*

Are two independent means arranged for circulating water through the Oil Cooler *Yes.* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps:—In Engine and Boiler Room *2 @ 3" W.E.R.* In Pump Room *2 @ 3" W.E.R.* In Holds, &c. *N°1. 3" φrs. N°2. 3" φrs. N°3. 3" φrs.*

Main Water Circulating Pump Direct Bilge Suctions, No. and size *1 @ 8"* Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size *1 @ 8"* Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes *Yes.*

Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges *Yes.*

Are all Sea Connections fitted direct on the skin of the ship *Yes.* Are they fitted with Valves or Cocks *Both.*

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plate *Yes.* Are the Overboard Discharges above or below the deep water line *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 pass through the bunkers *In hold bilge Suctions* How are they protected *Wood Cappings.*

What pipes pass through the deep tanks *none* Have they been tested as per Rule *Yes.*

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times *Yes.*

Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another *Yes.* Is the Shaft Tunnel watertight *Yes.* Is it fitted with a watertight door *(Blkhd.)*

MAIN BOILERS, &c.—(Letter for record *S.*) Total Heating Surface of Boilers *4868 sq. ft.*

Which Boilers are fitted with Forced Draft *All.* Which Boilers are fitted with Superheaters *Main.*

No. and Description of Boilers *(See Nwe Rpt 100846)* Working Pressure *220 lb.*

IS A REPORT ON MAIN BOILERS NOW FORWARDED? *Yes (Nwe Rpt. 100846)*

IS A DONKEY BOILER FITTED? *Yes.* If so, is a report now forwarded? *Yes (Nwe Rpt 100846)*

Can the donkey boiler be used for domestic purposes only *Yes.*

PLANS. Are approved plans forwarded herewith for Shafting *Yes.* Main Boilers *Yes.* Auxiliary Boilers *Yes.* Donkey Boilers *Yes.*

(If not state date of approval)

Superheaters *Yes.* General Pumping Arrangements *Yes.* Oil fuel Burning Piping Arrangements *Yes.*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes.*

State the principal additional spare gear supplied *none*

The foregoing is a correct description.

W. J. Barry Manufacturer.

Director & General Manager



1942. Nov. 17, 24. Dec. 17, 22, 23, 29. 1943. Jan. 6, 8, 11, 22, 28. Feb. 2, 3, 5, 8, 12, 15, 18, 20. Mar. 11.

During progress of work in shops -

Dates of Survey while building

During erection on board vessel - - -

Total No. of visits - 20

EMPIRE BARDOLPH

Dates of Examination of principal parts - Cylinders - Slides - Covers -

Pistons - Piston Rods - Connecting rods -

Crank shaft - Thrust shaft - Intermediate shafts -

Tube shaft - Screw shaft - Propeller -

Stern tube - Fitted 24/11/42 Engine and boiler seatings - 28/12/42. Engines holding down bolts - 11/1/43.

Completion of fitting sea connections - 24/11/42

Completion of pumping arrangements - 20/2/43 Boilers fixed - 23/12/42 Engines tried under steam - 18/2/43.

Main boiler safety valves adjusted - 18/2/43. Thickness of adjusting washers - P. Bl. P 3/8 S. 7/16 S. 7/16 Aug. P 7/16 S. 7/16 S. 7/16 S. 7/16 S. 7/16 S. 7/16

Crank shaft material - Identification Mark - Thrust shaft material - Identification Mark -

Intermediate shafts, material - Identification Marks - Tube shaft, material - Identification Mark -

Screw shaft, material - Identification Mark - Steam Pipes, material - S.D. Steel Test pressure - 660 lbs/sq. Date of Test - 22/1/43, 28/1/43, 2/2/43, 3/2/43

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 the Rules for the use of oil as fuel been complied with -

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo - no. If so, have the requirements of the Rules been complied with -

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with - not desired.

Is this machinery duplicate of a previous case (See N.W.C. Rpt.) If so, state name of vessel -

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery has been Securely fitted on board the vessel & tried under working conditions alongside quay with satisfactory results. Safety valves of boilers & superheaters adjusted under steam as above. The machinery is now eligible in my opinion to have notation $\frac{1}{2}$ L.M.C. 3.43, T.S. (CL) 2 SB (Spc.) 1 Aug. (FD) 220.

The amount of Entry Fee ... £ : : When applied for, 13 MAR 1943

$\frac{1}{5}$ Special ... £ 20 : 4 : When received,

$\frac{1}{5}$ Specification ... £ 5 : - : Travelling Expenses (if any) £ : : 19.

W. H. Haser
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute - 7 Lines 3.43

Assigned - J.S.B. (Spc.) 22, Cl. (Aug 5/16)



Certificate to be sent to SUNDERLAND