

## REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office DEC 16 1897

Date of writing Report 19 When handed in at Local Office 14/12 19 27 Port of *Edinburgh*

No. in Survey held at *South Bank* Date, First Survey *2 Nov* Last Survey *7 Dec* 19 37

Reg. Book. *21213* on the *SS 'BENALDER'* (Number of Visits *5161*)

Built at *W. Hartlepool* By whom built *J. & D. D. Co. Ltd* Yard No. *3149*

Engines made at *By whom made* *Richardson & Westgarth* Engine No. *when made* *1919*

Boilers made at *By whom made* *Boiler No.* *when made* *1919*

Registered Horse Power *517* Owners *Ben Line Steamers Ltd.* Port belonging to *Leith*

Nom. Horse Power as per Rule *517* Is Refrigerating Machinery fitted for cargo purposes *no* Is Electric Light fitted *yes*

Trade for which Vessel is intended

ENGINES, &c.—Description of Engines *Triple Expansion* Revs. per minute

Dia. of Cylinders *27-44-73* Length of Stroke *48* No. of Cylinders *3* No. of Cranks *3*

Crank shaft, dia. of journals *as per Rule* *14 1/2* Crank pin dia. *14 7/16* Crank webs *as per Rule* *9* Thickness parallel to axis *2 1/2*

Intermediate Shafts, diameter *as per Rule* *13 1/2* Thrust shaft, diameter at collars *as per Rule* *14 3/4* Thickness around eye-hole *2 1/2*

Tube Shafts, diameter *as per Rule* *13 1/2* Screw Shaft, diameter *as per Rule* *14 7/8* Is the screw shaft fitted with a continuous liner *yes*

Bronze Liners, thickness in way of bushes *as per Rule* *1/2* Thickness between bushes *as per Rule* *1/2* 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 *yes*

shaft *no* If so, state type *yes* Length of Bearing in Stern Bush next to and supporting propeller *5'-0 1/2"*

Propeller, dia. *18-0* Pitch *18'-6"* No. of Blades *4* Material *Brass* whether Moveable *no* Total Developed Surface *105* sq. feet

Feed Pumps worked from the Main Engines, No. *2* Diameter *4"* Stroke *24* Can one be overhauled while the other is at work *yes*

Bilge Pumps worked from the Main Engines, No. *2* Diameter *4"* Stroke *24* Can one be overhauled while the other is at work *yes*

Feed Pumps { No. and size *2. 9 1/2" x 7" x 18"* Pumps connected to the { No. and size *1 & 2. 9 1/2" x 7" x 18"* Main Bilge Line { How driven *Steam*

Ballast Pumps, No. and size *1. 10 1/2" x 14" x 24"* Lubricating Oil Pumps, including Spare Pump, No. and size *1. 10 1/2" x 14" x 24"*

Are two independent means arranged for circulating water through the Oil Cooler *yes* Suctions connected to both Main Bilge Pumps and Auxiliary *yes*

Bilge Pumps;—In Engine and Boiler Room *4 @ 3 1/2"* *(2 @ 3 1/2" in each hold & cross bunker)*

In Holds, &c. *1 @ 3 1/2" after well*

Main Water Circulating Pump Direct Bilge Suctions, No. and size *1 @ 13"* Independent Power Pump Direct Suctions to the Engine Room Bilges, *yes*

No. and size *1 @ 3 1/2"* 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 plates *yes* Are the Overboard Discharges 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 pass through the bunkers *none* How are they protected *yes*

What pipes pass through the deep tanks *yes* 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 *yes* worked from *yes*

MAIN BOILERS, &c.—(Letter for record *3*) Total Heating Surface of Boilers *7668 sq. ft.*

Is Forced Draft fitted *yes* No. and Description of Boilers *3 SB.* Working Pressure *180*

IS A REPORT ON MAIN BOILERS NOW FORWARDED? *yes*

IS A DONKEY BOILER FITTED? *no*

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

PLANS. Are approved plans forwarded herewith for Shafting *no* Main Boilers *yes* Auxiliary Boilers *yes* Donkey Boilers *yes*

Superheaters *yes* General Pumping Arrangements *yes* Oil fuel Burning Piping Arrangements *yes*

SPARE GEAR. State the articles supplied:—

*two top end, two bottom end & two main bearing bolts & nuts*

*1 set of coupling bolts & nuts* *1 set of junk ring studs & nuts*

*a number of holding down bolts & nuts for main engines & thrust*

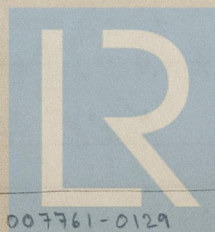
*one set of feed & bilge pump valves* *a quantity of bolts, nuts*

*& iron of various sizes*

*1 Propeller.*

The foregoing is a correct description,

Manufacturer.



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007754-007761-0129



During progress of work in shops - - -  
 Dates of Survey while building  
 During erection on board vessel - - -  
 Total No. of visits

1937 Nov. 2 4-8-9 11. 25. 26. 29 Dec 2-3 7  
 11

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 Engine and boiler seatings Engines holding down bolts  
 Completion of fitting sea connections  
 Completion of pumping arrangements Boilers fixed Engines tried under steam  
 Main boiler safety valves adjusted Thickness of adjusting washers  
 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 Test pressure Date of Test  
 Is an installation fitted for burning oil fuel 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 If so, have the requirements of the Rules been complied with  
 Is this machinery duplicate of a previous case If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery & boilers of this vessel were not built under Special Survey. [with the approved plan]  
 The scrutings of machinery & the pumping arrangement are in accordance.  
 The working parts have been opened up & examined & found or placed in good condition as stated in Report 9 forwarded herewith & the machinery is eligible in my opinion to have the Record LMC 12.37  
 & notations NHP. 517. 38 B.F.D. HS 7668. 45. 190. Electric Light  
 WP 180 lbs. 9cf.

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

The amount of Entry Fee ... £ 6 : 0 : 0  
 Special ... £ 14 : 0 : 0  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 15.12.1927  
 When received, 12/1 1938  
 gmr 13/1

Committee's Minute

Assigned

FRI 7 JAN 1938

See Probk 7 E. Rpt 16178

Reilly  
 Engineer Surveyor to Lloyd's Register of Shipping.



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