

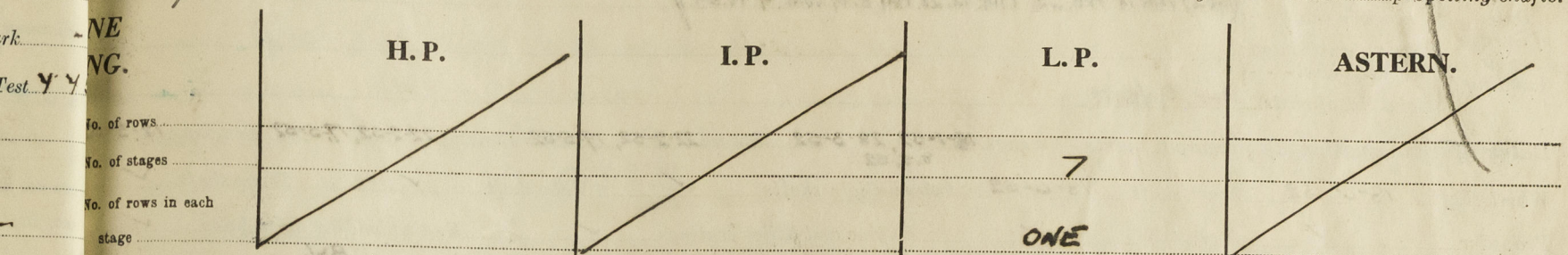
# Report on Steam Turbine Machinery.

No. 100005

Received at London Office  
 Survey held at Walter-on-Tyre Date First Survey 18-1-52 Last Survey 24-6-1952  
 (Number of Visits 9)  
 on the BAUER-WACH 190  
 By whom built Central Marine Engine Works Yard No. 1254 When built 1952  
 made at Walter-on-Tyre By whom made Central Marine Engine Works Engine No. 1254 When made 1952  
 made at Walter-on-Tyre By whom made Sam Hunt & Wigham Richardson Boiler No. 190 When made 1952  
 Horse Power at Full Power 918 Owners — Port belonging to —  
 Horse Power as per Rule 153 Is Refrigerating Machinery fitted for cargo purposes — Is Electric Light fitted —  
 for which Vessel is intended —

## TURBINE ENGINES, &c.—Description of Engines BAUER-WACH I.P. TURBINE WITH D.R. GEARING & HYD. COUPLING

Ahead ONE Direct coupled, single reduction geared to ONE propelling shafts. No. of primary pinions to each set of reduction gearing ONE  
 Astern — double reduction geared  
 Alternating Current Generator — phase — periods per second — rated — Kilowatts — Volts at — revolutions per minute;  
 Direct Current Generator —  
 Propelling Motors, Type —  
 Kilowatts — Volts at — revolutions per minute. Direct coupled, single or double reduction geared to — propelling shafts.



Horse Power at each turbine  
 H.P. — I.P. — L.P. 918  
 Revolutions per minute, at full power, of each Turbine Shaft  
 H.P. — I.P. — L.P. 3573  
 1st reduction wheel 465  
 main shaft 81-5

Shaft diameter at journals  
 H.P. — I.P. — L.P. 125 mm  
 Pitch Circle Diameter  
 1st pinion 211.79 mm 1st reduction wheel 162.17 mm  
 2nd pinion 380.14 mm main wheel 212.48 mm  
 Width of Face  
 1st reduction wheel 280 mm  
 main wheel 540 mm

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings  
 1st pinion 130 mm 1st reduction wheel 165 mm  
 2nd pinion 440 mm main wheel 550 mm

Pinion diameter  
 1st 130 mm 2nd —  
 Pinion Shafts, diameter at bearings  
 External 1st 150 mm 2nd 350 mm  
 Internal 1st — 2nd 285 mm  
 diameter at bottom of pinion teeth  
 1st 197.146 mm 2nd 365.494 mm

Shafts, diameter at bearings  
 1st 250 mm 2nd —  
 500 mm EXT. diameter at wheel shroud,  
 main 400 mm INT.

Intermediate Shafts, diameter  
 as per rule — as fitted —  
 Thrust Shaft, diameter at collars  
 as per rule 13.65 as fitted 14.37

Shaft, diameter  
 as per rule — as fitted —  
 Screw Shaft, diameter  
 as per rule — as fitted —  
 Is the tube screw shaft fitted with a continuous liner —

Liners, thickness in way of bushes  
 as per rule — as fitted —  
 Thickness between bushes  
 as per rule — as fitted —  
 Is the after end of the liner made watertight in the boss —

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

Are the liners fitted, is the shaft lapped or protected between the liners —  
 Is an approved Oil Gland or other appliance fitted at the after end of the tube —

If so, state type —  
 Length of Bearing in Stern Bush next to and supporting propeller —

r, diameter — Pitch — No. of Blades — State whether Moveable — Total Developed Surface — square feet.  
 Screw, are arrangements made so that steam can be led direct to the L.P. Turbine No Can the H.P. or I.P. Turbines exhaust direct to the —

No. of Turbines fitted with astern wheels — Feed Pumps  
 No. and size — How driven —

Connected to the Main Bilge Line  
 No. and size — How driven —

Pumps, No. and size — Lubricating Oil Pumps, including Spare Pump, No. and size 2-10" x 9" x 24"  
 Independent means arranged for circulating water through the Oil Cooler — Suctions, connected both to Main Bilge Pumps and Auxiliary —

Pumps, No. and size:—In Engine and Boiler Room — In Pump Room —

&c. —

Water Circulating Pump Direct Bilge Suctions, No. and size — Independent Power Pump Direct Suctions to the Engine Room —

No. and size — Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes —

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 —

Sea Connections fitted direct on the skin of the ship — Are they fitted with Valves or Cocks —

fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates — Are the Overboard Discharges above or below the deep water —

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel — Are the Blow Off Cocks fitted with a spigot and brass plate —

What pipes pass through the bunkers — How are they protected —

of Ships pass through the deep tanks — Have they been tested as per rule —

Pipes, Cocks, Valves and Pumps in connection with the machinery and all boiler mountings accessible at all times —

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 from one compartment to another — Is the Shaft Tunnel watertight — Is it fitted with a watertight door — worked from —

S, &c. (Letter for record —) Total Heating Surface of Boilers —  
 Draft fitted — No. and Description of Boilers — Working Pressure —  
 Port on Main Boilers now forwarded? —



Is { a Donkey } Boiler fitted? ☒ If so, is a report now forwarded? ☒  
{ an Auxiliary }  
Is the donkey boiler intended to be used for domestic purposes only? ☒  
Plans. Are approved plans forwarded herewith for Shafting 24-8-51 Main Boilers ☒ Auxiliary Boilers ☒ Donkey Boilers ☒  
(If not, state date of approval)  
Superheaters ☒ General Pumping Arrangements ☒ Oil Fuel Burning Arrangements ☒  
Geared turbines situated aft. Have torsional vibration characteristics of system been approved? ☒ Date of approval ☒

### SPARE GEAR.

Has the spare gear required by the Rules been supplied? Yes  
State the principal additional spare gear supplied. One bearing of each size fitted, one set of thrust pads each thrust bearing, one spring and one set of washers for emergency governor.

For SWAN, HUNTER & WICHAM RICHARDSON LTD.,

DIRECTOR

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops - (1952) JAN 18 FEB 22 MAR 12 28 MAY 8 19 JUNE 9 18 24 //  
During erection on board vessel - - -  
Total No. of visits. NWC 9 VISITS.

Dates of Examination of principal parts - Casings 18-1-52, 28-3-52 Rotors 22-2-52, 19-5-52 Blading 22-2-52, 19-5-52 Gearing 12-3-52, 5-5-52  
Wheel shaft 18-6-52 Thrust shaft 18-6-52 Intermediate shafts ☒ Tube shaft ☒ Screw shaft ☒  
Propeller ☒ Stern tube ☒ Engine and boiler seatings ☒ Engine holding down bolts ☒  
Completion of fitting sea connections ☒ Completion of pumping arrangements ☒ Boilers fixed ☒ BN. Engines tried under steam.  
Main boiler safety valves adjusted ☒ Thickness of adjusting washers ☒  
Rotor shaft, Material and tensile strength O.H. Steel 38-2-39 TONS Identification Mark 22226-413  
1st REDUCTION Pinion Shaft, Material and tensile strength NICKEL Steel 41-8-42-5 TONS Identification Mark 22226-53  
2nd REDUCTION Pinion shaft, Material and tensile strength NICKEL STEEL 44-45 TONS Identification Mark 22226-419  
; Chemical analysis As per Rule Requirements

If Pinion Shafts are made of special steel state date of approval of chemical analyses, physical properties and heat treatment As per Rule Requirements  
1st Reduction Wheel Shaft, Material and tensile strength O.H. Steel 31-34 TONS Identification Mark 22226-419  
Wheel shaft, Material O.H. Steel Identification Mark 22226-421 HAI Thrust shaft, Material Identification Mark  
Intermediate shafts, Material ☒ Identification Marks ☒ Tube shaft, Material O.H. Steel Identification Marks 22226-419  
Screw shaft, Material ☒ Identification Marks ☒ 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? ☒  
If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with? ☒  
Is this machinery a duplicate of a previous case? No If so, state name of vessel ☒

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

Sone coupling. O.H. Steel. 29 TONS. 22226. HAI. 425  
1st Reduction gear wheel rims. O.H. Steel 33 TONS. 22226. HAI. 414.  
2nd " " " " 31-6-32-4 TONS. 22226. HAI. 417.

This machinery has been constructed under Special Survey in accordance with Secretary's approved Plans and Rule requirements.  
The material and workmanship are good.  
On completion the turbine was tested under steam with speeds up to 4350 RPM, and governor adjusted to operate at 4200 RPM (nominal 3500 RPM).  
The machinery has been dispatched to West Hartlepool for installation in Marine Engine Works No 1254.

50% OLD 50% NEW FEE.  
The amount of Entry Fee ... £ 30 : 6. ✓ When applied for.  
Special ... £ : : 26 AUG 1952  
Donkey Boiler Fee ... £ : : When received.  
Travelling Expenses (if any) £ : : 19

TUES. 6 JAN 1953

(The Committee's Minute

Assigned. Sir F.E. Mchly. opt. Hpl 19420

John F. Mchly & Co. Ltd.  
Engineer Surveyors to Lloyd's Register of Shipping

This turbine has been satisfactorily installed in S.S. "EUGENIA", a steam tug under full conditions in conjunction with main engine found satisfactory.

Lloyd's Register Foundation