

Report on Steam Turbine Machinery. No. 115207

Received at London Office JUN 1947

Writing Report 5.5.1947 When handed in at Local Office 18 JUN 1947 Port of LONDON

Survey held at RUGBY Date, First Survey 12.7.46 Last Survey 13.5.1947
(Number of Visits 33.)

on the TURBO-ELEC. S.S. "HYALINA" Tons {Gross 12267
Net 7307

at NEWCASTLE By whom built Messrs. SWAN HUNTER & WILSON & RICHARDS No. 1753 When built 1947
By whom made Messrs. BRITISH TANKER CO. LTD. Engine No. 2827
When made

rs made at RUGBY By whom made Boiler No. When made

Horse Power at Full Power 11,000 Owners ANGLO-SAXON PET. CO. LTD. Port belonging to

Horse Power as per Rule 13,000 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted YES.

for which Vessel is intended OIL-TANKER.

STEAM TURBINE ENGINES, &c.—Description of Engines. TURBO-ELECTRIC.

Ahead TWO Direct coupled, single reduction geared } to propelling shafts. No. of primary pinions to each set of reduction gearing double reduction geared }

coupled to { Alternating Current Generator 3 phase 65 periods per second } rated 4200 Kilowatts 3000 Volts at 3910 revolutions per minute;
Direct Current Generator }

plying power for driving ONE Propelling Motor, Type SYNCHRONOUS - DOUBLE UNIT.
8400 Kilowatts 3000 Volts at 115 revolutions per minute. Direct coupled, single or double reduction geared to ONE propelling shaft.

TURBINE	H. P.			I. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
Expansion	65"	3'-0.75"	22 Row									
"	1.07"	3'-1.0"	WHEEL									
"	.86"	3'-3.78"	1									
"	1.18"	3'-4.42"	1									
"	1.55"	3'-5.16"	1									
"	5.2"	3'-7.26"	1									
"	4.75"	3'-11.56"	1									
"	7.46"	4'-4.88"	1									

Horse Power at each turbine { H.P. 6500
I.P.
L.P. } Revolutions per minute, at full power, of each Turbine Shaft { H.P. 4150 1st reduction wheel
I.P. 3910
L.P. main shaft }

Shaft diameter at journals { H.P. 5" Pitch Circle Diameter 1st pinion
I.P. 7" 2nd pinion } 1st reduction wheel
Width of Face { 1st reduction wheel
main wheel }

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion
2nd pinion } 1st reduction wheel
main wheel

Pinion Shafts, diameter at bearings { External 1st
Internal 2nd } diameter at bottom of pinion teeth

Generator Shaft, diameter at bearings 7" & 7" ✓
Propelling Motor Shaft, diameter at bearings 20" & 20" ✓

Intermediate Shafts, diameter as per rule
Thrust Shaft, diameter at collars as per rule

Shaft, diameter as per rule
Screw Shaft, diameter as per rule

Is the { tube } shaft fitted with a continuous liner { screw }

Size Liners, thickness in way of bushes as per rule
Thickness between bushes as per rule

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

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 so, state type

Length of Bearing in Stern Bush next to and supporting propeller

Roller, diameter Pitch No. of Bades State whether Moveable Total Developed Surface square feet

Angle Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or I.P. Turbines exhaust direct to the

Condenser No. of Turbines fitted with astern wheels NONE Feed Pumps { No. and size
How driven }

Pumps connected to the Main Bilge Line { No. and size
How driven }

Oil Pumps, No. and size Lubricating Oil Pumps, including Spare Pump, No. and size TWO-ELECTRIC DRIVEN 100 GALS/H.R.

Two 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

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

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes

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

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

Are they fixed sufficiently high on the ship's side to be seen without lifting the stowhold 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

ring plate What pipes pass through the bunkers How are they protected

Do pipes pass through the deep tanks Have they been tested as per rule

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

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

Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

BOILERS, &c.—(Letter for record.....) Total Heating Surface of Boilers.....
 Is Forced Draft fitted..... No. and Description of Boilers..... Working Pressure.....
 Is a Report 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..... Main Boilers..... Auxiliary Boilers..... Donkey Boilers.....
 (If not, state date of approval)
 Superheaters..... General Pumping Arrangements..... Oil Fuel Burning Arrangements.....

SPARE GEAR.

Has the spare gear required by the Rules been supplied..... **YES.**
 State the principal additional spare gear supplied.....

The foregoing is a correct description,

THE BRITISH THOMSON-HOUSTON CO., LTD.

Dates of Survey while building { During progress of work in shops - - } **JULY 1946: 12.18; SEPT 4.23.25; OCT 7.9.21.23.28.29; NOV 13; DEC 16.17.**
 { During erection on board vessel - - } **JAN. 1947: 13.8.15.17; FEB. 6.21.26.28; MAR. 7.12.14.21.27; APR. 16.23.28; MAY 12.13.**
 Total No. of visits..... **33 IN SHOPS.**

Dates of Examination of principal parts—Casings..... **PORT 28.4.47** Rotors..... **28.4.47** Blading..... **28.4.47** Gearing.....
 Wheel shaft..... Thrust shaft..... Intermediate shafts..... Tube shaft..... **30.5.47** Screw shaft.....
 Propeller..... Stern tube..... Engine and boiler seatings..... Engine holding down bolts.....
 Completion of fitting sea connections..... Completion of pumping arrangements..... Boilers fixed..... Engines tried under steam.....

Rotor shaft, Material and tensile strength..... **Siemens Steel - 40 Tons tensile.** Identification Mark..... **PORT- LLOYDS.**
PORT ALTERNATOR Shaft, Material and tensile strength..... **Siemens steel. 40 " "** Identification Mark..... **STAR 21- "**
STARBOARD ALTERNATOR SHAFT Shaft, Material and tensile strength..... **Siemens Steel 40 " "** Identification Mark..... **LLOYDS. S. 39**
MAIN MOTOR Shaft, Material and tensile strength..... **Siemens Steel - 36 Tons tensile** Identification Mark..... **LLOYDS. 152**

Wheel shaft, Material..... Identification Mark..... Thrust shaft, Material..... Identification Mark.....
 Intermediate shafts, Material..... Identification Marks..... Tube shaft, Material..... Identification Marks.....
 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..... **YES.** If so, state name of vessel..... **"HELLICINA"**

General Remarks. (State quality of workmanship, opinions as to class, &c.)..... **The turbines have been built under Special Survey in accordance with the Rules and approved plans. Forgings for the turbo-alternators and propulsion motor have been made at approved works and found in order during construction. Fabrication of the main motor has been under survey. When built the turbines were run at various speeds up to full and overspeed, the operation of the governors and trip gears noted all found satisfactory. The propulsion motor was run at normal speed and found satisfactory at no load. Turbines and all bearings were examined and found satisfactory when up after running. Both sets have been despatched to Newcastle for installation in the vessel. This machinery is in my opinion eligible to have the notation +LMC when satisfactorily installed in the vessel and proved in order under working conditions.**

The amount of Entry Fee ... £ : : When applied for.....
 Special ... £ 105.0.0 : : **17/12/47**
 Donkey Boiler Fee ... £ : : When received.....
 Travelling Expenses (if any) £ 103.14.6 : :
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Jan. W. Bell. 
 Engineer Surveyor to Lloyd's Register of Shipping.

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

Committee's Minute..... **FRI. 16 APR 1948**
 Assigned..... **See F.E. Mch. rpt.**

