

# REPORT ON STEAM TURBINE MACHINERY.

No. 105225

Date of writing Report 19 When handed in at Local Office 21 APR 1948 Port of NEWCASTLE-ON-TYNE

No. in Survey held at North Shields Date, First Survey 18.2.48. Last Survey 12.4.1948.

Reg. Book. 36863 on the Turbo-elect. ss. "THELICONUS" (Number of Visits)

Built at Middlesbrough By whom built Alabamu D.D. & S.B. Corp. Yard No. 2048. Tons Gross 10638. Net 6307

Engines made at Schenectady N.Y. By whom made General Electric Corp. Engine No. 62869. When built 1945

Boilers made at New York. By whom made Combustion Eng. Co. Inc. Boiler No. 9487. When made 1945.

Shaft Horse Power at Full Power 6,600. Owners Anglo Saxon Petroleum Corp. Port belonging to LONDON.

Nom. Horse Power as per Rule 1,485. Is Refrigerating Machinery fitted for cargo purposes no. Is Electric Light fitted yes.

Trade for which Vessel is intended Carrying petroleum in bulk.

## STEAM TURBINE ENGINES, &c.—Description of Engines.

Turbo-electric.

No. of Turbines Ahead one Direct coupled, single reduction geared to propelling shafts. No. of primary pinions to each set of reduction gearing.

Astern 1 double reduction geared

direct coupled to Alternating Current Generator 3 phase 62 periods per second rated 5,400 Kilowatts 2,370 Volts at 3,715 revolutions per minute;

for supplying power for driving one Propelling Motor, Type Marine synchronous.

rated 5,400 Kilowatts 2,370 Volts at 93 revolutions per minute. Direct coupled, single or double reduction geared to one propelling shaft.

## TURBINE BLADING.

TUBINE			H.P.			I.P.			L.P.			ASTERN.		
BLADING.			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.
1ST EXPANSION .....														
2ND       "														
3RD       "														
4TH       "														
5TH       "														
6TH       "														
7TH       "														
8TH       "														
9TH       "														
10TH      "														
11TH      "														
12TH      "														

Shaft Horse Power at each turbine H.P. 6,600 I.P. L.P. Revolutions per minute, at full power, of each Turbine Shaft H.P. 3,715 I.P. L.P. 1st reduction wheel main shaft

Refor Shaft diameter at journals H.P. I.P. L.P. Pitch Circle Diameter 1st pinion 1st reduction wheel 2nd pinion main 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 1st reduction wheel 2nd pinion main wheel

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

Wheel Shafts, diameter at bearings 1st main diameter at wheel shroud, 1st main Generator Shaft, diameter at bearings Propelling Motor Shaft, diameter at bearings 17 1/2" 18 1/2"

Intermediate Shafts, diameter as per rule as fitted 16.56" 16.78" Thrust Shaft, diameter at collars as per rule as fitted 17.39" 18" 18 1/2"

Tube Shaft, diameter as per rule as fitted Screw Shaft, diameter as per rule as fitted 18.185" 18 3/8" Is the shaft fitted with a continuous liner yes

Bronze Liners, thickness in way of bushes as per rule as fitted 8.58" 18" Thickness between bushes as per rule as fitted 6.43" 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

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 two liners are 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 shaft no If so, state type Length of Bearing in Stern Bush next to and supporting propeller 7'-3"

Propeller, diameter 19'-6" Pitch 17'-6" No. of Blades 4 State whether Moveable no Total Developed Surface 138.3 square feet.

If Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Can the H.P. or L.P. Turbine exhaust direct to the Condenser yes No. of Turbines fitted with astern wheels none Feed Pumps No. and size Two - Turbo 200 gals./min. One - 10" x 7" x 24" How driven Steam

Pumps connected to the Main Bilge Line No. and size One, 4" x 6" x 12" 450 gals./min., one 4" x 6" x 12" 450 gals./min. Two, bilge 17 1/2" x 12" x 24" How driven electrically

Ballast Pumps, No. and size Two 4" x 6" x 12" 450 gals./min. Lubricating Oil Pumps, including Spare Pump, No. and size Two - 60 gals./min. each

Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room 2" 3" dia. eff. 1" dia. 3" dia. Effluents 1" dia. 3" dia. In Pump Room one 4" dia. In Hold, &c. 1" dia. 3" dia. dry well: one 3 1/2" dia. boiler room drain: one 3" dia. L.O. pump effluents: one 3" dia. propeller water return.

Main Water Circulating Pump Direct Bilge Suctions, No. and size One 18" dia. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two 4" dia. Are all the Bilge Suction pipes in Engine Room and Tunnel Well fitted with strum-boxes. Macombs strainers, 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 Strum boxes & yes

Are all Sea Connections fitted direct on the skin of the ship, steel pipes welded to shell Are they fitted with Valves or Cocks Valves

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 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 none How are they protected

What pipes pass through the deep tanks none Have they been tested as per rule

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 W.T. bulkhead Is it fitted with a watertight door yes worked from Platform

002956-002969-0334



BOILERS, &c.—(Letter for record ) Total Heating Surface of Boilers 11,354 sq. feet.

Is Forced Draft fitted *Yes* No. and Description of Boilers *Two S.M. type* Working Pressure *500/64/10*

Is a Report on Main Boilers now forwarded? *Yes*

Is { a Donkey } Boiler fitted? *Yes*

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

Is the donkey boiler intended to be used for domestic purposes only *Yes*

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

*Spare propeller has been ordered and will be placed on board at an early date.*

The foregoing is a correct description,

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

Dates of Examination of principal parts—Casings Rotors Blading Gearing  
Wheel shaft Thrust shaft 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 Engines tried under steam

Main boiler safety valves adjusted Thickness of adjusting washers

Rotor shaft, Material and tensile strength Identification Mark

Flexible Pinion Shaft, Material and tensile strength Identification Mark

Pinion shaft, Material and tensile strength Identification Mark

1st Reduction Wheel Shaft, Material and tensile strength Identification Mark

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 *Yes*

Is the flash point of the oil to be used over 150°F. *Yes* Have the requirements of the Rules for the use of oil as fuel been complied with *Yes*

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *Yes* If so, have the requirements of the Rules been complied with *Yes*

If the notation for ice strengthening is desired, state whether the requirements in this respect have been complied with *Yes*

Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *T2 Tankers*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under the survey of the U.S. Coast Guard and the American Bureau of Shipping. Materials and workmanship considered good. The scantlings and general arrangements have been checked and found in accordance with the plans on board the vessel. Machinery examined under working conditions and found satisfactory and reliable in my opinion to have records of LMC (with date) as previously recommended, WTBS. 4.48, 500 lbs., Spt. 473 lbs., F.D., TSEL. 4.48, Fitted for oil fuel 1945, F.P. above 150°F.*

The amount of Entry Fee ... £	:	:	When applied for,
Special ... £	:	:	19
Donkey Boiler Fee ... £	:	:	When received,
Travelling Expenses (if any) £	:	:	19

Committee's Minute

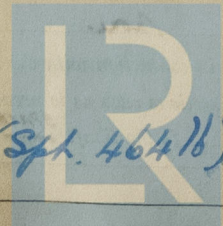
FRI. 28 MAY 1948

Assigned

*LMC MS 5.47 BS 4.48*

FITTED FOR OIL FUEL FLASH POINT ABOVE 150°F.

*F.D. C.L. 2 WTB 500 lb (Spt. 464 lb)*



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