

REPORT ON STEAM TURBINE MACHINERY.

22 OCT 1947

Received at London Office

4a.

of writing Report 11.10.1947 When handed in at Local Office 10 Port of Birkenhead
 in Survey held at Birkenhead Date, First Survey 1947 Last Survey 19
 Book 193 on the T.E.S. "TENACODUS" (Number of Visits 1)
 Tons } Gross 10142
 Net 6134
 When built 1944
 By whom built Alabama D.D. & S.B.C. Yard No.
 By whom made General Electric Co. Engine No.
 When made 1944
 By whom made Combustion Engineering Co. Boiler No.
 When made 1944
 Owners Anglo Saxon Petroleum Co. Ltd. Port belonging to London
 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
 for which Vessel is intended PETROLEUM IN BULK

STEAM TURBINE ENGINES, &c.—Description of Engines

Turbo-electric drive.

of Turbines Ahead one Direct coupled, single reduction geared } to ✓ propelling shafts. No. of primary pinions to each set of reduction gearing ✓
 Astern ✓ double reduction geared }
 coupled to } Alternating Current Generator 3 phase 62 periods per second } rated 5400 KVA 2340 Volts at 3415 revolutions per minute;
 Direct Current Generator }
 supplying power for driving one Propelling Motors, Type Synchronous. TBM 80.
4625 KVA 2300 Volts at 90 revolutions per minute. Direct coupled, single or double reduction geared to one propelling shafts.

TURBINE LOADING.	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	7/8"	34"	2	/	/	/	/	/	/	/	/	/
Manufacture	1"	34"	1	/	/	/	/	/	/	/	/	/
"	1 1/4"	34 3/8"	1	/	/	/	/	/	/	/	/	/
"	1 5/8"	35 1/4"	1	/	/	/	/	/	/	/	/	/
"	7/8"	42 1/2"	1	/	/	/	/	/	/	/	/	/
"	1 3/8"	43 1/2"	1	/	/	/	/	/	/	/	/	/
"	2 1/8"	45 1/2"	1	/	/	/	/	/	/	/	/	/
"	2 1/2"	47"	1	/	/	/	/	/	/	/	/	/
"	5/8"	49 1/2"	1	/	/	/	/	/	/	/	/	/
"	9"	56"	1	/	/	/	/	/	/	/	/	/

ft Horse Power at each turbine { H.P. ✓ } H.P. 3415 1st reduction wheel ✓
 { I.P. ✓ } I.P. ✓ main shaft 90
 { L.P. ✓ } L.P. ✓
 or Shaft diameter at journals { H.P. 5" AFT } Pitch Circle Diameter { 1st pinion ✓ } 1st reduction wheel ✓ } Width of Face { 1st reduction wheel ✓
 { I.P. 10" FWD } { 2nd pinion ✓ } main wheel ✓ } { main wheel ✓
 { L.P. ✓ } { 1st pinion ✓ } 1st reduction wheel ✓ }
 { 2nd pinion ✓ } 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 ✓
 Pinion Shafts, diameter at bearings External { 1st ✓ } 2nd ✓ } diameter at bottom of pinion teeth { 1st ✓
 Internal { 2nd ✓ } { 2nd ✓ } { 2nd ✓
 Generator Shaft, diameter at bearings 5"
 Propelling Motor Shaft, diameter at bearings 1 1/4"

Intermediate Shafts, diameter as per rule 16.56 Thrust Shaft, diameter at collars as per rule 14.39
 as fitted 16.3 as fitted 14.2
 Screw Shaft, diameter as per rule 18.185 Is the ✓ screw shaft fitted with a continuous liner { yes
 as fitted 18.3 as fitted 17.6 Is the after end of the liner made watertight in the

brass Liners, thickness in way of bushes as per rule 0.858 Thickness between bushes as per rule 0.643
 as fitted 1.3 as fitted 1.76
 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 ✓
 If no If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 4' 3"

Propeller, diameter 19' 6" Pitch 14' 6" No. of Blades 4 State whether Moveable no Total Developed Surface 138.3 square feet.
 Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine ONE TURBINE ONLY Can the H.P. or I.P. Turbine exhaust direct to the
 Condenser ✓ No. of Turbines fitted with astern wheels NONE Feed Pumps No. and size 2. 200 GPM 1. 130 GPM (10 x 7.24)
 How driven Steam turbine Steam Dist. Simplex
 Pumps connected to the Main Bilge Line { No. and size 2. 200 GPM 1. 450 GPM 1. 300 GPM (fwd pump room)
 How driven Electric Steam Dist. Duplex

Oil Pumps, No. and size 1. 300 GPM (fwd pump room) Lubricating Oil Pumps, including Spare Pump, No. and size 2. 60 GPM
 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 1 at 3 1/2" 8 at 3" (inc. motor well) 4 at 2 1/2" (Blade in Pump Room)
 Holds, &c. BATSWAINS STORE 2-1 EJECTORS. CHAIN LOCKER 2 EJECTOR. FORD PUMPROOM ONE 10" x 7 1/2" BILGE PUMP STEAM DUPLEX 2 1/2" SUCTIONS P/S DRY STORES 2 1/2" P/S PUMPROOM

Water Circulating Pump Direct Bilge Suctions, No. and size 1 at 1 1/2" Independent Power Pump Direct Suctions to the Engine Room
 No. and size 2 at 4" 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 Hot wells
 all Sea Connections fitted direct on the skin of the ship no Are they fitted with Valves or Cocks all 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 VALVES

How are they protected ✓ 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 no Is it fitted with a watertight door no worked from ✓

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

Is Forced Draft fitted yes No. and Description of Boilers 2. B.W. Type

Working Pressure 46 lbs

Is a Report on Main Boilers now forwarded? no

Is a Donkey Boiler fitted? no

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 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 Arrangements yes

Has the spare gear required by the Rules been supplied no

SPARE GEAR.

State the principal additional spare gear supplied.

AS PER RULES REQUIREMENTS EXCEPT THERE IS NO SPARE PROPELLER

The foregoing is a correct description,

Manufacturer E.A.M.

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

AMERICAN BUREAU SURVEY

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 fired 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 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 If so, state name of vessel

General Remarks (State quality of workmanship, opinions as to class, &c.) This report is submitted for the information of the Committee.

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

H. Greenhard
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 21 OCT 1947

Assigned See Minute on Liverpool Mech Rep.



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Certificate (if required) to be sent to Committee's Minute.