

# REPORT ON STEAM TURBINE MACHINERY. No. 105406

Date of writing Report 19 When handed in at Local Office 19 Port of **NEWCASTLE-ON-TYNE** Received at London Office 26 NOV 1948

No. in Survey held at *South Shields* Date, First Survey 13/9/48 Last Survey 22/10/1948  
Reg. Book. *77969* on the *S.S. 'TRESUS'* (Number of Visits 24)

Built at *Portland, Oregon* By whom built *Kaiser Co., Inc.* Yard No. *98* Tons } Gross *10669*  
Engines made at *Lynn, Mass.* By whom made *G. E. Co.* Engine No. *364743* Net *6317* When built *1944*  
Boilers made at *U.S.A.* By whom made *Combustion Engine Co.* Boiler No. *39663* When made *1944*  
Shaft Horse Power at Full Power *525 K.W.* Owners *Anglo-Saxon Petroleum Co. Ltd.* Port belonging to *London*  
Nom. Horse Power as per Rule  Is Refrigerating Machinery fitted for cargo purposes *No.* Is Electric Light fitted *Yes*  
Trade for which Vessel is intended *Petroleum in Bulk.*

STEAM TURBINE ENGINES, &c. — Description of Engines *Two single reduction geared impulse turbines*  
No. of Turbines Ahead *One* Direct coupled, single reduction geared } to *Generator* No. of primary pinions to each set of reduction gearing *One*  
Astern  double reduction geared }  
direct coupled to { Alternating Current Generator *3* phase *60* periods per second }  
for supplying power for driving  Direct Current Generator } rated *400* Kilowatts *450* Volts at *1200* revolutions per minute;  
Propelling Motors, Type   
rated  Kilowatts  Volts at  revolutions per minute. Direct coupled, single or double reduction geared to  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.
1ST EXPANSION	$\frac{1}{2}$ "	25 $\frac{9}{16}$ "	1									
2ND	$\frac{1}{2}$ "	26 $\frac{1}{16}$ "	1									
3RD	$\frac{1}{2}$ "	25 $\frac{9}{16}$ "	1									
4TH	$\frac{1}{2}$ "	26 $\frac{1}{16}$ "	1									
5TH	$\frac{1}{2}$ "	25 $\frac{3}{8}$ "	1									
6TH	$\frac{1}{2}$ "	26 $\frac{3}{8}$ "	1									
7TH												
8TH												
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine { H.P. *700* }  
I.P.  }  
L.P.  } Revolutions per minute, at full power, of each Turbine Shaft { H.P. *5645* }  
I.P.  } 1st reduction wheel   
L.P.  } main shaft *1200*

Motor Shaft diameter at journals { H.P. *2 1/2*" }  
I.P.  } Pitch Circle Diameter { 1st pinion *5.43*" 1st reduction wheel *25.56* }  
L.P.  } 2nd pinion  main wheel  Width of Face { 1st reduction wheel *8.25*" }  
main wheel

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings { 1st pinion *6.625*" 1st reduction wheel *6.625*" }  
2nd pinion  main wheel

Pinion Shafts, diameter at bearings { External 1st *4*" }  
Internal 1st  2nd  diameter at bottom of pinion teeth { 1st *5.125*" }  
2nd

Wheel Shafts, diameter at bearings { 1st *4*" }  
main  diameter at wheel shroud, { 1st  Generator Shaft, diameter at bearings *4*" }  
main  Propelling Motor Shaft, diameter at bearings

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

Tube Shaft, diameter as per rule   
as fitted  Screw Shaft, diameter as per rule   
as fitted  Is the { tube } shaft fitted with a continuous liner {  }

Bronze 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  
propeller boss. 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 so, state type  Length of Bearing in Stern Bush next to and supporting propeller

Propeller, diameter  Pitch  No. of Blades  State whether Moveable  Total Developed Surface  square feet.  
Single Screw, are arrangements made so that steam can be led direct to the L.P. Turbine  Can the H.P. or I.P. Turbine exhaust direct to the  
condenser  No. of Turbines fitted with astern wheels  Feed Pumps { No. and size  }  
How driven

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

Ballast Pumps, No. and size  Lubricating Oil Pumps, including Spare Pump, No. and size

Two independent means arranged for circulating water through the Oil Cooler  Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
Pumps, No. and size: — In Engine and Boiler Room  In Pump Room

Holds, &c.  Independent Power Pump Direct Suctions to the Engine Room

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

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

Are 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 stokehold plates  Are the Overboard Discharges above or below the deep water line

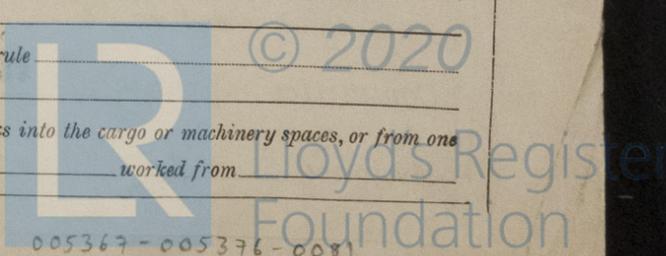
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel  Are the Blow Off Cocks fitted with a spigot and brass covering plate

Are pipes pass through the bunkers  How are they protected

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

Are 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 spaces, or from one  
compartment to another  Is the Shaft Tunnel watertight  Is it fitted with a watertight door



**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

State the principal additional spare gear supplied

The foregoing is a correct description,

Manufacturer.

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  
 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 If so, state name of vessel

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

*These machines have been constructed under the supervision of the U.S. Coast Guard and the American Bureau of Shipping. The workmanship is good and the materials considered sound. Examined under working conditions and found satisfactory.*

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

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

*J. H. White*  
 Engineer in Charge to Lloyd's Register of Shipping.

Committee's Minutes

FRI. 17 DEC 1946

Assigned

*See minutes on page 5*



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