

REPORT ON STEAM TURBINE MACHINERY. No. 4247

Writing Report 25 April 1949 When handed in at Local Office 19 Port of Boston, Massachusetts
Survey held at Lynn, Mass. Date, First Survey January 24 Last Survey April 1, 1949
Book on the "Ras All Ardh"
at Chester, Pa. By whom built Sun Shipbuilding & Dry Dock Co. Yard No. 569 When built
Reduction gear made at Lynn, Mass. By whom made General Electric Co. Engine No. 83325 When made 1948
Boiler No. 83326 When made
Horse Power at Full Power 12,500 Owners Gulf Oil Corp. Gear No. 67133 Port belonging to
Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
for which Vessel is intended

STEAM TURBINE ENGINES, &c.—Description of Engines Cross compound turbines and double reduction gears
Ahead Two ~~Direct coupled~~ to One propelling shafts. No. of primary pinions to each set of reduction gearing Two
Astern One ~~single reduction geared~~
coupled to { Alternating Current Generator phase periods per second } rated Kilowatts Volts at revolutions per minute;
Direct Current Generator }
Applying power for driving Propelling Motors, Type
Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

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	29.3	1				1.28	40.7	1	.85	44.4	1
Jun	.86	19.0	1				1.62	41.4	1	1.13	44.7	1
"	.96	19.2	1				2.18	42.5	1	4.58	49.0	1
"	1.08	19.5	1				3.03	44.2	1			
Jan	1.21	19.7	1				4.02	46.2	1			
Mar	1.39	20.1	1				6.11	49.5	1			
Mar	1.62	20.6	1				8.79	53.4	1			
7 23	2.02	21.4	1				11.38	57.3	1			
n.21												
1-4												
4-3												

H.P. 6688
Horse Power at each turbine I.P. 7062
L.P. 5812
Revolutions per minute, at full power, of each Turbine Shaft { H.P. 7062 1st reduction wheel 1006
L.P. 3438 main shaft 112
H.P. 9.950" H.P. 69.850"
L.P. 15.709" L.P. 53.6905"
Shaft diameter at journals { 1st pinion 15 1/2" 1st reduction wheel 19 1/4"
2nd pinion 18.0" main wheel 161.666" Face { main wheel 41"
Pitch Circle Diameter { 1st pinion 15 1/2" 1st reduction wheel 15 1/4"
2nd pinion 2'-5 3/4" main wheel 2'-8 1/2"
H.P. 5.0" H.P. 13.0" H.P. 9.503"
L.P. 6.0" L.P. 13.0" diameter at bottom of pinion teeth { 1st L.P. 15.2625"
2nd L.P. 17.237"
Solid Solid
Shafts, diameter at bearings { 1st 10.0" diameter at wheel shroud, { 1st 10 3/8" Generator Shaft, diameter at bearings
main 24.0" (taper fit) Propelling Motor Shaft, diameter at bearings
mediate Shafts, diameter as per rule Thrust Shaft, diameter at collars as per rule Tube Shaft, diameter as per rule
as fitted 13-3/8" as fitted
Shaft, diameter as per rule Is the { tube } shaft fitted with a continuous liner { Bronze Liners, thickness in way of bushes as per rule
as fitted screw } 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
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
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
appliance fitted at the after end of the tube shaft. Length of Bearing in Stern Bush next to and supporting propeller
er, diameter. Pitch No. of Blades State whether Moveable Total Developed Surface square feet.
le Screw, are arrangements made so that steam can be led direct to the L.P. Turbine Yes Can the H.P. or I.P. Turbine exhaust direct to the
er. Yes No. of Turbines fitted with astern wheels One 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
independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge
No. and size:—In Engine and Boiler 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 line
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
es pass through the bunkers How are they protected
es pass through the deep tanks Have they been tested as per rule
pes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times
ngement 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
ent to another 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?
an Auxiliary

If so, is a report now forwarded?

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

Main Boilers

Auxiliary Boilers

Donkey Boilers

Superheaters

General Pumping Arrangements

Oil Fuel Burning Arrangements

Spare Gear. State the articles supplied: One complete bearing bush for each size of main gear wheel shafts,
shafts and pinion shaft.

One half set of packing rings for each gland.

One set of thrust shoes for each size.

The foregoing is a correct description,

L. E. Grube, Turbine Engineering Dept.
General Electric Co

Manufacture

Dates of Survey while building { During progress of work in shops - - -
XXXXXXXXXXXX
XXXXXXXXXXXX
Total No. of visits 6
January 24, 31, March 3, 4, 21, and April 1, 1949

Dates of Examination of principal parts—Casings Jan. 24, Mar. 3, 21, 1949 Rotors Jan. 24, 31, Mar. 4, 1949 Blading Jan. 24, 31, Mar. 4, 1949 Gearing Jan. 24, Mar. 4, 1949
Wheel shaft Jan. 24, 1949 Thrust shaft Jan. 24, 1948 Intermediate shafts Tube shaft Screw shaft

Propeller Stern tube Engine and boiler seatings Engine holding down bolts

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 H. P.-O. H. Steel-111,500 lbs.

Identification Mark LR 302 1-4-

H. S. L. P.-O. H. Steel-103,000 lbs.

Identification Mark LR 301 4-3-

Pinion Shaft, Material and tensile strength H. P.-O. H. Steel-100,500 lbs.

Identification Mark LR 301 31-1-

L.S. Pinion shaft, Material and tensile strength L. P.-O. H. Steel-117,000 lbs.

Identification Mark LR 301 31-1-

1st Reduction Wheel Shaft, Material and tensile strength H. P.-O. H. Steel-103,500 lbs.

Identification Mark LR 301 31-1-

Wheel shaft, Material O. H. Steel Identification Mark LR 301 31-1-49 T.B.

Identification Mark LR 301 31-1-

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

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 machinery has been completed under Special

Survey in accordance with approved plans. The forgings and castings were tested by A. B. S.

Surveyors and for particulars of tests, please refer to A. B. S. Certificates which are to be

supplied. The workmanship and materials are good. The gears have been tried out in the shop

under 38% of full load torque conditions and found satisfactory. The unit has been forwarded

to the Sun Shipbuilding & Dry Dock Co., Chester, Pa.

Arranged fee to be charged by Philadelphia Surveyors on completion.

The amount of Entry Fee	£	:	:	When applied for,
Special	£	:	:	19
Donkey Boiler Fee	£	:	:	When received,
Travelling Expenses (if any)	£ \$4.00	:	:	19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned See First Entry Report attached

NEW YORK AUG 31 1949



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Foundation