

REDUCTION GEAR
REPORT ON STEAM TURBINE MACHINERY. No. 1543

4a.

Received at London Office

Writing Report 27th May 1933 When handed in at Local Office 19 Port of BREMEN
in Survey held at BREMEN Date, First Survey 8th Nov. 1932 Last Survey 15th May 1933
Book. on the STEEL SC. ZWARTE ZEE (Number of Visits)
Tons } Gross
Net
Built at KINDERDIJK By whom built L. SMIT & ZOON Yard No. 872 When built
Engines made at AMSTERDAM By whom made N.V. WERKSPOR Engine No. When made
Reduction Gear made at BREMEN By whom made DESCHIMAG - A.G. WESER Engine No. 30 When made 1933
Horse Power at Full Power 3000 Owners L. SMIT & CO Port belonging to ROTTERDAM
Horse Power as per Rule Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted
Made for which Vessel is intended SEA GOING TUG

STEAM TURBINE ENGINES, &c.—Description of Engines S.R. GEARING & VULCAN COUPLING

OIL ENGINES ☒ Direct coupled, ☒ single reduction geared ☒ double reduction geared to 1 propelling shafts. No. of primary pinions to each set of reduction gearing 1
Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;
supplying power for driving Propelling Motors, Type
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.
EXPANSION												
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Horse Power at each turbine OIL ENG. H.P. 1580 I.P. 275 L.P. 120
Revolutions per minute, at full power, of each turbine Shaft
Pitch Circle Diameter 1st pinion 766.37 2nd pinion main wheel 1712.24
Width of Face 1st reduction wheel main wheel 640

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings
1st pinion 550. 2nd pinion main wheel 550.

Pinion Shafts, diameter at bearings External 1st 320 2nd 200
Internal 1st 200 2nd 160
Pinion Shafts, diameter at bearings External 1st 320 2nd 200
Internal 1st 200 2nd 160
Primary Wheel Generator Shaft, diameter at bearings 400

Intermediate Shafts, diameter as per rule as fitted Thrust Shaft, diameter at collars as per rule as fitted 340
Tube Shaft, diameter as per rule as fitted

Propeller Shaft, diameter as per rule as fitted Is the tube screw 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

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

other appliance fitted at the after end of the tube shaft 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

Last 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
Folds, &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

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 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

How are they protected 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
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
Department 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? —
{ an Auxiliary }

If so, is a report now forwarded? —

Plans. Are approved plans forwarded herewith for Shafting *yes*
(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:—

*1 set of bearing brasses for each kind of bearings
1 set of thrust pads for each thrust bearing*

The foregoing is a correct description,

W. House

Manufacturer —

Dates of Survey while building { During progress of work in shops -- } *1932 Nov. 8. 28. Dec. 6. 1933 Jan. 6. March 1. 8. 22. 28. April 6. 22. 25. May 5. 12. 13. 15.*
{ During erection on board vessel --- }
Total No. of visits *16*

Dates of Examination of principal parts—Casings *6. 4. 33* Rotors — Blading — Gearing *15. 3. 33*

Wheel shaft *6. 1. 33.* Thrust shaft *6. 1. 33.* PINION Intermediate shafts *1. 3. 33.* PRIMARY COUPL. Tube shaft *1. 3. 33* 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 — Identification Mark —

Flexible Pinion Shaft, Material and tensile strength — Identification Mark —

Pinion shafts Material and tensile strength *S. M. Special Steel 66 kg/mm²* Identification Mark *K.H. 14317/18. 23.*

PRIMARY 1st Reduction Wheel Shafts Material and tensile strength *S. M. Steel 44-50 kg/mm²* Identification Mark *A.C. 270/71. 1.*

2nd THRUFT SHAFT Wheel shaft, Material *S. M. Steel* Identification Mark *A.C. 269. 6. 6. 33* 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 —

Is this machinery a duplicate of a previous case *no* If so, state name of vessel —

General Remarks (State quality of workmanship, opinions as to class, &c. *This Reduction Gear with Vulcan*

Coupling has been built under Special Survey in accordance with the approved plans and the Puncture letter. The materials used in the construction are made at works recognized by the Committee and tested as required by the Rules. Material & workmanship are of good quality. This machinery has been shipped to Amsterdam

The amount of Entry Fee ... £ : : When applied for,
Special ... £ *32 : 0* : *26.5.1933*
Donkey Boiler Fee ... £ : : When received,
Travelling Expenses (if any) £ *2 : 0* : *24.6.1933*

A. Cartman
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 20 OCT 1933*

Assigned

La F. E. Rpt.



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Foundation