

# REPORT ON STEAM TURBINE MACHINERY.

No. 17858

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4a. Date of writing Report 3 Oct 1928 When handed in, at Local Office 10 Port of Rotterdam  
 in Survey held at Hoengelo-Rotterdam Date, First Survey April 12 Last Survey Oct 1 1928  
 eg. Book. on the S.S. "Kieum-herk" (Number of Visits 45+13)  
 Tons Gross 6249.73 Net 3711.56  
 Built at Rotterdam By whom built J. Smit & Co Yard No. 410 When built 1920  
 Engines made at Hoengelo By whom made Gebr. Stork & Co Engine No. 410 When made 1920  
 Boilers made at Rotterdam By whom made J. Smit & Co Boiler No. 527/530 When made 1920  
 Horse Power at Full Power 3500 Owners Ter. Kred. Schuy. My Port belonging to Gravenhage  
 Horse Power as per Rule 825 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
 for which Vessel is intended General Trade.

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

Turbines Ahead 1 H.P. 1 L.P. 1 to One propelling shafts. No. of primary pinions to each set of reduction gearing  
 Astern 1 H.P. 1 L.P. 1 double reduction geared  
 Coupled to Alternating Current Generator phase periods per second Direct Current Generator rated Kilowatts Volts at revolutions per minute;  
 Driving power for driving Propelling Motors, Type  
 Kilowatts Volts at revolutions per minute. Direct coupled, single or double reduction geared to propelling shafts.

LINE	H.P.			H.P. Astern			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.
PANSION	431-634	750.2	791.8	342/56	751.5	786	51	707	4	428-661	1090.6-1133	1145
"	31.7	432	7	"	"	"	67	819	4	34.9	908	2
"	42.86	454	7	"	"	"	86	857	4	50.8	939.8	2
"	44.45	460	7	"	"	"	65	1095	2	76.2	990.6	2
"	58.73	486	7	"	"	"	87.5	1140	2	76.2	990.6	2
"	76.19	525	7	"	"	"	114.5	1194	2	76.2	990.6	2
"							131.75	1220.5	1			
"							150.75	1202.5	1			
"							190.5	1346	1			
"							190.5	1346	1			
"							190.5	1346	1			

Horse Power at each turbine H.P. 1750 I.P. 3300  
 Shaft diameter at journals H.P. 140 mm I.P. 130 mm  
 Pitch Circle Diameter 1st pinion 1309 mm 1st reduction wheel 1375 mm  
 2nd pinion 400 mm main wheel 3020 mm

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings 1st pinion 460 mm 1st reduction wheel 1145 mm  
 2nd pinion 460 mm main wheel 1175 mm  
 Pinion diameter 1st 140 mm 2nd 100 mm  
 Pinion Shafts, diameter at bearings 1st 400 mm 2nd 350 mm  
 diameter at wheel shroud, 1st 500 mm 2nd 450 mm

Intermediate Shafts, diameter as per rule 370 mm Thrust Shaft, diameter at collars as per rule 390 mm  
 Shaft, diameter as fitted 370 mm Is the shaft fitted with a continuous liner Yes  
 as per rule 370 mm Is the after end of the liner made watertight in the propeller boss Yes

Is the liner in more than one length are the junctions fusion through the whole thickness of the liner One length  
 Is an approved Oil Gland appliance fitted at the after end of the tube shaft No  
 Length of Bearing in Stern Bush next to and supporting propeller 3000 mm  
 Diameter 5490 mm Pitch 5100 mm No. of Blades 4 State whether Moveable Yes  
 Total Developed Surface 10666 square feet.

Can the H.P. or I.P. Turbine exhaust direct to the sea Yes  
 No. of Turbines fitted with astern wheels 2  
 Feed Pumps No. and size 3 plunger pumps Diam 6" Stroke 8" 1/2 12" x 12" x 14"  
 How driven Steam  
 connected to the Main Bilge Line No. and size 1 a 150 mm Diam: 200 mm Stroke: 12" 10" x 11" x 10"  
 How driven from Intermediate shaft Steam.

Pumps, No. and size 1 a 10" x 11" x 10" Lubricating Oil Pumps, including Spare Pump, No. and size 2 a 550 lts/min 12" x 10" x 18"  
 independent means arranged for circulating water through the Oil Cooler Yes  
 Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge  
 No. and size:—In Engine and Boiler Room tunnel 12" 3" 12" 3" 12" 5" 4" 3" 4" 3" in dry tank.  
 No. 1 hold 2 a 3" No. 2 hold 2 a 3" No. 3 hold 2 a 3" No. 4 hold 2 a 3" No. 5 hold 2 a 3" No. 6 hold 2 a 3"

Water Circulating Pump Direct Bilge Suctions, No. and size 1 a 300 mm Independent Power Pump Direct Suctions to the Engine Room  
 No. and size 1 a 12" 7" Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes  
 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 Yes  
 Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Valves & Cocks

Are the Overboard Discharges above or below the deep water line Below  
 Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes  
 How are they protected  
 Have they been tested as per rule Yes  
 All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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 Yes Is it fitted with a watertight door Yes  
 worked from top of shaft

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BOILERS, &c.—(Letter for record 2) Total Heating Surface of Boilers 1040 cft<sup>2</sup> 11190 sqft.  
Is Forced Draft fitted Yes. No. and Description of Boilers 4 Marine Single Ended Working Pressure 225  
Is a Report on Main Boilers now forwarded? Yes.  
Is { a Donkey } Boiler fitted? No If so, is a report now forwarded? —  
{ an Auxiliary }

Plans. Are approved plans forwarded herewith for Shafting 17-0-27 Main Boilers 3-0-27 Auxiliary Boilers — Donkey Boilers —  
(If not state date of approval)

Superheaters — General Pumping Arrangements 15-10-27 Oil Fuel Burning Arrangements —

Spare Gear. State the articles supplied: — Und CUs per attached list.

- (1) 2 bolts and nuts for each side of rotor bearing. (2) 2 bolts and nuts main gear wheel bearing.
  - (3) 2 bolts and nuts pinion bearing. (4) 1 set of coupling bolts of each size.
  - (5) 25% bolts and nuts for each gear case joint. (6) 2 thermometers for oil circulating.
  - (7) 1 set of bearing bushes for one gear wheel shaft. (8) 1 set of bearing bushes for rotor shaft.
  - (9) 1 set of bearing bushes for pinion shafts. (10) 1 set of pads for one face Mitchell thrust.
  - (11) 1 set of liners for adjusting block of different thickness. (12) 1 set of valves for feed and bleed.
  - (13) 1 set of valves for lubricating oil pump. 1 bucket and rod for lubricating oil pump.
- A quantity of assorted bolts, studs and nuts.

MACHINEFABRIEK & SCHEEPSWERF  
van P. SMIT Jr.

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops — 1917: 0 Nov: 1928 20 Jan: 2-6-16 Feb: 5-8-27 March 10-26 April 2-7-31 May 7-10  
During erection on board vessel — April 12-16-20-23-25-27 May 1-4-16-23-31 June 6-20-26-29 July 4-5-10  
Total No. of visits 19-25-27-30 Aug 1-3-6-10-24-27 Sept 3-6-7-10-13-17-18-20-24-25-26-27-28

Dates of Examination of principal parts—Casings 20 Jan: 1 May Rotors 20 Jan: 1 June Blading 5 March 7 May Gearing 24 June

Wheel shaft — Thrust shaft 1-5-28; 16-5-28 Intermediate shafts 1-5-28; 16-5-28 Tube shaft — Screw shaft 1-5-28

Propeller 1-5-28 Stern tube 6-6-28; 19-7-28 Engine and boiler seatings 10-6-28; Engine holding down bolts 10-9-28

Completion of pumping arrangements 13-9-28 Boilers fixed 26-6-28 Engines tried under steam 17-10-28

Main boiler safety valves adjusted 13 Sept '28 Thickness of adjusting washers P 1 7/8-8 1/2; C 1 8 1/2-8; D 1 8-9 1/2; E 1 8-9 1/2; F 1 8-9 1/2; G 1 8-9 1/2; H 1 8-9 1/2; I 1 8-9 1/2; J 1 8-9 1/2; K 1 8-9 1/2; L 1 8-9 1/2; M 1 8-9 1/2; N 1 8-9 1/2; O 1 8-9 1/2; P 1 8-9 1/2; Q 1 8-9 1/2; R 1 8-9 1/2; S 1 8-9 1/2; T 1 8-9 1/2; U 1 8-9 1/2; V 1 8-9 1/2; W 1 8-9 1/2; X 1 8-9 1/2; Y 1 8-9 1/2; Z 1 8-9 1/2

Rotor shaft, Material and tensile strength S.M. Steel 3 0 ton 27.6% Elong: Identification Mark LLOYD'S T.L. NO 4436-4437

Flexible Pinion Shaft, Material and tensile strength S.M. Steel 52.9 ton 25.4%; 56.8 ton 19.3% Identification Mark LLOYD'S T.L. NO 4438-4439

Pinion shaft, Material and tensile strength S.M. Steel 52.5 ton 22.7%; 51.1 ton 22.7% Identification Mark LLOYD'S T.L. NO 4440-4441

1st Reduction Wheel Shaft, Material and tensile strength S.M. Steel 45.3 ton 27.4%; 45.6 ton 26%; 45.6 ton 26% Identification Mark LLOYD'S T.L. NO 4442-4443

Wheel shaft, Material S.M. Steel Identification Mark LLOYD'S T.L. NO 1139/1143 Thrust shaft, Material S.M. Steel Identification Mark H.S. 14-3-28

Intermediate shafts, Material S.M. Steel Identification Marks H.S. 14-3-28 Tube shaft, Material — Identification Marks —

Screw shaft, Material S.M. Steel Identification Marks H.S. 14-12-27 Steam Pipes, Material Steel Test pressure 500

Date of test 25-7-28; 24-8-28; 27-8-28. Is an installation fitted for burning oil fuel No

Is the flash point of the oil to be used over 150°F. — Have the requirements of the Rules for carrying and burning oil fuel 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.) The vessel's machinery has been in accordance with the Society's rules approved plans and Secret letters. Material tested as required and workmanship good. The machinery was found in a good working condition during the trial trip on North Sea. I am of opinion that this vessel is eligible to be recorded in the Society's register book with the record of LLOYD'S L.M.C. 10-28 T.S. fitted with C.L.

The amount of Entry Fee ... £ 72.00  
Special ... £ 995.00  
Donkey Boiler Fee ... £  
Travelling Expenses (if any) £ 50.00

When applied for, 5/10 19-20  
When received, 10-1-29

Mr. G. G. G.  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE 23 OCT 1928  
Assigned + L.M.C. 10:28  
F. S. C.