

REPORT ON STEAM TURBINE MACHINERY.

No. 92230

Received at London 15 MAR 1935

pt. 4a.

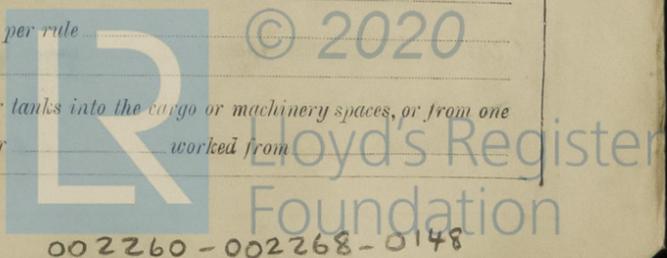
Date of writing Report *14/2/35* When handed in at Local Office *14/2/35* Port of *Walke - on - Lyne*
 No. in Survey held at *Walke - on - Lyne* Date, First Survey *3rd Dec/34* Last Survey *30 Jan 1935*
 Reg. Book. *Walke* on the *Low-pressure Bauer-Wach turbine for Hull.* (Number of Visits *15*)
 Tons ^{Gross} _{Net}
 Built at *Hull* By whom built *Amos & Smith* Yard No. *1468* When built *1935*
 Engines made at *Walke* By whom made *Swan Hunter, W R Smith* Engine No. *1468* When made *1935*
 Boilers made at *Hull* By whom made *Amos & Smith* Boiler No. *1468* When made *1935*
 Shaft Horse Power at Full Power *304* Owners *Walke* Port belonging to *Walke*
 Nom. Horse Power as per Rule *51* Is Refrigerating Machinery fitted for cargo purposes *No* Is Electric Light fitted *No*
 Trade for which Vessel is intended *General Cargo*

TEAM TURBINE ENGINES, &c.—Description of Engines *One L. Reschandt Bauer-Wach Turbine.*

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

TURBINE STAGING.	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							23 1/4"	396 1/4"	1			
2ND							34 "	418 "	1			
3RD							44 "	438 "	1			
4TH							54 "	458 "	1			
5TH							65 "	480 "	1			
6TH							75 "	500 "	1			
7TH							84 "	524 "	1			
8TH							100 "	550 "	1			
9TH												
10TH												
11TH												
12TH												

Shaft Horse Power at each turbine *H.P. — I.P. — L.P. 304* ✓ Revolutions per minute, at full power, of each Turbine Shaft *H.P. — I.P. — L.P. 4030* 1st reduction wheel *415* main shaft *116* ✓
 Rotor Shaft diameter at journals *H.P. — I.P. — L.P. 99.9 1/4"* Pitch Circle Diameter *1st pinion 111.985 1/2" 1st reduction wheel 110.185 1/2" 2nd pinion 201.342 1/2" main wheel 1191.434 1/2"* Width of Face *1st reduction wheel 110 1/4" main wheel 3140 1/4"* ✓
 Distance between centres of pinion and wheel faces and the centre of the adjacent bearings *1st pinion 112 3/4" 1st reduction wheel 196 3/4" 2nd pinion 268 3/4" 2nd reduction wheel 245 3/4"*
 Flexible Pinion Shafts, diameter *1st — 2nd —* Pinion Shafts, diameter at bearings *External 1st 99.9 1/4" 2nd 180 3/4" Internal 1st 202 1/2" 2nd —* diameter at bottom of pinion teeth *1st 109.94 1/2" 2nd 194.64 1/2"*
 Wheel Shafts, diameter at bearings *1st 200 1/4" diameter at wheel shroud, main 220 3/4" as approved.* Generator Shaft, diameter at bearings *1st 1030 1/2" main 1084 1/2"* Propelling Motor Shaft, diameter at bearings *—*
 Intermediate Shafts, diameter *as per rule — as fitted —* Thrust Shaft, diameter at collars *as per rule — as fitted 220 - 205 1/2"* 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 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. *—*
 If 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 *—* Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room *—*
 Main Water Circulating Pump Direct Bilge Suctions, No. and size *—* 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 *—*
 What pipes pass through the bunkers *—* How are they protected *—*
 What pipes pass through the deep tanks *—* 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 *—*
 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 *—*



002260 - 002268 - 0148

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 }

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. State the articles supplied:— *as per Society's Rules, attached list.* ✓

FOR SWAN, HUNTER & WIGHAM RICHARDSON, LTD

Geo. H. Wright.

The foregoing is a correct description,

Manufacturer

Dates of Survey while building

During progress of work in shops --	1934	Dec. 3. 7. 10. 14. 20. 28.	1935	Jan. 3. 11. 14. 16. 22. 24. 30.
	Total No. of visits 13			

Dates of Examination of principal parts—Casings 20. 12. 34 Rolors 28. 12. 34 Blading 28. 12. 34 Gearing 16. 1. 35.

Wheel shaft 16. 1. 35 Thrust shaft 16. 1. 35 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	Steel	37. 9 Tons per sq	Identification Mark	464 A.E. 16. 1. 35. S.A. 8.
1st Reduction Pinion Shaft, Material and tensile strength	Steel	43. 8 - do -	Identification Mark	469 A.E. 16. 1. 35. S.A. 8.
2nd Red wheel Pinion shaft, Material and tensile strength	Steel	32 - do -	Identification Mark	465 F.E. 16. 1. 35. S.A. 8.
1st Reduction Wheel Pinion, Material and tensile strength	Steel	36. 5 - do -	Identification Mark	4601 J.E. 16. 1. 35. S.A. 8.
Wheel shaft, Material and Identification Mark	-	-	Thrust shaft, Material	Steel Identification Mark: 16. 1. 35. S.A. 8.
Intermediate shafts, Material and Identification Marks	-	-	Tube shaft, Material and Identification Marks	-
Screw shaft, Material and Identification Marks	-	-	Steam Pipes, Material and 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 *yes.* If so, state name of vessel *Swan Hunter, W. R. Swan & Co. Ltd. S. K. Kingston Cornwall*

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

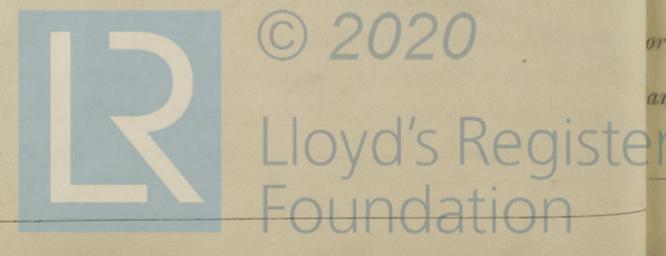
This low pressure Bauer-Wach exhaust turbine has been built under special survey in accordance with the Rules of the Society & the approved plans & has now been forwarded to Hull to be fitted on board a trawler.

The quality of the materials & the workmanship are good throughout.

The amount of Entry Fee ... £	When applied for,	14 FEB 1935
Special ... £	When received,	21. 2. 1935
23 rd Keen <i>Keen</i>		
Donkey Boiler Fee ... £ 3 : 8 : 0		
1/3 rd Hull <i>Hull</i>		
<i>to be charged at Hull</i>		

Fred O. Ferguson.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 15 MAR 1935**
 Assigned *See Hull 28. 45543*



Certificate (if required) to be sent to... (The Surveyors are requested not to write on or below the space for Committee's Minute.)