

(For Report on Turbines see Incl. Rept. 4869)

RETAILED

pt. 4a.

REPORT ON MACHINERY.

No. 5007.

Received at London Office *17th AUG. 1922*

Date of writing Report *19* When handed in at Local Office *9th Aug¹⁹ 22 Port of Manchester*

No. in Survey held at *3rd January 1922* Date, First Survey *27th June 1922* Last Survey
Reg. Book. *12* (Number of Visits)

on the *Rotating Parts of Double Reduction Gear for Swan Hunter's No 1130*

Tons } Gross
 } Net

Master _____ Built at _____ By whom built _____ When built _____
Engines made at *Newcastle* By whom made *Swan Hunter & Wigham Richardson Ltd.* when made _____
Boilers made at _____ By whom made _____ when made _____
Registered Horse Power _____ Owners _____ Port belonging to _____
Shaft Horse Power at Full Power *3200* Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

URBINE ENGINES, &c.—Description of Engines *Rateau Turbines and Double Red. Gear* No. of Turbines *2*
Diameter of Rotor Shaft Journals, H.P. L.P. Diameter of Pinion Shaft *1st Red. 3 1/2" 2nd Red. 5 1/4"*
Diameter of Journals *1st Red. 6" 2nd Red. 10"* Distance between Centres of Bearings *1st R. 17 1/4" 2nd R. 19 1/2"* Diameter of Pitch Circle *1st R. 679411" 2nd R. 116491"*
Diameter of Wheel Shaft *1st R. 10" 2nd R. 19"* Distance between Centres of Bearings *1st R. 3 1/4" 2nd R. 5 1/4"* Diameter of Pitch Circle of Wheel *1st R. 431002" 2nd R. 788677"*
Width of Face *1st R. 20" 2nd R. 40"* Diameter of Thrust Shaft under Collars _____ Diameter of Tunnel Shaft _____ as per rule _____ as fitted _____
No. of Screw Shafts _____ Diameter of same _____ as per rule _____ as fitted _____ Diameter of Propeller _____ Pitch of Propeller _____
No. of Blades _____ State whether Moveable _____ Total Surface _____ Diameter of Rotor Drum, H.P. _____ L.P. _____ Astern _____
Thickness at Bottom of Groove, H.P. _____ L.P. _____ Astern _____ Revs. per Minute at Full Power, Turbine *3126* Propeller *72.9*

ARTICULARS OF BLADING.

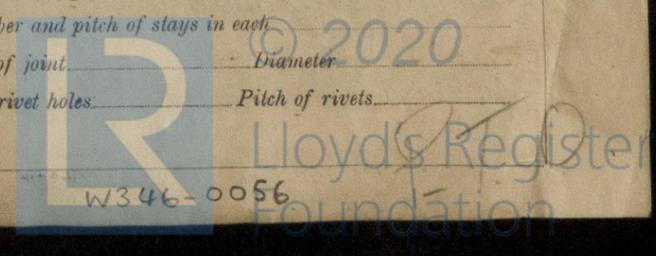
	H. P.			L. P.			ASTERN.		
	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.	HEIGHT OF BLADES.	DIAMETER AT TIP.	NO. OF ROWS.
1ST EXPANSION									
2ND "									
3RD "									
4TH "									
5TH "									
6TH "									
7TH "									
8TH "									

No. and size of Feed pumps _____
No. and size of Bilge pumps _____
No. and size of Bilge suction in Engine Room _____
In Holds, &c. _____

No. of Bilge Injections _____ sizes _____ Connected to condenser, or to circulating pump _____ Is a separate Donkey Suction fitted in Engine Room & size _____
Are all the bilge suction pipes fitted with roses _____ Are the roses in Engine room always accessible _____
Are all connections with the sea direct on the skin of the ship _____ Are they Valves or Cocks _____
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates _____ Are the Discharge Pipes 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 are carried through the bunkers _____ How are they protected _____
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times _____
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges _____
Is the Screw Shaft Tunnel watertight _____ Is it fitted with a watertight door _____ worked from _____

BOILERS, &c.—(Letter for record)

Manufacturers of Steel _____
Total Heating Surface of Boilers _____ Is Forced Draft fitted _____ No. and Description of Boilers _____
Working Pressure _____ Tested by hydraulic pressure to _____ Date of test _____ No. of Certificate _____
Can each boiler be worked separately _____ Area of fire grate in each boiler _____ No. and Description of Safety Valves to _____
each boiler _____ Area of each valve _____ Pressure to which they are adjusted _____ Are they fitted with easing gear _____
Smallest distance between boilers or uptakes and bunkers or woodwork _____ Mean dia. of boilers _____ Length _____ Material of shell plates _____
Thickness _____ Range of tensile strength _____ Are the shell plates welded or flanged _____ Descrip. of riveting: cir. seams _____
long. seams _____ Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____
Per centages of strength of longitudinal joint _____ rivets _____ Working pressure of shell by rules _____ Size of manhole in shell _____ plates _____
Size of compensating ring _____ No. and Description of Furnaces in each Boiler _____ Material _____ Outside diameter _____
Length of plain part _____ top _____ crown _____ Description of longitudinal joint _____ No. of strengthening rings _____ bottom _____ bottom _____
Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
Pitch of stays to ditto: Sides _____ Back _____ Top _____ If stays are fitted with nuts or riveted heads _____ Working pressure by rules _____
Material of stays _____ Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ End plates in steam space _____
Material _____ Thickness _____ Pitch of stays _____ How are stays secured _____ Working pressure by rules _____ Material of stays _____
Diameter at smallest part _____ Area supported by each stay _____ Working pressure by rules _____ Material of Front plates at bottom _____
Thickness _____ Material of Lower back plate _____ Thickness _____ Greatest pitch of stays _____ Working pressure of plate by rules _____
Diameter of tubes _____ Pitch of tubes _____ Material of tube plates _____ Thickness: Front _____ Back _____ Mean pitch of stays _____
Pitch across wide water spaces _____ Working pressures by rules _____ Girders to Chamber tops: Material _____ Depth and _____
thickness of girder at centre _____ Length as per rule _____ Distance apart _____ Number and pitch of stays in each _____
Working pressure by rules _____ Steam dome: description of joint to shell _____ % of strength of joint _____ Diameter _____
Thickness of shell plates _____ Material _____ Description of longitudinal joint _____ Diameter of rivet holes _____ Pitch of rivets _____
Working pressure of shell by rules _____ Crown plates: Thickness _____ How stayed _____



SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____
Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____
Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

IS A DONKEY BOILER FITTED? _____ If so, is a report now forwarded? _____

SPARE GEAR. State the articles supplied:— 1- primary pinion and flexible shaft. 1- high speed flexible Coupling.
3- high speed pinion bearing bushes. 3- secondary pinion bearing bushes. Spare bolts for pinion bearing

The foregoing is a correct description,
Simpson, Inc. P.O. Manufacturer.
METROPOLITAN-VICKERS ELECTRICAL CO. LTD.

Dates of Survey while building: During progress of work in shops - - 3/1, 3/11, 3/11, 4/1, 25/1, 7/2, 10/2, 20/2, 8/3, 23/3, 3/5, 24/6, 27/6.
During erection on board vessel - - -
Total No. of visits _____ Is the approved plan of main boiler forwarded herewith _____

Dates of Examination of principal parts—Casings _____ Rotors _____ Blading _____ Gearing No above
Rotor shaft _____ Thrust shaft _____ Tunnel shafts _____ Screw shaft _____ Propeller _____
Stern tube _____ Steam pipes tested _____ Engine and boiler seatings _____ Engines holding down bolts _____
Completion of pumping arrangements _____ Boilers fixed _____ Engines tried under steam _____
Main boiler safety valves adjusted _____ Thickness of adjusting washers _____
Material and tensile strength of Rotor shaft _____ Identification Mark on Do. _____
Material and tensile strength of Flexible Shaft Nickel Steel 1st Rd. 50.0 553.5. 2nd Rd. 50.2 553.0 Identification Mark on Do. 1st Rd. P. A. Star 2nd Rd. P. B. Star
Material and tensile strength of Pinion shaft Nickel Steel 42.0 5 47.5 10m/A Identification Mark on Do. 1st Rd. P. A. Star 2nd Rd. P. B. Star
Material of Wheel shaft Mild steel Identification Mark on Do. A Material of Thrust shaft _____ Identification Mark on Do. _____
Material of Tunnel shafts _____ Identification Marks on Do. _____ Material of Screw shafts _____ Identification Marks on Do. _____
Material of Steam Pipes _____ Test pressure _____
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 Section 49 of the Rules been complied with _____

Is this machinery a duplicate of a previous case Yes If so, state name of vessel Swan Hunter's No 1126 (Mch. Ref. 4903)

General Remarks (State quality of workmanship, opinions as to class, &c. These shafts, pinions and wheels for double reduction gearing have been constructed under special survey and the materials tested in accordance with the Society's Rules. The materials and workmanship, so far as could be seen are sound and good. These rotating parts have been forwarded to Messrs Swan Hunter & Wigham Richardson, Newcastle for assembling in gear cases and completing for this job No. 1130. (For Report on Turbines for above ship see Mch. Ref. 4869)
Mark on Main Wheel Shaft

Lloyds
27-6-22
TEST No. 926
A 2936-5

The amount of Entry Fee ... £ As from 10/11/22 When applied for, _____
Special ... £ 9 : : : : : _____
Donkey Boiler Fee ... £ : : : : : _____
Travelling Expenses (if any) £ : : : : : _____
When received, 13.10.22

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

Committee's Minute FRI. 6 OCT. 1922
Assigned See Nwc. No 75999

Date of writing Report _____
No. in Survey he Reg. Book. _____
on the H. _____
Master _____
TOK PARTS _____
Engines made at _____
Boilers made at _____
Registered Horse _____
Shaft Horse Power _____
TURBINE EN _____
Diameter of Rotor Sho _____
Diameter of Journals _____
Diameter of Wheel Sha _____
Width of Face _____
No. of Screw Shafts _____
No. of Blades _____
Thickness at Bottom of _____
PARTICULAR _____
WHEEL _____
1ST EXPANSON _____
2ND " _____
3RD " _____
4TH " _____
5TH " _____
6TH " _____
7TH " _____
8TH " _____
No. and size of Feed _____
No. and size of Bilge _____
No. and size of Bilge _____
No. of Bilge Injections _____
Are all the bilge suction _____
Are all connections w _____
Are they fixed suffici _____
Are they each fitted w _____
What pipes are carrie _____
Are all Pipes, Cocks, _____
Are the Bilge Suction _____
Is the Screw Shaft T _____
BOILERS, &c. _____
Total Heating Su _____
Working Pressure _____
Can each boiler be wo _____
each boiler _____
Smallest distance bet _____
Thickness _____
long, seams _____
Per centages of streng _____
Size of compensating _____
Length of plain part _____
Working pressure of _____
Pitch of stays to diff _____
Material of stays _____
Material _____
Diameter at smallest _____
Thickness _____
Diameter of tubes _____
Pitch across wide w _____
thickness of girder a _____
Working pressure b _____
Thickness of shell pl _____
Working pressure of _____

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