

Swan Hunter, Tigham, Richardson & Co. Ltd. s/s 1026

REPORT ON MACHINERY

No. 74485

Received at London Office JUL 12 1927

Date of writing Report: Sept 20 1920 When handed in at Local Office: 27 June 1921 Port of: NEWCASTLE ON TYNE
 Date, First Survey: 19 Feb 1920 Last Survey: 28 Sept 1920
 (Number of Visits: 7)

Survey held at: Walkend
 Name of vessel: Steel Screw Steamer "MIDDLESEX" s/s 1026
 Built at: Walker By whom built: Swan Hunter, Tigham, Richardson & Co. Ltd.
 Engines made at: Manchester By whom made: Vickers Metropolitan Ltd & Swan Hunter, Tigham, Richardson & Co. Ltd.
 Boilers made at: Walker on Tyne By whom made: Swan Hunter, Tigham, Richardson & Co. Ltd.
 Registered Horse Power: _____ Owners: Federal Steam Nav Co Ltd Port belonging to: _____
 Shaft Horse Power at Full Power: 6350 Is Refrigerating Machinery fitted for cargo purposes: Yes Is Electric Light fitted: Yes

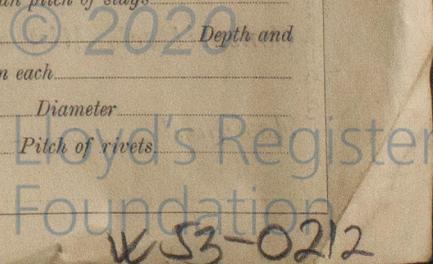
Particulars of parts supplied by Parsons Marine Turbine Co. Ltd. - Walkend - order no 7924
 Description of Engines: see Manchester report 4651 No. of Turbines: two
 Diameter of Rotor Shaft Journals, H.P.: _____ L.P.: _____ Diameter of Pinion Shaft: 6 dia
 Diameter of Journals: 6" Distance between Centres of Bearings: _____ Diameter of Pitch Circle: Pinion 9.269 - 2nd Red Pinion 21.485
 Diameter of Wheel Shaft: 1 1/2" Distance between Centres of Bearings: _____ Diameter of Pitch Circle of Wheel: 1st Red 6.227 2nd Red 10.48
 Width of Face: _____ Diameter of Thrust Shaft under Collars: _____ Diameter of Tunnel Shaft: _____ as per rule _____ as fitted _____
 No. of Screw Shafts: one 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: _____ Propeller: _____

PARTICULARS OF BLADING. Gearing - Marking of Forgings

	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.
EXPANSION									
3/20-4/20									
4/20-4/20									
4/20-4/20									
4/20-4/20									
4/20-4/20									
4/20-4/20									
4/20-4/20									
4/20-4/20									

and size of Feed pumps _____
 and size of Bilge pumps _____
 and size of Bilge suction in Engine Room _____
 In Holds, &c. _____
 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 _____
 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 _____

MANUFACTURERS, &c. (Letter for record) _____ Manufacturers of Steel _____
 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 _____
 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 _____
 Rivet seams: _____ Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Lap of plates or width of butt straps _____
 Percentages of strength of longitudinal joint: _____ rivets _____ Working pressure of shell by rules _____ Size of manhole in shell _____ plates _____
 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 _____ Thickness of plates _____ bottom _____
 Working pressure of furnace by the rules _____ Combustion chamber plates: Material _____ Thickness: Sides _____ Back _____ Top _____ Bottom _____
 Thickness 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 _____



W 53-0212

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:— _____

The foregoing is a correct description,

Manufacturer. _____

28/9.20

Dates of Survey while building
 (During progress of work in shops --)
 (During erection on board vessel ---)
 Total No. of visits

Messrs Parsons Works Wallsend 19/2/20 - 19/3/20 - 27.5.20, 24.8.20 - 8/9/20 - 10/9/20

7

Is the approved plan of main boiler forwarded herewith

" " " donkey " " "

Dates of Examination of principal parts—Casings ✓ Rotors ✓ Blading ✓ Gearing ✓

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 Pinion shaft Nickel Steel. 40/45 10/10" ✓ Identification Mark on Do. See below

Material of Wheel shaft 5m Steel Identification Mark on Do. L.G.S. ✓ Material of Thrust shaft Steel. Identification Mark on Do. L.G.S. 3/2

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 No. 90 If so, state name of vessel _____

General Remarks (State quality of workmanship, opinions as to class, &c., S.H. & W.R. Sp. 1026 - Parsons order no 7924 -)

Mark on Forgings - HP 1st Reduction Pinion T626. F 680. Lloyd's L.G.S. 9-20
 " " " LP 1st " " " 680E. 1660 Lloyd's L.G.S. 9-20
 " " " Spare " " " 1735. 107D. Lloyd's L.G.S. 9-20
 " " " HP 2nd Reduction Pinion. T 1495. 4163 Lloyd's L.G.S. 9-20
 " " " LP 2nd " " " T 1964. 1725 Lloyd's L.G.S. 9-20

The above gearing, machined by Messrs Parsons Steam Turbine Coy. Ltd. to the order of Messrs Swan Hunter and Coy. Ltd. to be provided for erecting at the Neptune works. The gearing, and material found good and efficient. A further report will be made on the work done by Swan Hunter, Righam Richardson & Co.

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

Leonard G. Shallerons.
 Engineer Surveyor to Lloyd's Register of Shipping.

TUE. 19 JUL. 1921

Committee's Minute

Assigned



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