

REPORT ON MACHINERY

No. 10708
THU. SEP. 16 1920Date of writing Report 25th June 1920 When handed in at Local Office 10 20 Port of MiddlesbroughNo. in Survey held at Hartlepool & Middlesbrough Date, First Survey 27th June 1918 Last Survey 20th June 1920
Reg. Book. on the (N1) Turbine Engines S.S. DALMAZIA ex War Picket (S.S. N° 16) (Number of Visits 3) Tons { Gross 1920
NetMaster Built at Haverhill By whom built Messrs. Furness S. B. & Co. Ltd When built 1920
Engines made at Hartlepool By whom made Messrs. Richardson & Neale when made 1920
Boilers made at Renfrew By whom made Messrs. Babcock & Wilcox (412) when made 1920
Registered Horse Power Owners Port belonging to
Shaft Horse Power at Full Power 2900 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

TURBINE ENGINES, &c. Description of Engines Double reduction geared turbines No. of Turbines Two

Diameter of Rotor Shaft Journals, H.P. 4 1/2" L.P. 5 1/2" Diameter of Pinion Shaft 1 1/2" Union 5 1/2" between helicals
Diameter of Journals 1 1/2" - 4 1/2" Distance between Centres of Bearings 1 1/2" - 3" Diameter of Pitch Circle 1 1/2" - 6 3/4"
Diameter of Wheel Shaft 1 1/2" - 9 1/2" Distance between Centres of Bearings 1 1/2" - 2 1/2" Diameter of Pitch Circle of Wheel 1 1/2" - 13 3/4"
Width of Face 1 1/2" - 2 1/2" Diameter of Thrust Shaft under Collars 1 1/2" Diameter of Tunnel Shaft as per rule 1 1/2" - 12 1/2"
No. of Screw Shafts One Diameter of same as per rule 1 1/2" - 8 1/2" Diameter of Propeller 1 1/2" - 9" Pitch of Propeller 1 1/2" - 6"
No. of Blades 4 State whether Moveable Solid Total Surface 100 sq ft Diameter of Rotor Drum, H.P. 20 1/2" diam. P. 27 1/2" diam. (H.P. 28 1/2" L.P. 36")
Thickness at Bottom of Groove, H.P. Solid L.P. Solid Astern Discs Revs. per Minute at Full Power, Turbine 3187 Propeller 71

PARTICULARS OF BLADING.

H.P. P.C.D. 24

L.P. P.C.D. 36

ASTERN (P.C.D. = 30) H.P.
(P.C.D. = 39) L.P.

	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	3 1/2" + 1 1/2"	24 1/2" + 25 1/2"	2	2 3/4"	38 3/4"	1	7 1/2" + 2 1/2" + 2 1/2"	30 1/2" + 31 1/2" + 32 1/2"	4
2ND	4 1/2" + 1 1/2"	24 1/2" + 25 1/2"	2	3"	39"	1	i.e. four rows of buckets on one disc one of each length for H.P. shaft		
3RD	1 1/2"	25 1/2"	1	3 3/4"	39 3/4"	1			
4TH	1 1/2"	25 1/2"	1	4 1/2"	40 1/2"	1			
5TH	2"	26"	1	6 1/2"	42 1/2"	1	1 1/2" + 3 1/2" + 4 1/2"	40 1/2" + 42 1/2" + 43 1/2"	3
6TH	2 1/2"	26 1/2"	1	7 1/2"	43 1/2"	1	one of each length for L.P. shaft		
7TH	2 1/2"	26 1/2"	1	7 1/2"	43 1/2"	1			
8TH	—	—	—	7 1/2"	43 1/2"	1			

No. and size of Feed pumps 2 @ 11 1/2" x 8" x 24"
No. and size of Bilge pumps 1 @ 7" x 8" x 12" and 1 @ 10 1/2" x 14" x 24"
No. and size of Bilge suction in Engine Room 1 @ 3 1/2" and 2 @ 2 1/2" in Engine room well

Aft Holds 4 @ 3 1/2" Tunnel well 1 @ 2 1/2" In Holds, &c. Fore Holds 6 @ 3 1/2" Deep Tank 2 @ 3 1/2"

No. of Bilge Injections 1 size 1 1/2" Connected to condenser, or to circulating pump Centrifugal Is a separate Donkey Suction fitted in Engine Room & size 1 @ 8" 2 @ 3 1/2"

Are all the bilge suction pipes fitted with roses Yes Inlets + Donkey Suction on Reservoir Are the roses in Engine room always accessible Yes

Are all connections with the sea direct on the skin of the ship Remains on skin Are they Valves or Cocks Both

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Below

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

What pipes are carried through the bunkers Suctions to Forward Holds How are they protected Close Ceiling

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes

Is the Screw Shaft Tunnel watertight See Report on Hulls Is it fitted with a watertight door Yes worked from Shelter Deck

OILERS, &c. (Letter for record S) Manufacturers of Steel D. Colville & Son Ltd

Total Heating Surface of Boilers 9636 sq ft Forced Draft fitted Yes No. and Description of Boilers 3 Babcock & Wilcox

Working Pressure 200 lb Tested by hydraulic pressure 400 lb Steam Drums Sections 490 lb Date of test 17/8/20 No. of Certificate 6150 (Nalk)

Can each boiler be worked separately Yes Area of fire grate in each boiler 85.75 No. and Description of Safety Valves to

each boiler 2 direct Spring Area of each valve 9.62 sq in Pressure to which they are adjusted 205 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 4 1/4" Mean dia. of boilers 4'-0" Length 15'-1 1/4" Material of shell plates Steel

Thickness 9/16" Range of tensile strength 28.5-32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams DR Lap

Long. seams TR. SB. Diameter of rivet holes in long. seams 3/32" Pitch of rivets 3.537" Lap of plates or width of butt straps 7 1/2"

Percentages of strength of longitudinal joint rivets 76.7 Working pressure of shell by rules 238 Size of manhole in shell 15" x 11"

Size of compensating ring 28 1/4" x 22 1/2" x 7/8" No. and Description of Furnaces in each Boiler None Material Outside diameter

Length of plain part top Thickness of plates crown Description of longitudinal joint No. of strengthening rings

Working pressure of furnace by the rules Combustion chamber plates: Material Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top Bottom 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 Steel Thickness 13/16" Pitch of stays How are stays secured Working pressure by rules Material of Front plates at bottom

Diameter at smallest part Area supported by each stay Working pressure by rules Material of Front plates at bottom

Thickness 13/16" Material of Lower back plate Steel Thickness 1/2" Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes 1 3/4" Pitch of tubes 2 3/4" - 2 1/2" 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 None % of strength of joint Diameter

Thickness of shell plates 3/4" Material Steel Description of longitudinal joint Weld Diameter of rivet holes Pitch of rivets

Working pressure of shell by rules Crown plates: Thickness How stayed

SUPERHEATER. Type *None* 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? *See Sla Report 27753* *Yes* If so, is a report now forwarded? *Yes (Sla No 27753)*

SPARE GEAR. State the articles supplied:— *2 Bolt nuts (or blind nuts) for each size of Rotor pinion and gear wheel bearings. one set of Coupling bolts for each size used. 1/20 of total number of bolt nuts (or blind nuts) for each turbine casing joint. 2 Thermometers for Oil Circulating System. one set of bearing brushes for Rotor pinion and Wheel shafts. one set of Packing for each gland. sufficient pads for Michell thrust block. one set of pads for Michell type Turbine adjusting block. 1/2 set of feed pump Valves. 1/2 set of Lubricating pump Valves. spare Lubricating pump Complete. one escape Valve spring for each size used. a quantity assorted bolt nuts. blind bars & plates. one cast Iron propeller and additional spare parts for N.I. as per Specification*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building *During progress of work in shops -- Oct. 1. 1920*
During erection on board vessel -- Sept.
Total No. of visits *34*

Is the approved plan of main boiler forwarded herewith

Dates of Examination of principal parts—Casings *See* Rotors *HPL Report* Blading *Nº 15785* Gearing *Man Rpt Nº 45*

Rotor shaft *HPL Report* Thrust shaft *25/11/18* Tunnel shafts *30/1/20* Screw shaft *30/7/19* Propeller *22/6/20*

Stern tube *19/4/20* Steam pipes tested *23/6/19* Engine and boiler seatings *27/4/20* Engines holding down bolts *5/8/20*

Completion of pumping arrangements *23/8/20* Boilers fixed *11/8/20* Engines tried under steam *21/8/20*

Main boiler safety valves adjusted *23/8/20* Thickness of adjusting washers *Pr Boiler Pr 3/4 SY 1/2 Cuts 1/2 Pr 1/2 SY 1/2 SL 1/2 Pr 1/2*

Material and tensile strength of Rotor shaft *S.M. Steel 34.2 tons* Identification Mark on Do. *HP (29) 4P (31)*

Material and tensile strength of Pinion shaft *High speed Nickel Chrome steel 46.4 tons* Identification Mark on Do. *40 & 41*

Material of Wheel shaft *Forged mild steel* Identification Mark on Do. *286* Material of Thrust shaft *Steel* Identification Mark on Do. *105 JH*

Material of Tunnel shafts *Steel* Identification Marks on Do. *2927-EWR* Material of Screw shafts *Steel* Identification Marks on Do. *376 F*

Material of Steam Pipes *Lap welded W. Iron* Test pressure *600 lbs*

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 Section 49 of the Rules been complied with *✓*

Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *War Project*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery of this Vessel has been built under Special survey, see WHPL report Nº 15786 & Sla Rpt Nº 29850, and has been Satisfactorily fitted on board by Messrs Richardson Metzger & Co. The Material and Workmanship are of The Engines, Boilers and Auxiliary Machinery have been examined under full working conditions, and found satisfactory, and renders the Vessel eligible in our opinion to have the notation of SLMC-9.20 in the Register Book subject to the Water Tube Boilers being surveyed annually.*

This Vessel is fitted with Electric light and Wireless

The amount of Entry Fee ... £ : : When applied for, *from London*
Special ... £ *60-10-6* *22.9.1920*
Donkey Boiler Fee ... £ : : When received, *19/10/20*
Travelling Expenses (if any) £ : : *Ebbw*

Wm Morrison & C. E. Wilks.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

TUE. SEP. 21 1920

+ L.M.C. 9.20
F.D.