

REPORT ON STEAM TURBINE MACHINERY.

Received at London Office

Date of writing Report

19

When handed in at Local Office

19

Port of

Liverpool

No. in Survey held at

Birkenhead

Date, First Survey

14th March/28

Last Survey

3rd April 1929

Reg. Book.

on the

Twin S.S. 'Lady Rodney'

(Number of Visits)

136

Tons

Gross 7680

Net 4936

Built at

Birkenhead

By whom built

Cammell Laird & Co Ltd

Yard No.

944

When built

1929

Engines made at

Birkenhead

By whom made

Cammell Laird & Co Ltd

Engine No.

945

When made

1929

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co Ltd

Boiler No.

944

When made

1929

Shaft Horse Power at Full Power

5400

Owners

Canadian National S.S. Co Ltd

Port belonging to

Montreal

Nom. Horse Power as per Rule

989/1094

Is Refrigerating Machinery fitted for cargo purposes

Yes

Is Electric Light fitted

Yes

STEAM TURBINE ENGINES, &c.—Description of Engine

Single Reduction Geared

No. of Turbines

Ahead 2 H.P. 2 L.P.

Astern 2 (in L.P. shafts)

Direct coupled, single or double reduction geared to

Two

propelling shafts.

No. of primary pinions to each set of reduction gearing

2

direct coupled to

✓

phase

periods per second, Alternating Current Generator rated

✓

Kilowatts

✓

Volts at

✓

revolutions per minute; for supplying power for driving

✓

Propelling Motors.

Propelling Motors, Type

✓

rated

✓

Kilowatts

✓

Volts at

✓

revolutions per minute.

Direct coupled, single or double reduction geared to

✓

propelling shafts.

ARTICULARS OF TURBINE BLADING.

	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.
1 st EXPANSION	1 7/8"	19 7/8"	12	/	/	/	1 9/8"	2 5 1/2"	4	1 9/16"	2 7 7/8"	2
2 nd	1 3/8"	20 1/2"	11				2 1/4"	2 6 3/4"	4	1 5/8"	2 9 1/4"	2
3 rd	1 1/4"	21 1/8"	10				2 7/8"	2 8"	4	2 5/16"	2 10 5/8"	1
4 th	2 1/8"	22"	10				1 7/8"	3 7 3/4"	2	2 3/4"	2 11 1/2"	2
5 th	2 5/8"	23"	10				2 5/8"	3 9 1/4"	2			
6 th							3 1/4"	3 10 1/2"	1			
7 th							3 9/8"	3 11 1/4"	1			
8 th							4 1/2"	4 1"	1			
							5 1/2"	4 3"	3			

Shaft Horse Power at each turbine

1350

Revolutions per minute, at full power, of each Turbine Shaft

2430

1st reduction wheel

✓

Main shaft

174

Pitch Circle Diameter, 1st pinion

6.4144"

2nd pinion

✓

1st reduction wheel

✓

main wheel

125.8557

Width of Face, 1st reduction wheel

✓

main wheel

33"

Distance between centres of pinion and wheel faces and the centre of the adjacent bearings,

1st pinion

12 1/2"

2nd pinion

✓

1st reduction wheel

✓

main wheel

17 1/4"

Flexible Pinion Shafts, diameter 1st

✓

2nd

✓

Pinion Shafts, diameter at bearings

External

1st

5"

Internal

1 1/2"

2nd

✓

diameter at bottom of teeth of pinion 1st

5.8378"

2nd

✓

Wheel Shafts, diameter at bearings, 1st

✓

main

14 1/2"

diameter at wheel shroud, 1st

✓

main

✓

Generator Shafts, diameter at bearings

✓

Propelling Motor Shafts, diameter at bearings

✓

Main Shafting, diameter of Tunnel Shafting

as per rule

11.2"

as fitted

11 1/2"

diameter of Thrust Shafting

as per rule

11 3/4"

as fitted

11 3/4"

Diameter of Screw Shaft

as per rule

12.4"

as fitted

12 3/4"

Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Yes

Is the after end of the liner

made watertight in the propeller boss

Yes

If the liner is in more than one length are the joints burned

one length

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

Continuous fit

If two liners are fitted, is the

shaft lapped or protected between the liners

✓

Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently

lubricated

no

Length of Stern Bush

4' 10 1/8"

Diameter of Propeller

14' 0"

Pitch of Propeller

13' 6"

No. of Blades

4

State whether Moveable

Immovable

Total Surface

64

square feet. If Single Screw, are

arrangements made so that steam can be led direct to the L.P. Turbine, and either the H.P. or I.P. Turbine can exhaust direct to the Condenser

Twin screw

No. of Turbines fitted with astern wheels

2

L.P.

Total number of power driven Main and Auxiliary Pumps

5

No. and size of Feed Pumps

2 Main 13 1/2" x 10" x 24"

How driven

Indep Steam

No. and size of Pumps connected to the Main Bilge Line

1 - 5" x 5" x 6" stroke

2 - 9" x 11" x 10"

2 - 9 1/2" x 8" x 8"

How driven

Steam - duplex

No. and size of Ballast Pumps

1 - 9" x 4" x 10" stroke

No. and size of Lubricating Oil Pumps, including

Spare Pump

3 - 8" x 7" x 18"

Are two independent means arranged for circulating water through the

Oil Cooler

Yes

connected to both Main Bilge Pumps and Auxiliary Bilge Pumps;—In Engine and Boiler Room

5 R2-3", 3 R2-3"

well 1-3"

in Holds, etc.

No. and size of suction

N1-203", N2-203 1/2"

N3-203", N4-2-3" supply

No. and size of Main Water Circulating Pump Bilge Suctions

2 - 12" dia

No. and size of Donkey Pump Direct Suctions

to the Engine Room Bilges

2 - 5"

✓

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes

Yes

✓

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

Yes

✓

Are all connections with the sea direct on the skin of the ship

Yes

✓

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

none

✓

Is a Report on Main Boilers now forwarded? *Yes.*

Is a Donkey Boiler fitted? *No*

If so, is a report now forwarded? *✓*

Plans. Are approved plans forwarded herewith for Shafting
(If not state date of approval)

with of 'Lady Somers'

Main Boilers

Auxiliary Boilers

Donkey Boilers

Spare Gear. State the articles supplied:—

As per attached list.

The foregoing is a correct description.
CAMMELL LAIRD AND COMPANY LIMITED.

Manufacturer.

LOCAL SECRETARY.

1928. Mar 14. 22. May 2. 9. 10. 21. 22. June 4. 14. 19. 21. 25. 26. 27. 28. 29. July 4. 13. 16. 17. 19. 23. 25. 26. Aug 2. 14. 20. 21. 28. 30. 31. Sept 4. 5. 6. 7. 8. 10. 11. 12. 13. 14. 15. 17. 18. 19. 20. 21. 24. 25. 26. 28. 29. Oct 1. 5. 9. 11. 12. 16. 17. 24. 25. 26. 29. 31. Nov 1. 2. 5. 6. 7. 8. 11. 13. 14. 15. 17. 18. 20. 21. 31. Jan 2. 4. 7. 10. 11. 12. 14. 15. 17. 21. 22. 23. 24. 25. 26. 30. 31. Feb 1. 4. 5. 6. 7. 8. 11. 13. 21. 26. 27. Mar 1. 4. 5. 6. 7. 12. 13. 18. 19. 20. 22. 28. Apr 3.

Dates of Examination of principal parts—Casings *25/7/28 24/9/28 31/10/28* Rotors *25/7/28 16/11/28 29/11/28* Blading *31/10/28 5/12/28 16/11/28* Gearing *4/9/28 29/11/28*

Wheel shaft *27/8/28 5/7/28* Thrust shaft *10/9/28* Tunnel shafts *16/10/28* Screw shaft *24/9/28 5/10/28* Propeller *29/11/28*

Stern tube *16/11/28 29/11/28* Engine and boiler seatings *9/1/29* Engines holding down bolts *24/3/29*

Completion of pumping arrangements *18/3/29* Boilers fired *6/2/29* Engines tried under steam *22/3/29*

Main boiler safety valves adjusted *18/3/29* Thickness of adjusting washers *3/8"*

Material and tensile strength of Rotor shaft *forged steel 34-38 tons* Identification Mark on Do. *358*

Material and tensile strength of Flexible Pinion Shaft *✓* Identification Mark on Do. *✓*

Material and tensile strength of Pinion shaft *nickel steel 40 tons* Identification Mark on Do. *285 319*

Material and tensile strength of 1st Reduction Wheel Shaft *✓* Identification Mark on Do. *176*

Material of Wheel shaft *Steel* Identification Mark on Do. *178 178* Material of Thrust shaft *Steel* Identification Mark on Do. *285 28*

Material of Tunnel shafts *Steel* Identification Marks on Do. *342 347 377* Material of Screw shafts *Steel* Identification Marks on Do. *397 28*

Material of Steam Pipes *Solid drawn steel* Test pressure *660 lb* Date of test *31/10/28 5/11/28 7/11/28 14/11/28*

Is an installation fitted for burning oil fuel *Yes* Is the flash point of the oil to be used over 150°F. *Yes*

Have the requirements of the Rules for carrying and burning oil fuel been complied with *Yes*

Is this machinery a duplicate of a previous case *Yes* If so, state name of vessel *S.S. 'Lady Somers'*

General Remarks (State quality of workmanship, opinions as to class, &c.)
The Machinery of this vessel has been constructed under special Survey, and is in accordance with the Rules and the approved plans. It was examined under full working conditions during sea trials, and found satisfactory, and in my opinion for classification in Register book with restriction of 4 M.C. 4.29. Fitted for oil fuel 4.29 F.P. above 150°F.

It is submitted that this vessel is eligible for THE RECORD. *4.29. C.L.F.D. "Fitted for Oil Fuel." F.P. above 150°F*
4. Steam Turbines. S.R. geared to two screw shafts.

The amount of Entry Fee *£ 6.0.0* When applied for, *19 APR 1929*

Special ... *£ 127.7.0*

Donkey Boiler Fee ... *£ ✓* When received, *18.5.1928*

Travelling Expenses (if any) *£ ✓*

J. S. Milton
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *LIVERPOOL 19 APR 1929*
+ 4 M.C. 4.29. Ch.
Fitted for oil fuel 4.29.
T.P. above 150°F.
Elec. light
Ref: machly

Assigned