

Rpt. 9

4 MAR 1959

Date of writing report 16. 2. 59.

Received London

Port Liverpool.

No. 151190

Survey held at Birkenhead.

No. of visits 22

First date 16. 12. 58.

Last date 2/2/59

REPORT OF PERIODICAL SURVEYS & REPAIRS OF MACHINERY

No. in R.B. 83013. Name M.V. "TROCHISCUS" S.S. Gross tons 10685 Date of build 1944

Owners Shell Petroleum Co. Ltd. Managers Port of Registry London

Engines made 1944 By General Electric Co. Type Steam turbine connected to elec. motor & sc. shaft

No. of Main Engines 2 No. of Screws 2 No. of Main Boilers 2WTB W.P. 500lb. Spt464lb

No. of Aux./Donkey Boilers - W.P. -

Surveyed Afloat or in Dry Dock Both. Nature of Survey M.B.S. C.S. & Dkg.

Was Damage Report issued? No. Int. Cert. Yes.

Last Report (For Head Office only)

Hull		Machinery	
100A1	3,58	LMC	CS 1,57
SS Bkn.	1,57	BS	M 12,57
		TS	CL 11,56
carrying petroleum in bulk		s.p.s.	11,56

The condition of any of the following items is to be described as "good" only when the part has been examined, found or placed in good condition, and is considered to be acceptable until the due date of the next Periodical Examination. Where it is considered that re-examination or repairs should be effected before the due date of the next Periodical Examination a distinguishing mark thus † should be inserted against the item and the circumstances and action recommended described fully under "defects and repairs". At part or complete Special Surveys those items which are not applicable to the ship should be cancelled with a black line; this need not be done when the machinery is on a continuous survey basis. When any part has been subjected to pressure test this should be stated. Engine parts when referred to by numbers should be counted from forward.

DOCKING Propellers Good. Wear Down of Stern Bushes .200" Oil Glands - Sea Connections -

Fastenings Good. Has Screwshaft ~~Tubshaft~~ been drawn? No. Date of Examination - Has Shaft been changed? -

Has Shaft now fitted been previously used? - Has Shaft now examined/fitted a continuous liner? - Approved oil gland? -

MAIN ENGINES (Recip. Steam or I.C.) PORT STARBOARD

1 Cyls., Covers, Pistons & Rods

2 Valves & Gears

3 Connecting Rods, Top Ends & Guides Side Centre

4 Crankpins & Bearings Side Centre

5 Journals & Bearings

MAIN ENGINE DRIVEN AIR COMPRESSORS

6 Cyls., Covers, Pistons & Rods

7 Connecting Rods & Top Ends

8 Crankpins & Bearings

9 Journals & Bearings

10 Coolers & Safety Devices

MAIN ENGINE DRIVEN SCAVENGE PUMPS

11 Cyls., Covers, Pistons & Rods

12 Connecting Rods & Top Ends

13 Crankpins & Bearings

14 Journals & Bearings

15 Levers

16 SCAVENGE BLOWERS

17 SUPERCHARGERS

MAIN TURBINES

18 Casings, Rotors, Blading, Bearings & Thrusts

19 EXHAUST STEAM TURBINES (WITH RECIP. ENGINES)

20 STEAM COMPRESSORS

21 CLUTCHES & HYDRAULIC COUPLINGS

22 REDUCTION GEARING

23 THRUST BLOCKS, SHAFTS & BEARINGS

24 INTERMEDIATE SHAFTS & BEARINGS

25 HOLDING DOWN BOLTS & CHOCKS

26 CONDENSERS (MAIN & AUX.)

27 STEAM RE-HEATERS

28 DE-SUPERHEATERS

29 STOP & MANOEUVRING VALVES

30 MAIN ENGINE DRIVEN PUMPS

31 CRANKCASE DOORS & EXPLOSION RELIEF DEVICES

Have Main Engines been tested working and manoeuvring?

OPINION OF MACHINERY AND RECOMMENDATIONS The machinery of this vessel, as far as now seen is eligible

in our opinion to remain as classed with fresh records M.B.S. 1.59 now and C.S. (with date) when the

survey has been completed subject to the new section of coils fitted in the main propulsion motor stator,

and the repaired section of the slot laminations being specially examined and dealt with as found necessary

at the next drydocking, by the end of January, 1960 (12 months limit) and the temperature detector

being fitted in the bottom section of the stator winding also at the next drydocking by January, 1960 (12 months limit).

Date of Committee LIVERPOOL 3-MAN 1959

Decision As now subject to M.B.S. 1.59

40m, 4, 57. T. (MADE AND PRINTED IN ENGLAND.)

Noted for Header

J. Bowman Engineer Surveyor to Lloyd's Register of Shipping

Lloyd's Register of Shipping Foundation

002956-002969-0239/3

If certificate is required state where to be sent.

32 Essential Independent Pumps (Identify by position) Both turbo feed, auxiliary and starboard main extraction, and aft Butterworth pumps - Good.

33 Budge, Ballast & Oil Fuel Suction Lines, Fittings & Controls

34 Have the remaining Piping Arrangements & Fittings in the machinery space been examined as considered necessary?

35 Fresh Water Coolers 36 Lub. Oil Coolers 37 Heaters (state service)
 Outboard
 38 Independent Air Compressors, Coolers & Safety Devices
 39 Air Receivers & Safety devices—Main 40 Auxiliary
 41 Oil Fuel Tanks (Not forming part of hull structure)
 Distillers - (2) - Good. 42 Have Evaporator Safety Valves been tested under steam?
 43 Steering Machinery 44 Windlass 45 Fire Extinguishing Arrangements

AUXILIARY ENGINES (Identify by position) Inboard turbo-generator turbine, gears and lub. oil cooler - Good.
 Port F.D. fan (E.D) - Good.

PROPULSION		ELECTRICAL EQUIPMENT	
FORN	STARBOARD	AUXILIARY EQUIPMENT	
a Generators	Good.	1 Generators & Governors	Inboard alternator, pilot exciter and amplidyne unit - Good.
b Exciters	Inboard - Good.	m Motors	Inboard main condensate pump, Port Forced Draught Fan - Good.
c Air Coolers	† Good.	n Switchboards & Fittings	-
d Motors	-	o Circuit Breakers	-
e Air Coolers	-	p Cables	-
f Control Gear, Cables, etc.	-	q Insulation Resistance	-
g Insulation Resistance	In connection with above items.	r Steering Gear Generators and Motors	-
h Insulating Oil Test	-	s Navigation Light Indicators	-
i Overspeed Governors	-		
j Magnetic Couplings	-		
k Air Gap	Good.		

BOILERS OPENED UP & EXAMINED (Identify by position and state latest date of internal examination of each boiler)

MAIN 2 (WT) Both 2.1.59 Good. AUXILIARY, DONKEY & PRESS

Superheaters Good.
 Safety Valves Good.
 Mountings, Doors & Fastenings Good.
 Safety Valves Adjusted to Sat. 480 lbs p.s.i. (at Chief Engineers request).
 Spt. 464 lbs p.s.i.
 Boiler Securing Arrangements Good.

EXAMINATION & TESTING OF STEAM PIPES (State material)

Main Auxiliary (over 3 in. bore)

Were Copper Pipes annealed? Have Saturated Pipes in cylindrical boiler smoke boxes been tested?

PARTICULARS OF DEFECTS & REPAIRS, ETC. (Damage repairs should be detailed separate from wear and tear repairs; state what action has been taken regarding items which are subjects of class)

Wear & Tear Repairs.

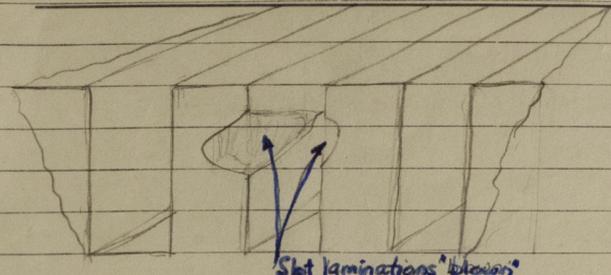
Forward turbo feed pump removed & replaced by owners reconditioned spare unit.
 Aft turbo feed pump, turbine nozzle plate, fixed blades and centre bearing renewed.
 Inboard turbo-generator turbine rotor and diaphragm renewed (from owners stock).
 Auxiliary & starboard main extraction pumps - shafts re-sleeved. Two lengths of aux steam pipes, 2" bore S D steel, renewed & tested.

LEAVE THIS SPACE BLANK

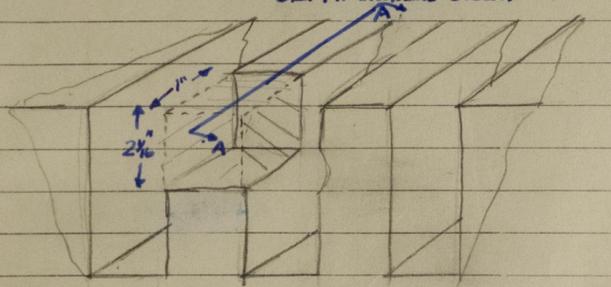
Survey fees	m.B.s	28-0-0
CS		22-0-0
Main Elect. Survey		10-0-0
Aux. Elect. Survey		20-0-0
Damage fee		20-0-0
Elect. Repair		50-0-0
Late Attendance		25-4-0
Expenses		6-11-0

Date when A/c rendered

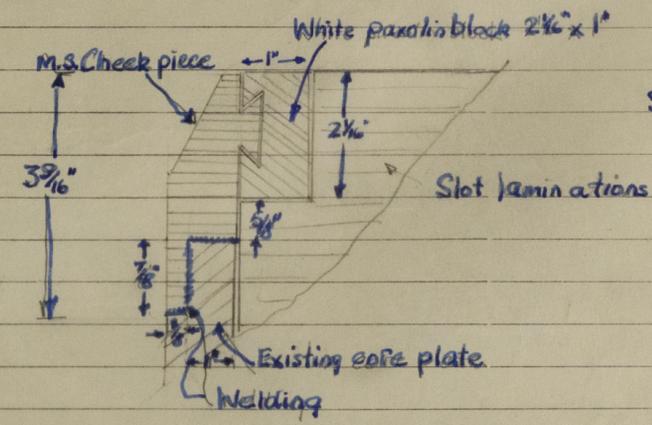
on the S.S./M.S. "TROCHISCUS"



Sketch showing Damage Sustained. FIG 1



Sketch showing Section of Slot Laminations Cut out. FIG 2



Section through A.A. (FIG 3)

Electrical Repairs - On account of damage sustained at Bechaquero (Lake Maricaibo) 7th Nov. 1958.

Forward Bottom Slots of Main Propulsion Motor Stator.

Thirty stator coils were removed and the damaged slot laminations examined. Two (Ford Bottom) slots had been affected and it was recommended that a section of the slot laminations 1" x 2 1/16" should be cut away and the space blocked with a piece of White Sindanyo. The "blocking piece" to be doweled to a steel check piece which was to be secured to the existing core plate by welding. The adjacent core plate teeth had suffered only slight damage and were to be built up with welding and the finish ground. Two slight voids in the slot laminations were to be filled with commutator cement (see sketches).

The above recommendations were carried out and prior to the completion of the rewinding of the section of coils the rotor was turned and damaged the evolutes of existing coils this caused the removal and replacement of a further sixteen stator coils.

The lower embedded temperature detectors had been damaged and replacements (from the U.S.A.,) were not immediately available. The detectors have been placed on order and it is stated that they will be fitted at the next drydocking, about the end of 1959.

Before connecting the forty-six new coils to the rest of the stator windings they were pressure tested at 5.6 KV. and on completion of the repair the stator winding was pressure tested at 2.5 KV. all with satisfactory results.

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Electrical Repairs. (Continued).

Main Propulsion Motor Rotor.

The Insulation resistance of the rotor was found to be low (0.1m Ω) and heat was applied to the winding in order to dry it out. The final Insulation Resistance after external heating and sea trials was 0.55m Ω .

On completion of the repair the main motor was tested under full power conditions at sea. (Trial records are attached). After this test the motor was opened up and examined and found to be satisfactory.

B.



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