

Rpt. 9

Date of writing report 12/5/60

Survey held at Calcutta

Received London

No. of visits 27

Port Calcutta

First date 30/11/59

No. 19509

Last Date 4/5/60

210 MAY 1960

REPORT OF PERIODICAL SURVEYS & REPAIRS OF MACHINERY

No. in R. B. 36576 Name M. V. "YENANGYAUNG" Gross tons 5938 Date of build 1937-8

Owners Burmah Oil Co. (Tankers) Ltd. Managers / Port of Registry London

Engines made Sld By Wm. Doxford & Sons Ltd. Type Oil Engine 2SA 4 Cy.

No. of Main Engines 1 No. of Screws 1

No. of Main Boilers - W.P. -

No. of Aux/Donkey Boilers 2 db W.P. 150 lb

Surveyed Afloat or in dry Dock Both

Nature of Survey Damage; Dkg; CS & DBS.

Was Damage Report issued? Yes Int. Cert? Yes

Last Report (For Head Office only)

Records of Survey & Special Notations as per Register Book

Table with columns for Hull and Machinery, listing items like +100 A1, oil tanker, (Dr), 4/59, 2/54, 4/59, +LMC CS - 4/59, d - 4/59, CL - 4/59, SPS - 4/59.

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.

DOCKING Propellers Good. Wear Down of Stern Bushes 5/32 Oil Glands Sea Connections Good.

Fastenings Good. Has Screwshaft/Tubeshaft 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 Nos. 1 and 4 Good.

2 Valves & Gears Nos. 1 and 4 Good.

3 Connecting Rods, Top Ends & Guides Side No. 1 Good. Centre No. 1 and 4 Good.

4 Crankpins & Bearings Side No. 1 Good. Centre Nos. 1 and 4 Good.

5 Journals & Bearings Nos. 1, 3, 4, 5 & 6 Good. No. 2 +

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 Good.

24 INTERMEDIATE SHAFT & BEARINGS

25 HOLDING DOWN BOLTS & CHOCKS

26 CONDENSERS (MAIN & AUX.)

27 STEAM RE-HEATERS

28 DE-SUPERHEATERS

29 STOP & MANŒUVRING VALVES

30 MAIN ENGINE DRIVEN PUMPS Sea Water; Lubricating Oil & Fresh Water (All) Good.

31 CRANKCASE DOORS & EXPLOSION RELIEF DEVICES Have Main Engines been tested working and manœuvring? Yes.

OPINION OF MACHINERY AND RECOMMENDATIONS The machinery of this vessel so far as now seen is in a safe working order and in my opinion eligible to remain as classed with fresh record of DBS 12,59 and CS with date on completion subject to Main Engine crankshaft (fractured) being dealt with as necessary before further service.

Date of Committee FRIDAY 10 JUN 1960

Decision

Signature A. McCOURTS, Engineer Surveyor to Lloyd's Register of Shipping

Noted for Header



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If so, is the Report sent now, or when will it be sent?

If certificate is required state where to be sent

32 Essential Independent Pumps (Identify by position) Stand By Lubricating Oil Pump; Ford Fuel Oil Unit Pump; Starbd Boiler Feed Pump; Ford Fuel Oil Transfer Pump; Ballast Pump. All Good.

33 Bilge, 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)

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)

42 Evaporators 43 Have Evaporator Safety Valves been tested under steam?

44 Steering Machinery 45 Windlass 46 Fire Extinguishing Arrangements

AUXILIARY ENGINES (Identify by position)

| PROPULSION                   | PORT | ELECTRICAL EQUIPMENT<br>STARBOARD | AUXILIARY EQUIPMENT                 |
|------------------------------|------|-----------------------------------|-------------------------------------|
| a Generators                 |      |                                   | l Generators & Governors            |
| b Exciters                   |      |                                   | m Motors                            |
| c Air Coolers                |      |                                   | n Switchboards & Fittings           |
| d Motors                     |      |                                   | o Circuit Breakers                  |
| e Air Coolers                |      |                                   | p Cables                            |
| f Control Gear, Cables, etc. |      |                                   | q Insulation Resistance             |
| g Insulation Resistance      |      |                                   | r Steering Gear Generators & Motors |
| h Insulating Oil Test        |      |                                   | s Navigation Light Indicators       |
| i Overspeed Governors        |      |                                   |                                     |
| j Magnetic Couplings         |      |                                   |                                     |
| k Air Gap                    |      |                                   |                                     |

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

| MAIN                                                                                             | AUXILIARY, DONKEY or PRESS                 | Starb'd 1-12-59.<br>Port 16-12-59. |
|--------------------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------|
| Superheaters                                                                                     |                                            | Both Good.                         |
| Safety Valves                                                                                    |                                            | Both Good.                         |
| Mountings, Doors & Fastenings                                                                    |                                            | Both 150 P.S.I.                    |
| Safety Valves Adjusted to { Sat.<br>Spt.                                                         |                                            | Both Good.                         |
| Boiler Securing Arrangements                                                                     |                                            | Both Good.                         |
| Main Economisers                                                                                 | Exhaust Gas Heated Economisers             |                                    |
| Steam Heated Steam Generators                                                                    | Steam Generators safety Valves Adjusted to |                                    |
| Were Oil Burning System & Remote Controls Examined working in accordance with Rules?             | Yes.                                       | Forced Circulating Pumps           |
| Have Saturated Steam Pipes in cylindrical boiler smoke boxes been examined as required by Rules? |                                            | Funnel 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)

Damage I

Damage stated sustained due to propeller striking a buoy on 23rd December 1959 whilst the vessel was undocking at Kidderpore Dry Dock, Calcutta.

Vessel examined afloat.

Now Done.

- 1st Propeller blade, portion approximately 6" deep extending for 24" from leading edge to propeller tip missing, damaged portion dressed.
- 2nd Propeller blade, minor indentations on propeller tip, dressed.
- 3rd Propeller blade, approximately 6" of tip for a length of 24" bent over at right angles to plane of propeller blade, tip of propeller cropped and dressed.
- 4th Propeller blade, approximately 3" of tip for a length of 24" bent over at right angles to plane of propeller blade and slightly torn, tip of propeller cropped and dressed up.

On completion of the repairs afloat the main engine was examined

|             |                                 |            |
|-------------|---------------------------------|------------|
| Survey fees | Docking.                        | Rs. 120/-  |
|             | C.S.                            | Rs. 1000/- |
|             | DBS.                            | Rs. 640/-  |
|             | Damage(1)                       | Rs. 500/-  |
|             | Damage(11)                      | Rs. 1000/- |
| Damage fees | Exps.                           | Rs. 210/-  |
|             | Spl. Atts. (20, 27 & 31/12/59.) |            |
|             | 1, 14 & 26/1/60. Expenses...    | Rs. 700/-  |
|             | 14/4/60                         |            |

Date when A/c rendered 13/5/60.

of Calcutta

Continuation of Report No. 19509 dated 13/5/60. 20 MAY 1960 on the MV "YEN AN GY AUNG"

under working conditions and no adverse effect arising from the propeller was apparent, but it is considered that it should be specially examined at the next dry docking, in the meantime considered efficient.

Damage 11.

Damage to main engine, cause stated unknown.

The owners representative stated that lubricating oil pump failures occurred on this vessel on the 2nd October 1959 and again on the 5th October 1959, whilst the vessel was on passage from Madras to Abadan.

The failure experienced on the 2nd October 1959, was stated to have occurred due to the main engine driven, lubricating oil pump rod breaking whilst the engine was at full speed, the failure on the 5th October 1959 was stated to have been due to an inadvertent stoppage of the stand by lubricating oil pump which was then in commission.

It was stated that on leaving Colombo, No.4 main engine centre crosshead bearings ran hot and white metal was found somewhat hammered, these bearings were renewed at sea, with the same trouble reoccurring.

The vessel then put into Madras reference Madras report dated 11th November 1959.

The vessel left Madras and again experienced the same defect.

Now Done.

No.4 Main engine cylinder liner, upper and lower pistons centre crosshead pins and bearings, centre guide and shoe, connecting rod, crankpin and bearing.

No.4 Main engine cylinder liner found worn and in accordance with the companies practice now renewed. White metal in No.4 centre crosshead bearing found hammered and spread, bearings remetalled, crosshead pins removed ashore, tested in lathe for truth, found true, the bearing surfaces polished, and refitted together with remetalled bearing.

No.4 Connecting rod removed ashore tested in lathe and on face table and found true, spherical surface of connecting rod bottom end found ridged, and fretted.

Damage II

Ridges removed and spare bearing shell fitted.

Main engine holding down bolts tested and found tight.

No.4 Main engine lined up and reassembled.

Main engine entablature examined and a number of fractures found in welding between main bearing pockets transverse members and the radial stiffeners, these fractures were dealt with as follows.

No.1 Transverse member looking Forward

Weld between bearing pocket and centre radial stiffener fractured, fracture now cut out and rewelded, approximately 6" of welding made.

No.2 Transverse member looking Aft.

Found good.

No.2 Transverse member looking For'd

Found good.

No.3 Transverse member looking Aft.

Weld between bearing pocket and the centre and two port side radial stiffeners fractured, fracture cut out and rewelded.



LEAVE THIS SPACE BLANK

20 MAY 1960

of CALCUTTA

Continuation of Report No. 19509 dated 13/5/60.

on the M.V. "YENANGYAUNG"

Circumferential weld between bearing pocket and transverse member fractured, fracture cut out approximately 3" and rewelded.

No.3 Transverse member looking For'd

Weld between bearing pocket and the two port radial stiffeners fractured, fracture cut out and rewelded.

Circumferential weld between bearing pocket and transverse member fractured, fracture cut out and approximately 8" of welding remade.

No.4 Transverse member looking Aft

Found good.

No.4 Transverse member looking Ford.

Approximately 6" of welding found defective at bearing pocket, weld now cut out and rewelded.

No.5 Transverse member looking Aft

Weld between bearing pocket and one port side radial stiffener found fractured, fracture cut out and rewelded.

No.1 Main engine side rod crosshead bearings opened out, examined and found to be slightly wiped, bearings dressed up and oil ways deepened.

No.1 Main engine centre crosshead bearings opened out and examined and found to be in good order.

Main engine crankshaft deflection readings taken and found to range between 25 thou and 32 thou, this is considered satisfactory.

Taut line readings taken by the builders representative prior to opening out of the main engine journal bearings showed that Nos. 1 and 5 bearings were down, the maximum difference between any two bearings being in the order of 19 thou.

From these readings Nos. 1, 2, 3 and 5 main journal bearings opened out.

No.1 bearing, indication of wiped metal noted bearing dressed and refitted.

No.2 bearing, metal slightly wiped, at this time dressed and refitted.

No.3 bearing, metal slightly wiped, at this time dressed and refitted.

No.5 bearing examined and metal found in good order, refitted.

The main engine assembled, intermediate shaft coupling aft of main engine flywheel dis-connected and engine trials held, No.4 centre crosshead bearings immediately commenced running hot.

Oil supply to these bearings checked and found adequate.

No.3 main engine journal bearing sperical surfaces found binding in bearing pocket, bearing housing bedded into bearing pocket.

Further taut line readings were taken by the builders representative who stated that, all previous readings taken had been misleading in consequence No.4 main journal bearing bottom half was removed examined and found to be somewhat wiped.

The ships spare bearing was fitted and further taut line readings were obtained which indicated that Nos. 2 and 3 main journals required raising, these bearings were remetalled and the shaft was raised accordingly.

Another trial with the engine uncoupled showed an improvement, therefore the engine was coupled up and dockside trials were held, the maximum permissible revolutions were 50 R.P.M.

A slight overheating of No.4 centre crosshead was noted at the beginning of the trials, but cooling off to normal running heat was noted after about 1/4...

six hours running.

In view of this improvement during dockside trials, it was necessary for the vessel to proceed down river out of the port limits to conduct full speed trials.

Full speed trials were held and overheating of No.4 bottom end and slight spreading of the side crosshead metal was again experienced, although to a lesser degree. It was decided to return to this port for further adjustments. No.4 Main engine was again opened out and lined up.

Acting on advice from the Engine Builders the tailshaft was centralised in the stern tube, this necessitated lifting the shaft 1/16" and the two following intermediate shafts were then lined up from the tailshaft by their couplings, each intermediate shaft was lifted 1/16" and work commenced lining up the main engine coupling to the adjoining intermediate shaft coupling flange. At this stage No.2 Main engine crankshaft journal was found to be fractured.

The fracture was found in the fillet of No.1 aft side rod, after crankweb, it was noted to run horizontally along the crankweb for about 4" when it passed thro the web fillet to run aft into No.2 crankpin in a helical direction for about 6".

Enquiries were made, but it was found that there are no facilities to deal with a repair of this nature in India.

On instructions from the Owners all work was stopped and the engine was reassembled and we have been informed that this vessel has now been shut down and is to be towed to Hong Kong for disposal.

It is therefore considered that the vessels class should be subject to Main Engine crankshaft (fractured) being dealt with as necessary, before further service.

*A. H. Courts*



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