

Report of Survey for Repairs, &c., of Engines and Boilers.

(Received at London Office 12 MAR 1937)

Date of writing Report 8th March 1937. When handed in at Local Office 19 Port of MALTA

No. in Reg. Book. 82655 Survey held at Malta Date, First Survey 14th Jan. Last Survey 26th Feb. 1937 (No. of Visits 13)

on the Machinery of the ~~Wood, Iron or Steel~~ R.F.A. "RELIANT"

Tonnage { Gross 7928 Net 4801 Vessel built at Haverton Hill - a - Sea By whom Furness S.B.Co.Ltd. When 1923 - 12

Engines made at Middlesbrough By whom Richardsons Westgarth & Co.Ld. When 1923

Boilers, when made (Main) 1923 (Donkey) Owners The Admiralty Owners' Address (if not already recorded in Appendix to Register Book.) Port London Voyage

of Main Boilers 4 Managers If Surveyed Afloat or in Dry Dock H.M. Dry Dock No.5. Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

of Donkey Boilers - Main Pressure 190 Main Boilers - Donkey Boilers -

Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).

Previous Report No. Port

Particulars of Examination and Repairs (if any)

Periodical Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly the use of Repairs, if any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on count of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and sides being detailed in the body of the report, should be briefly summarised at the end of the report. State also the dates and initials of any letters respecting this case.

damage cases where the Surveyor has not made a special damage report he is required to state whether he offered his services for this purpose, and why they were declined

Is a damage report made by anyone else? If so, by whom?

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? Yes

Did the Surveyor personally go inside each Donkey Boiler separately and make a thorough examination at this time? Yes

What parts of the Boilers could not be thus thoroughly examined?

What special means, in the absence of internal examination, were adopted by the Surveyor to assure himself of the thorough efficiency of those parts of each Boiler?

Latest date of internal examination of all boilers February 1937 Present condition of funnel(s) Good

Did the Surveyor examine the Safety Valves of the Main Boiler? Yes To what pressure were they afterwards adjusted under steam? 190 lbs.

Did the Surveyor examine the Safety Valves of Donkey Boiler? To what pressure were they afterwards adjusted under steam?

Did the Surveyor examine all the manholes, doors and their fastenings of the Main Boilers? Yes, and of the Donkey Boilers?

Did the Surveyor examine the drain plugs of the Main Boilers? Yes, and of the Donkey Boiler?

Did the Surveyor examine all the mountings of the Main Boilers? Yes, and of the Donkey Boiler?

Has the screw shaft now been drawn and examined? No Is it fitted with continuous liner? Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated?

Has the shaft now been changed? If so, state reasons

Has the shaft now fitted been previously used? Has it a continuous liner? Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated?

State the date of examination of Screw Shaft State the distance between lignum vitae or bearing metal of stern bush and top of after bearing of screw shaft

Engine parts, when referred to by numbers, should be counted from forward. Is electric light and/or power fitted? Yes

If the Survey is not complete, state what arrangements have been made for its completion and what remains to be done Complete

Survey of the machinery and boilers on the occasion of 2nd Special Survey No.1.

The propelling machinery consists of one H.P. and one L.P. turbine fitted with single reduction geared to one screw shaft.

The H.P. and L.P. turbines were opened up, rotor lifted for examination and with the exception of slight soft grease, easily removed, on the L.P. blades of the rotor and casing, they were found satisfactory. The blades show no sign of wear.

The H.P. casing was found to have leaked at the forward end due to faulty horizontal pointing, and the surface has been smoothed down as necessary.

The wear down at each end of the rotor were measured, compared with the original readings on board, and found as stated in the attached sheet.

The H.P. rotor shaft was also found slightly worn in way of packing space maximum .007" and

General Observations, Opinion, and Recommendation:—

State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to be made in the records of the vessel's machinery, boilers, working pressures, &c.; thus, for example, B.S. 9,11, B.&M.S. 9,11, L.M.C. 9,11, or L.M.C. 140 lb., F.D., &c.)

L. M. C. & B. S. 3,1937.

Fee (per Section 29) £21 : 0 : 0 Fees applied for 6/ 3/ 1937

Damage or Repair Fee (if any) £ : : Received by me, 19

Traveling expenses (if chargeable) £ : :

Committee's Minute FRI 16 APR 1937

Signed + dmlc, 237

CERTIFICATE WRITTEN.

Is a Certificate required? If so, to be sent to

Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation

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and has been smoothed down as necessary.

The minimum clearance between the rotor blades and diaphragm with shaft hard up against the ahead face before alterations to thrust adjustment was H.P. .150", L.P. .257".

The flexible couplings and bearings, thrust block and bearings (Michell type), tunnel shaft journals and top halves of tunnel blocks have been examined and are satisfactory.

The shafts, shaft bearings and the teeth of the reduction gear have been examined and found satisfactory. The teeth have also been tried with the Makers' gauges and these were found to fit properly.

In conformity with a request from the Engineering Department, H.M. Dockyard, and concurrence by cablegram from this Society, the auxiliary machinery which had been reported defective and refitted have been examined, the others were seen whilst working and are in good condition. The condenser has been tested under a head of water. The underwater fittings have been examined and refitted as necessary. The electrical equipment is satisfactory.

Wear down of rotor shaft, (present readings).

H.P. Ford. .024" Aft .026"
L.P. Ford. .026" Aft .020"

Turbine thrust clearances.

| | | |
|--------------------|-------------------|---------------------------------------------------------|
| H.P. Ford. .292") |) .021" as found. | <u>Note</u> .015" liner removed from aft to forward. |
| Aft .271") | | |
| Ford. .278") |) .020" as left. | |
| Aft .258") | | |
| L.P. Ford. .287") |) .022" as found. | |
| Aft .265") | | |
| Ford. .289") |) .024" as left. | |
| Aft .265") | | |

Main thrust clearance.

.070" as found.
.049" as left.

Bearing surface on the teeth of pinions and main wheel.

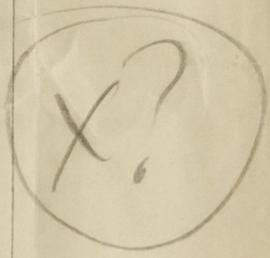
Ahead 90 %
Astern 60 %

Wear down of main wheel shaft, (present readings).

Ford. .055"
Aft .050"

Wear down of pinion shafts, (present readings).

| |
|------------------|
| H.P. Ford. .023" |
| Centre .023" |
| Aft .025" |
| L.P. Ford. .023" |
| Centre .023" |
| Aft .025" |



BOILERS.

There are four boilers of the cylindrical single ended return tube type, each having four corrugated furnaces with separate combustion chambers. The boilers are oil fired and fitted with Howden's forced draught system.

The boilers have been examined internally and externally and found satisfactory. The defects to the shell, combustion chambers and furnaces, reported in 1934, have not increased and are not active. In accordance with previous instructions from the Admiralty, a number of combustion chamber stays which were found worn $\frac{1}{2}$ " below the original diameter have now been renewed,

No.2 boiler 18 stays

No.3 boiler 15 stays

No.4 boiler 33 stays.

On completion of survey and repairs the boilers were satisfactorily tested by water pressure to 285 lbs per sq.inch. Deflection meters were fitted in the furnaces and combustion chambers and maximum deflections varied from $\frac{1}{16}$ " compression to $\frac{1}{16}$ " expansion, and on release of pressure left no permanent set.

P. J. Calcaterra

Not held

*It is submitted that
this vessel is eligible for
THE RECORD. File 2-37*

*RA
30/3/37*



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