

REPORT OF SURVEY FOR REPAIRS, &c., OF ENGINES AND BOILERS

(Received at London Office)

Date of writing Report 26-10- 48. When handed in at Local Office 27-10- 48. Port of SWANSEA.

No. in Reg. Book 80049. Survey held at Swansea. Date First Survey 6-10-48. Last Survey 14-10-1948.
(No. of Visits 5.)

80049. on the Machinery of the Wood, Iron or Steel S.S. "WILLOWBANK".

Tonnage { Gross 7288. Vessel built at Portland, Me. By whom New England S.B. Corpn. When 1944 -
 Net 4458. Engines made at Springfield, Mass. By whom Springfield Mach. & Fdry. Co. When 1944
 MN 668. Boilers, when made (Main) 1944. (Donkey) -
 No. of Main Boilers 2 WT. Owners Bank Line Ltd. Owners' Address -
 No. of Donkey Boilers - Managers Andrew Weir Shipping & Trading Co. Ltd. Port Glasgow. Voyage -
 Steam Pressure in Main Boilers 250 lbs. Spt. If Surveyed Afloat or in Dry Dock Both. Prince of Wales Dry Dock. Particulars of Classification (which must be inserted precisely as in Register Book & Supplements).
 in Donkey Boilers -

Last Report No. Port (Completion of LMC. MS.)
Particulars of Examination and Repairs (if any) (Damage.) (T.S.)

(Periodical Surveys, when held, must be reported in detail and seriatim in the terms of the Rules. State clearly the cause of Repairs, if any, and, in detail, the nature and extent of Examinations and subsequent Repairs. Repairs on account of Damage (the cause of which must be stated) should be separated from Repairs due to other causes; and besides 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.)

In 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. Yes, not required.

Was a damage report made by anyone else? If so, by whom? No.

Did the Surveyor personally go inside each Main Boiler separately and make a thorough examination at this time? No.

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

If this was not done, state for what reasons -

And what parts of the Boilers could not be thus thoroughly examined? -

Also 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? -

State latest date of internal examination of each boiler - Present condition of funnel(s) -

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

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? - and of the Donkey Boilers? -

Did the Surveyor examine the drain plugs of the Main Boilers? - and of the Donkey Boilers? -

Did the Surveyor examine all the mountings of the Main Boilers? - and of the Donkey Boilers? -

Has the screw shaft now been drawn and examined? Yes. Is it fitted with continuous liner? Yes. Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? -

Has shaft now been changed? Yes. If so, state reasons Fracture in way of Keyway.

Has the shaft now fitted been previously used? No. Has it a continuous liner? Yes. Is an approved appliance fitted at the after end of the shaft to permit of it being efficiently lubricated? No.

State date of examination of Screw Shaft 12-10-48. State the distance between lignum vitæ or bearing metal of stern bush and top of after bearing of screw shaft 1/8"

Engine parts, when referred to by numbers, should be counted from foreard.

Is electric light and/or power fitted -

If so, did the Surveyor examine the generators, motors, switchgear, cables and fuses? -

Has the insulation resistance of the generators, circuits and apparatus been tested and found to be not less than 100,000 ohms? -

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

Damage to Propeller. Particulars not available at time of Survey.

Now Done:- Vessel placed in dry dock, propeller, stern bush and outside fastenings of sea connections examined, propeller found broken at 3 blade tips, renewed. (New propeller cast iron). Screw shaft drawn in, specially examined and found fractured in way of keyway (see Continuation sheet for further particulars). New screw shaft fitted marked E.S.C.V. 57513 Lloyds B.H. 6-8-48 Carbon Steel.

In Completion of LMC. MS. The following machinery parts examined:-

Fan engine, auxiliary condenser together with its air and circulating pumps, inboard oil fuel pressure pump, engine driven ram pumps, pumping arrangements. Machinery spare gear checked and found to comply with Rule requirement. P.T.O.

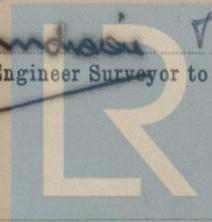
General Observations, Opinion, and Recommendation:— The Machinery of this Vessel as now seen (State clearly what alteration, if any, is suggested to be made in the existing classification of the vessel's machinery in the Register Book, consequent upon this survey, and also any alteration required to 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 LMC 140 lb., F.D., &c.) CS 3,34, is in good condition and eligible in my opinion to be classed with record of L.M.C., M.S., 10,48 and Screw Shaft New (C.L.) seen 10,48.

Survey Fee (per Section 29) T.S. £ 3 : - - Fees applied for 27-10-1948.
 Special Damage or Repair Fee (if any) (per Section 29.) £ 5 : 5 : -
 Travelling expenses (if chargeable) £ - : - : - Received by me, 19

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

Committee's Minute See minute on Rpt. 9
 Assigned See minute on Rpt. 9

FRI. 10 DEC 1948



Lloyd's Register Foundation

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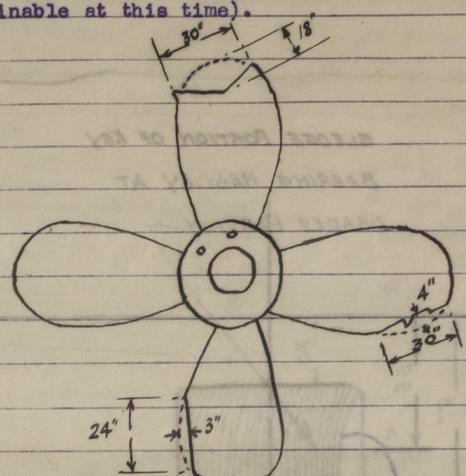
Insert Character of Ship and Machinery precisely as in the Register Book

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

Alteration:- Main bilge suction valves in ballast pump and fire and bilge pump suction chests converted from screw lift to non-return.

Swansea 28-10-48. a.s. "WILLOWBANK". ... Glasgow. Andrew Weir Shipping & Trading Co. Ltd. Both Prince of Wales Dry Dock. ... (Completion of IMC. MS.) (Damage.) (T.S.) ...

s.s. "WILLOWBANK".
Inspection of original Propeller and Tail Shaft now removed from the vessel.
The 4 bladed Bronze propeller found damaged at 3 tips as shown on sketch below - (cause not ascertainable at this time).



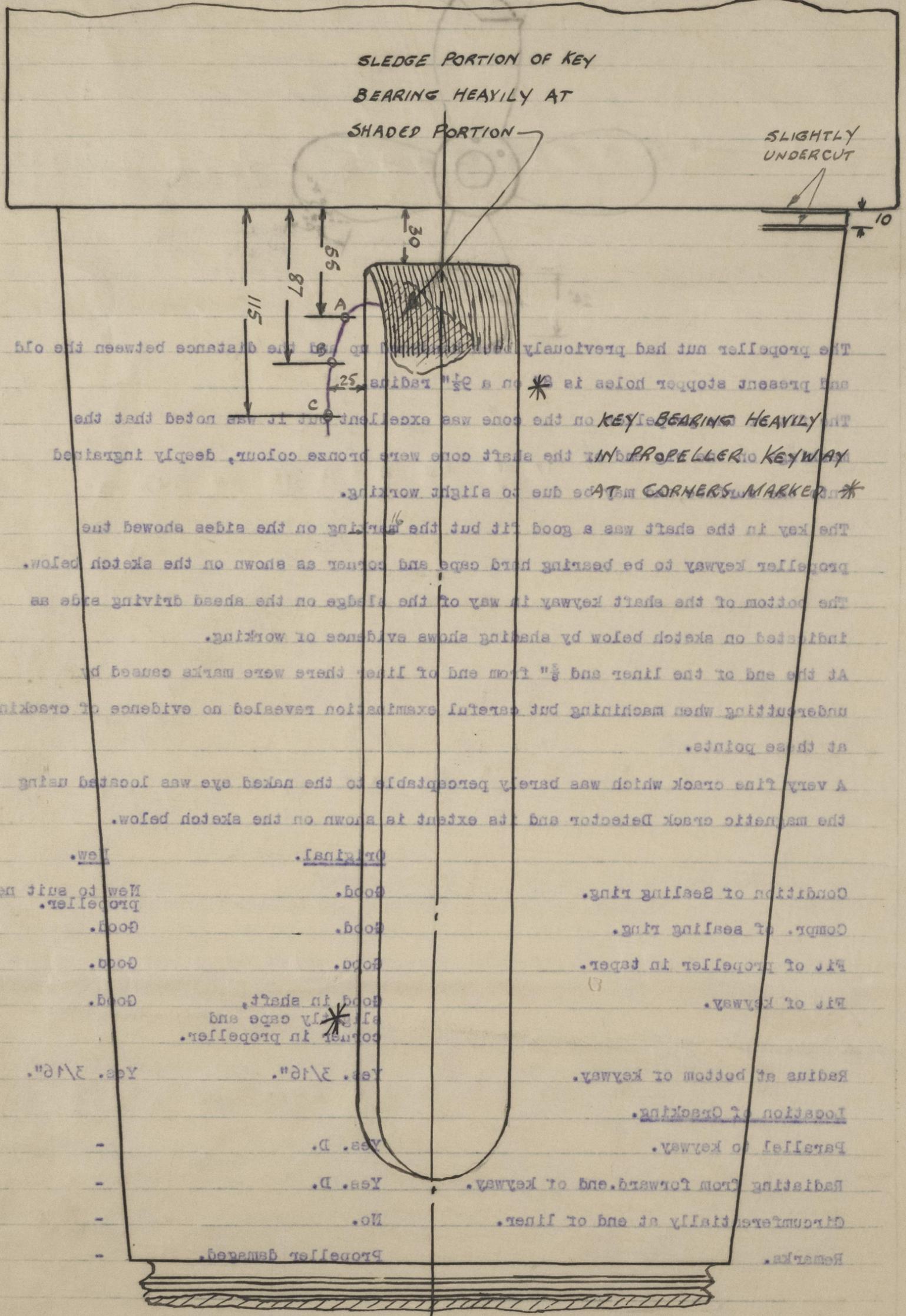
The propeller nut had previously been hardened up and the distance between the old and present stopper holes is 8" on a 9 1/2" radius.
The fit of the propeller on the cone was excellent but it was noted that the markings on the big end of the shaft cone were bronze colour, deeply ingrained into the surface, and may be due to slight working.
The key in the shaft was a good fit but the marking on the sides showed the propeller keyway to be bearing hard cape and corner as shown on the sketch below. The bottom of the shaft keyway in way of the sledge on the ahead driving side as indicated on sketch below by shading shows evidence of working.
At the end of the liner and 3/8" from end of liner there were marks caused by undercutting when machining but careful examination revealed no evidence of cracking at these points.
A very fine crack, which was barely perceptible to the naked eye, was located using the magnetic crack Detector and its extent is shown on the sketch below.

	Original.	New.
Condition of Sealing ring.	Good.	New to suit new propeller.
Compr. of sealing ring.	Good.	Good.
Fit of propeller in taper.	Good.	Good.
Fit of keyway.	Good in shaft, slightly cape and corner in propeller.	Good.
Radius at bottom of keyway.	Yes. 3/16".	Yes. 3/16".
<u>Location of Cracking.</u>		
Parallel to keyway.	Yes. D.	-
Radiating from forward end of keyway.	Yes. D.	-
Circumferentially at end of liner.	No.	-
Remarks.	Propeller damaged.	-

For Sketch see over.

DEPTH
 DRILLING 'A' - 1/8" CRACK NOT VISIBLE HAVING RUN TOWARDS KEYWAY.
 " 'B' - 5/8" CRACK VISIBLE FULL DEPTH.
 " 'C' - 3/8" Inspection of original Propeller and Tail Shaft now removed from the vessel.

The 4 bladed Bronze Propeller found damaged at 3 tips as shown on sketch below - (cause not ascertainable at this time).



The propeller nut had previously... and present stopper holes is... * KEY BEARING HEAVILY IN PROPELLER KEYWAY AT CORNERS MARKED *
 The key in the shaft was a good fit but the marking on the sides showed the propeller keyway to be bearing hard edge and corner as shown on the sketch below. The bottom of the shaft keyway in way of the ledge on the ahead driving side as indicated on sketch below by shading shows evidence of working. At the end of the liner and 1/2" from end of liner there were marks caused by undercutting when machining but careful examination revealed no evidence of cracking at these points.

Remarks.	Propeller damaged.	-
Circumferentially at end of liner.	No.	-
Radiating from forward end of keyway.	Yes. D.	-
Parallel to keyway.	Yes. D.	-
Location of Cracking.	Yes. 3/16".	-
Radius at bottom of keyway.	Yes. 3/16".	Yes. 3/16".
Fit of Keyway.	Good in shaft, slightly edge and corner in propeller.	Good.
Fit of Propeller in taper.	Good.	Good.
Compr. of sealing ring.	Good.	Good.
Condition of Sealing ring.	Good.	New to suit new Propeller.

For Sketch see over.