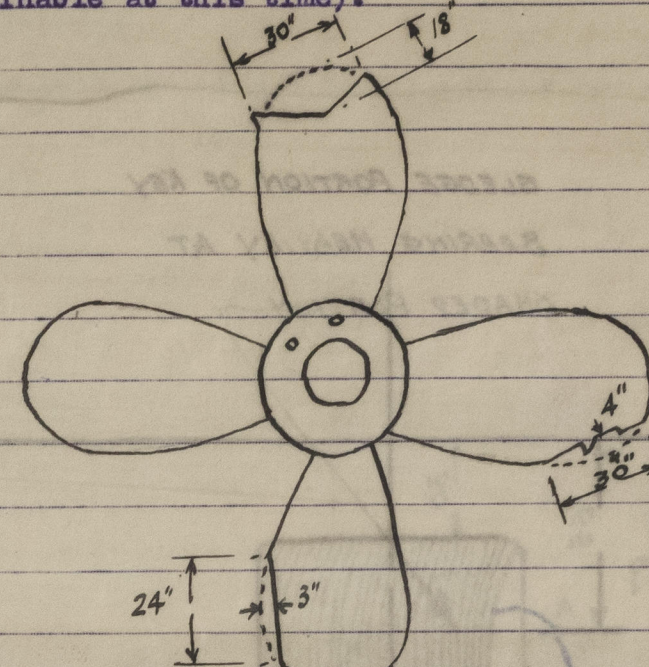


Alteration:- Main bilge suction valves in ballast pump and fire and bilge pump suction chests converted from screw lift to non-return.

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.

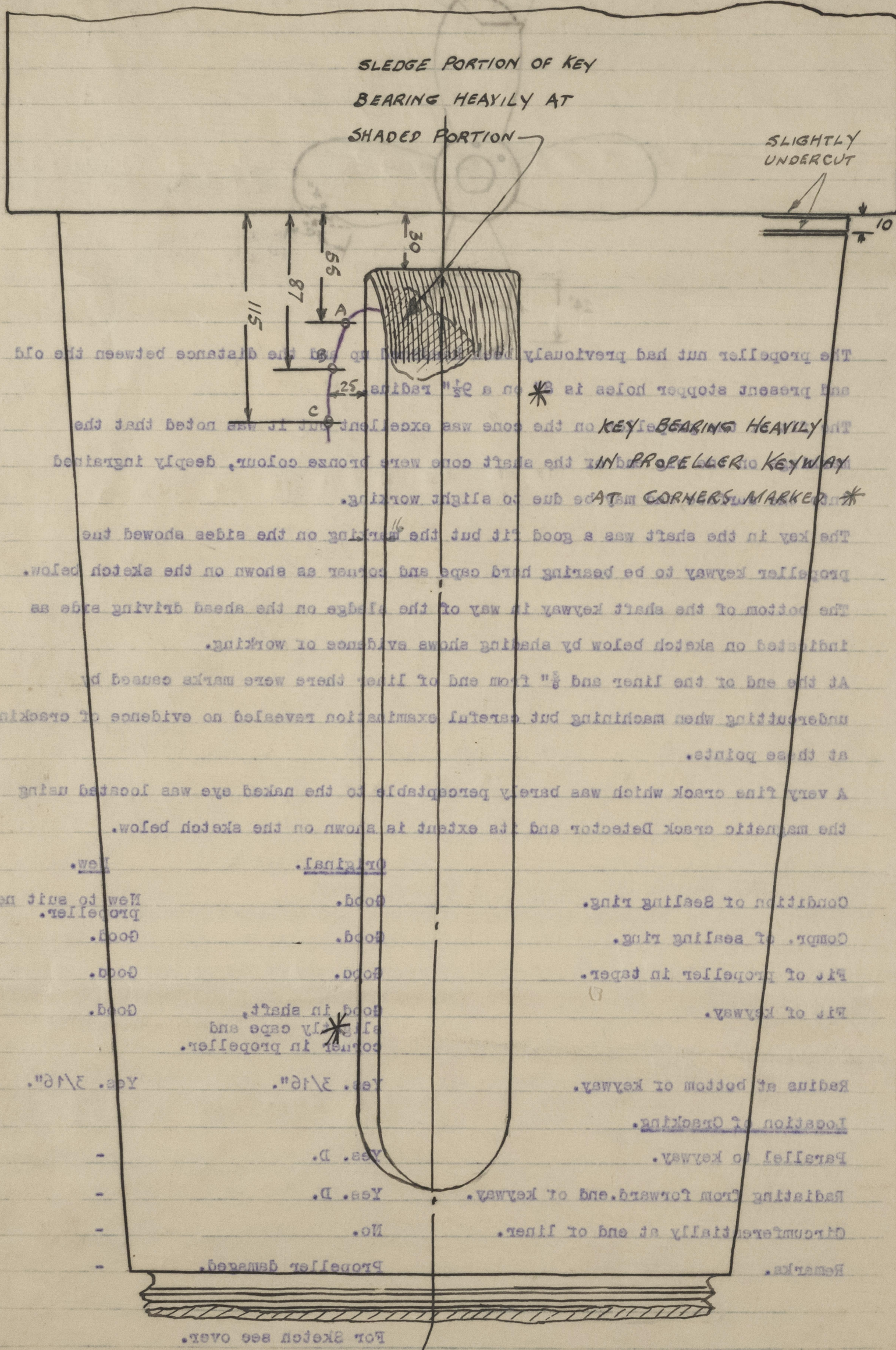
A very fine crack, which was barely perceptible to the naked eye, was located using the magnetic crack Detector and its extent is shown on the sketch below.

	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.

DRILLING 'A' - $\frac{1}{8}$ " CRACK NOT VISIBLE HAVING RUN TOWARDS KEYWAY.
 " 'B' - $\frac{5}{8}$ " CRACK VISIBLE FULL DEPTH.
 " 'C' - $\frac{3}{8}$ "

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).



Remarks.	Propeller damaged.	-
Circumferentially at end of liner.	No.	-
Radiating from forward end of keyway.	Yes. D.	-
Parallel to keyway.	Yes. D.	-
Radius at bottom of keyway.	Yes. $\frac{3}{16}$ ".	Yes. $\frac{3}{16}$ ".
Fit of keyway.	Good in shaft, slightly cage 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.



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