

LLOYD'S REGISTER OF SHIPPING

Port GLASGOW.17th September, 1959.

This is to Certify that

J. MACLEOD

the undersigned Surveyor to this Society did at the request of

Messrs. David Rowan & Co. Ltd., attend their Engine Works, Glasgow on the 25th June, 1959 and subsequent dates in order to examine and report upon the H.P. turbine of the s.s. "MACHARDA", T. & J. Brocklebank Lines Ltd., which had been removed from the vessel and transported to the shops for repair. David Rowan's Job No. J.8698.

The turbine was opened out and rotor lifted. The turbine casing was found deeply eroded and wasted between the blade rows and at blade roots, the holding capacity of the blades being reduced by more than $1/3$ depth. The turbine casing horizontal joint flanges were corroded in way of the bye-pass belt.

The horizontal joints of the casings top and bottom were milled and the joint faces built up by welding, the welding being carried out carefully by the Anglo Swedish Co., the heating and cooling being regulated and stress relieving by hammering carried out. The two halves were then bedded together to give a satisfactory bearing contact.

The cylinder was rebored $3/16$ " larger in diameter care being taken to ascertain that the cylinder was of adequate thickness. Blading grooving was recut and reserrated.

All five expansions were rebladed the blading being longer than original to suit the rebored cylinder.

The rotor was reconditioned and all blading renewed, a new dummy piston was fitted to rotor shaft and oil and steam glands dealt with as necessary. The rotor on completion was dynamically balanced. The casing dummy was rebored and refinned. The bearings, governor, thrust were all adjusted to suit the repositioning of the rotor which was moved forward $3/32$ " to suit the reserrating. All clearances were checked, necessary tipping of blading carried out, and adjustment made.

The turbine/

Contd/.....

This Certificate is issued upon the terms of the Rules and Regulations of the Society, which provide that:—

"While the Committees of the Society use their best endeavours to ensure that the functions of the Society are properly executed, it is to be understood that neither the Society nor any Member of any of its Committees is under any circumstances whatever to be held responsible for any inaccuracy in any report or certificate issued by the Society or its Surveyors, or in any entry in the Register Book or other publication of the Society, or for any error of judgment, default or negligence of any of its Committees or any Member thereof, or the Surveyors, or other Officers or Agents of the Society."

COPY

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The turbine was re-assembled in good condition
for re-installation in the vessel.

(sgd.) J. Macleod

Surveyor to Lloyd's Register.

Fee £10. 10. -.



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Lloyd's Register
Foundation

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