

N/N "CAP SAUMON"

T.S.M.V. 'SAULT-AU-MOUTON'

Shipbuilders: Geo. T. Davie & Sons, Ltd., Lauzon P.Q.
Yard No. 34.

Engine Builders: Fairbanks Morse & Co. Type 35 E 10.

The New York Surveyors have now forward^{ed} calculations of the torsional vibration characteristics of the main propelling machinery.

The Enginebuilders' calculations indicate that the only important critical is the 5th order 1-node major occurring at 191 R.P.M., i.e. 47.4% of the normal service speed and the Firm's estimate of the corresponding vibration stress in the $4\frac{1}{4}$ " dia. screwshaft is $\pm 2,740$ lbs./sq. inch.

These calculations have now been checked in this Office using the Society's standard methods of calculation and the stress due to the 5th order 1-node critical has been calculated at approximately $\pm 6,500$ lbs./sq. inch, which is in excess of the figure of $\pm 4,100$ lbs./sq. inch considered satisfactory by the revised Guidance Notes for continuous running, but is such as could be accepted provided the speed range 174 to 209 R.P.M. is avoided for continuous running.

IT IS SUBMITTED the New York Surveyors be informed that the torsional vibration characteristics of the main propelling machinery of this vessel have been examined and merit approval for a normal service speed of 400 R.P.M., provided a notice board be fitted at the engine control station stating that the engines are not to be run continuously over the speed range from 174 to 209 R.P.M. inclusive and the engine tachometer be marked correspondingly.

It should be explained that this requirement is considered necessary since the Society's calculated value of vibration stress in the $4\frac{1}{4}$ " screwshaft due to the 5th order 1-node major critical occurring at 191 R.P.M. is appreciably in excess of the figure of $\pm 2,740$ lbs./sq. inch given by the Engine Builders.

La. S. A. J.

19th July, 1946.

Retain Firm's calculations
in Research Department.

noted
Bell



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