

"FOSSA"

1st January, 1948.

Dear Sir,

British Polar Engines Ltd. - Torsiograph Tests  
Engines Nos. E. 639, 636 and 618.

E.

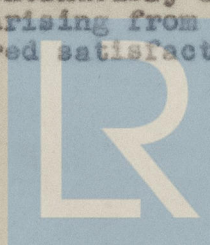
I am in receipt of your letter of the 26th ultimo regarding torsiograph records in the case of Engine No. 639. Your letter of the 10th enclosing a copy of one dated the 5th December sent to you by the British Polar Engines Ltd. was duly received in this Office, and I regret that you were troubled in the matter.

I have now to inform you that the extracts from the torsiograph records taken from the main machinery of these vessels, together with the comments contained in the Firm's letter of the 5th December have been carefully examined, and to set forth the following remarks:

m.v. "BEN HEBDEN"

The magnitudes of the maximum vibration stresses arising in the intermediate and screw shafting, from the one node 6th order critical, have been evaluated in this Office as  $\pm 9,100$  lb. per sq. inch and  $8,100$  lb. per sq. inch respectively, the maximum vibration stress in the crankshaft arising from 2 node 9th order critical being  $\pm 3,500$  lb. per sq. inch.

The stresses, arising from the one node critical in this instance, are considered satisfactory for a transient critical, and a notice board should be fitted at the control station stating that the engines of this vessel are not to be run continuously between 180 and 215 r.p.m. The stresses arising from the 2 node 9th order critical are considered satisfactory for continuous running.



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m.v. "TEAL"

The magnitude of the vibration stress in the screwshaft  $7\frac{1}{4}$ " dia. ( $Z = 74.9$  in.) arising from the one node 7th order critical is estimated from the torsigraph records as  $\pm 8,500$  lb. per sq. inch. This stress is considered satisfactory as a transient critical, provided a notice board be fitted at the control station stating that the engines of this vessel are not to be run continuously between 105 and 135 r.p.m.

In this instance, the vibration stresses in the crankshaft arising from 2 node criticals within the running range are considered satisfactory for continuous running.

m.v. "FOSSA"

It is noted that owing to cyclic speed variation of the engine at low r.p.m. and the limitations of the instrument used, it was not possible to measure either the amplitude of vibration arising from the 1 node 6th order critical or to draw the resonance curve for this critical vibration. It is, therefore, considered that a notice board should be fitted at the control station stating that the engines of the vessel are not to be run continuously between 110 and 150 r.p.m.

Yours faithfully,

Secretary.

The Secretary.  
GLASGOW.



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