ABSTRACT

Require vibration analysis useful to predict the existence of problems in a system. In this final analysis of mechanical vibrations are generally derived from boat propeller system. Propeller is a part of the ship that generate thrust due to the lift force that rotates to produce thrust in the ship. High vibration can cause damage to the propeller system components, so it is necessary to dampen vibration analysis. The purpose of this thesis is to determine the value of the natural frequency of the ship propeller. Determine whether the dynamic vibration absorbers can be used to dampen vibration on the ship propeller construction. From the testing that has been conducted found that the vibration amplitude is shown on the chart system dynamic response. Testing for vibration damping by changing the parameters of the arm length, the diameter of the arm, and the arm material. Natural frequency of the propeller system is 3.54 rad/det. Ship propeller system that has been done shows the amplitude of $2.937 \times 10^{-4}$ m. Testing with the conversion of the long arm of generating dynamic response and the smallest amplitude of $2.13 \times 10^{-4}$ m. Testing by changing the diameter of the arm parameters produce dynamic response and the smallest amplitude of $2.324 \times 10^{-4}$ m. Testing the conversion of material, the material obtained is best used to dampen the vibration is bronze material which produces an amplitude of $1.246 \times 10^{-5}$ m.

**Keywords:** Propeller, amplitude, vibration, dynamic response.