

## ABSTRACT

**Gerson Halorik Simbolon**, 2017, NIT: 50134937.T, "*Optimilation of ballast pump treatment at AHTS.Temasek Attaka* ", thesis Teknika Studies Program, Diploma Program IV, Semarang Merchant Marine Politechnic, Supervisor I: Dwi Prasetyo, MM, M.Mar, E Supervisor II: Sri Purwantini, SE., S.Pd., MM

*The pump as one of the hydraulic fluid flow machines is basically used to move incompressible fluids from one place to another by increasing the pressure of the displaced fluid. The pump will provide mechanical energy to the working fluid, and the energy received by the fluid is used to increase the pressure and against the resistances contained in the pump installation channels.*

*The ballast pump is one of type centrifugal pump, working on the principle of impeller rotation as a fluid transfer element driven by a prime mover. The liquid inside the pump will be rotated by the impulse of the blade and causes a centrifugal force which causes the liquid to flow from the center of the impeller and out through the channel between the blades and leave the impeller at high speed. This high-speed fluid is passed through a channel whose cross-section becomes larger (diffuser) so that there is a change of head (high pressure) speed to head pressure. After the liquid is thrown by the impeller, the space between the blades becomes vacuum, causing the fluid to be sucked in so that the suction process takes place. At the time the authors carry out the activities of the sea and at the time the vessel is in operation where the pressure from the ballast pump decreased by 3 (three) times, causing instability of the ship because the ballast pump can not fill the water supply into the ballast tank. The pump performance drop unexpectedly and instability in operations are often a serious problem and disrupt overall system performance. One indication of the cause of the turbulence of the working pressure of the pump is the instability of the pump pressure*

*The optimilation of maintenance on the ballast pump regularly and systematically is absolutely necessary, and to keep the work of the ballast pump. In order for the ballast pump work can work according to its function and will not hamper the ballasting process on board AHTS. Temasek Attaka.*

**Key Word: Ballast Pump System, Impeller, Maintenance Parts**