

ABSTRACT

Muhammad Irfan Taufiq, 2018, NIT, 51145353 T, 2018, "*Influence of decreasing scavenging air pressure on MV.Ciremai's main engine*", Diploma IV, Technical, Merchant Marine of Semarang, Mentor I: Sarifuddin, M.Pd., M.Mar.E., Mentor II: Capt.Didi Sumadi, M.Mar

The current vessel operation uses diesel motors as the prime mover, as for the engine it also uses diesel motor because it has better efficiency level than steam turbine. One of the process steps of diesel motor 4 stroke is step in step or step suction piston move down and open valve open and exhaust valve closed. Through the open inlet valve, the air flows into the cylinder with the ignition of the ignition and the heat of the compression step, there will be a combustion process in the cylinder. At this step of entry the air pressure rise in the cylinder reaches 0.7-1.1 bar. However there is a problem where at the time the ship is traveling from Bau-Bau - Sorong rise air pressure decreased to 0.6 bar.

Method used by the writer are *fishbone* and *Fault Tree Analysis* by taking the cause factors and any dangerous risk toward the investigated object. It can be done by 4M with *fishbone* factor, *Machine, Method, Milleu, and Man*. Meanwile, *Fault Tree Analysis* is very effective to find a core problem which comes in a failure point with a *top down* approach, which begins by the assumption or disadvantage from the top event.

Results obtained in this observation is the factor that influences the decreasing of scavenging air pressure on a 4 tag main engine is a less optimal work by the turbocharger caused from the dirty dirt. As well as the intercooler caused by the drainage of waterways which comes from a dirty water cooler. These things influence on a decreasing of machine power, the occurrence of the machine's excess heat, and the wasting of fuel usage. Effort to prevent the decreasing of scavenging air pressure is doing an air filter change appropriate with PMS (Plain Maintenance System), seachest cleaning and intercooler maintenance.

Key Words : scavenging air, Main engine, *Fishbone theory*, *Fault tree analysis theory*.