

ABSTRACT

Teguh Hadi Prasetyo, 2018, NIT, 51145424 T, 2018, *“Influence of MFO fuel viscosity on the work of the injector main diesel engine of the MV. Clipper Brilliance using the combined fishbone and fault tree analysis (FTA) methods”*, Technical Department, Program Diploma IV, Merchant marine Polytechnic of Semarang, Supervisor I: Abdi Seno, M.Si, M.Mar.E, Supervisor II: Tony Santiko, S.ST, M.Si

Marine fuel oil (MFO) is one type of fuel oil that can be used in diesel engines, especially those with greater weight. This fuel includes residual oil which is seen in thick black colors and is thick. When the ship goes to New Orleans, the exhaust gas of the main engine that comes out of the chimney is solid black. This is caused by setting the fuel temperature before being used too low so that the fuel does not mix well with compressed air. The purpose of this research is to find out the causal factors, the impact that occur, and the efforts to overcome the factor causing the lack of conformity of the viscosity of MFO fuel.

The method used by author is a combined method of fishbone and fault tree analysis by taking factors that cause factors and risk of danger to the object under study. In fishbone factors can be solved with four M, namely human, methods, mother nature and machine. While in the fault tree analysis it is effective to find the core of a problem that originates at a single point of failure with a top down approach, which begins with a failure assumption or a loss from a top event.

The results of the study show that the factors that cause incapability of the viscosity of the MFO fuel to the injector main diesel engine of the MV. Clipper Brilliance is influenced by four factors namely in terms of human factors lack of skill and number of crew on board, in terms of methods is lack and absence of SOP, in terms of environment is bad weather and the density of operational schedule, and in terms of machine is operating hours and use of machinery that exceeds capacity. The impact due to these factors can result in reduced engine performance such as the nozzle hole in injector, the dirty combustion chamber and weight the work of the purifier. Efforts made to overcome the casual factors are studying the specifications of the fuel used to determine the right temperature. The need periodic maintenance of the components of the MFO fuel system and special attention to the injector because if the spraying is not perfect, complete combustion never occurs.

Key words : Viscosity, Marine Fuel Oil, Injector Diesel Engine