

## ABSTRACT

**Ragin Basuki**, 49124582.T, 2017, "Analysis of the occurrence of detonation in the combustion chamber in Engineering Master in MV. Solo Sinar *method Fishbone Analysis* ", Diploma Program IV, Teknika, Sailing Semarang Polytechnic Sciences, Supervisor I: Drs. Darjono, M.Mar.E and Supervisor II: Adi Oktavianto, S.T., M.M.

The development of diesel engines in particular 2-stroke engine (step) had long been experiencing a lot of the modification process, both in terms of design, construction and in terms of power capacity is raised. The main characteristics of the diesel engine that distinguishes it from other motor fuel which is the method of ignition of the fuel. In the diesel engine fuel is injected into the cylinders, which contain high pressure air. During compression, the air in the cylinder, the air temperature increases, so that when the fuel in the form of a fine mist, contact with hot air, will light up. Based on the fact that experienced by the author in Engineering Master in MV Sinar Solo, almost every voyage twice a detonation in the engine. The parameters of detonation is a condition of the main engine which is marked by the flue gas temperature is high on one cylinder, accompanied by thumping loud and the vibrations were quite fast on Engineering Master and clouds of smoke in the chimney so black because it is caused by incomplete combustion on one cylinder.

The method used is Fishbone Analysis / diagram, or fishbone diagram fishbone diagram is one method to improve quality. This diagram is often also called a diagram of causation or cause effect, which uses data diagram verbal (non-numerical) or qualitative data .. While the fish bones filled by causes following the approach of the problem. Told Cause and Effect diagram (Cause and Effect) as the diagram shows the relationship between cause and effect. In connection with statistical process control, cause-effect diagram is used to show the factors that cause (cause) and the quality characteristics (due) caused by factors that cause it.

From the description that has been presented in the discussion section, it can be concluded some of the following: Underlying causes of detonation is the injector that is not working normally, pressure injector is too low, and the quality of fuel that is not good. The impact that occurs when a detonation in the Parent Machine is cracks in the piston and piston rod, and a great cause vibration on the motor. Efforts to prevent the detonation is a way to do maintenance, repair and checking on the quality of fuel, and checking and measurement of the Parent Machine components that need to be held regularly measurement.

**Keywords:** Diesel engine, Detonation, *Fishbone Analysis*.