

# MAINTAINABILITY INDUSTRY PREVENTING OCCUPATIONAL ACCIDENTS AND INCREASE PRODUCTION

By

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## ABSTRACT

Labor and all equipment really need to be saved by being treated. That industrial management must have a deep commitment *maintenance*. So that production can run smoothly and optimally. The design of scientific writing uses descriptive. Data collection method is done by using literature study. Data analysis uses descriptive, analyzing various findings or opinions from various literature about *maintenance*, work accidents, and product improvement. The inference method uses deductive. Conclusion, that *maintenance* is to save the equipment and workforce of the factory/industry community so that they remain in the initial conditions of production operations, it is necessary accident prevention taking into account several factors, namely: a. factory environmental factors, b. equipment and work equipment factor, c. energy management factors have a risk of danger, and d. human factor. Suggestions, industrial management must have a commitment to rescue (*maintenance*) on products, maintenance of work tools/equipment, work environment and workforce in the industry.

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## 1. INTRODUCTION

Optimal and increased production is the hope of entrepreneurs or business owners or industry/factory. But hope it has to do *maintenance* conditions and labor behavior. This time will be discussed related *preserved*, accident prevention and production increase.

Labor mistakes in choosing materials can cause accidents. As Qiqi Azwani Syauqi et al (2017), the results of her research stated that "It is known that the incidence of work accidents with values *Risk Priority Number* (RPN) is the highest is exposed to welding fire when turning on the welding where the fire is too big.

Likewise, the situation is non-standard and no personal protective equipment (PPE) is available needs and other facilities are a factor in the accident. Like Ahmad Mas'ari et al (2019), stated "that the employees of a newspaper industry company in Riau did not apply K-3 standards accordingly, such as: (1) lack of protective equipment themselves, (2) workers are exhausted because *more* working hours, (3) none *display* on the production floor, (4) uncomfortable work space." This has an impact on health and safety employee.

Accidents can occur due to the conditions and behavior of employees in an organization company. As Arpandi Sarumpaet (2022) reports "that at that time employees the factories are all carrying out cleaning activities, and a boiler part is also involved at that time, for some reason, suddenly the hot ashes of the boiler suddenly collapsed and hit someone the employee, and immediately the employee was appointed, his body blistered and stiff.

An accident in a company affects production. Like Febri Andrianto et al (2016) researched in a limited liability company in Sidoarjo, found that "From 2015 to 2016 there tends to be a decrease in the frequency of work accidents by 25.7%, and increased production by 0.8%".

Occupational accidents are one of the main problems in the field of health and work safety. Work accidents will cause losses to both parties, workers and employers. Work accidents can occur in all industrial sectors. According

to Elia Rosalinda Afif et al (2005) said that "many factors can influence work accidents occur. The human factor itself is the most dominant to the emergence accidents due to work, such as carelessness, lack of attention, and others.

Therefore it is necessary *maintenance* which is a maintenance measure (*maintenance*) on tools and labor to avoid work and production accidents can increase. *Maintenance* can happen well when management The company cares about saving labor and production equipment.

## 2. RESEARCH METHODS

The design of scientific writing is carried out descriptively, namely exposure. Method Data collection was carried out using a literature study. Data analysis using descriptive, analyzing various findings or opinions from various literature about *maintenance*, work accidents, and product improvement. Inference method using deductive means drawing specific conclusions from several things of a nature general.

## 3. RESULT AND DISCUSSION

### 1. *Maintenance* in Industry

In engineering, maintainability is the ease with which a product can be maintained for correct the defect or its cause. Repair or replace damaged components or worn out without having to replace the working part, preventing a different working condition unpredictable, maximizing the useful life of the product. *Maintenance* is a probability A product that experiences failure can be repaired in time certain. *Maintenance* comes from the word maintain (maintenance) and ability (ability). *Maintenance* can be interpreted as the ability to maintain a system that has possibility of a damaged system to be restored to full working condition in a specified period of time. As Gezag Akbar (2015) said that

"*maintenance* is the probability of treating an item to be returned to initial operational conditions".

It can also be interpreted that *maintenance* is a rescue equipment and the factory community, aka employees, to keep it in its initial state. In a business / factory there are a lot of employees and there are few employees. All of that must be safe inside Work. In order for all employees to be safe, the company's management must pay attention two things, and that should not happen. First, is a dangerous condition (*not safe condition*). And, secondly, harmful behavior (*unsafe act*).

On project work, the road is slippery *insecure code*, also the workforce not much use of personal protective equipment (PPE). *unhealthy act*. As Yunita A. Messah (2015) research results show "that 36.84% is caused by road which is smooth and dark, whereas because workers do not wear protective hats at 31.58 %. For prevention solutions, namely the method of work must be in the correct position, remain careful, thorough and disciplined, posted a sign "Caution, there is work above", installed safety nets on lower area, it is forbidden to throw away unused items, equipment storage in place, lifting material/equipment not exceeding the load limit, installation the material/equipment must be good, and the method of lifting the material/equipment up must be correct.

Anizar (2009) in Dwi Ari Kusumarini (2017) states that "*not safe condition* caused by various things, including: 1) equipment that is no longer suitable for use, 2) less standard building security, 3) inadequate lighting and ventilation or excessive, 4) hazardous temperature conditions, and 5) the nature of the work containing potential hazard.

Then, Winarsunu in Dwi Ari Kusumarini (2017) states that "as a result generated *unsafe act* is a work accident. As for *unsafe act* Which resulting in work accidents, among others: a) not being careful b) not complying with the rules, c) not following standard work procedures, d) not using personal protective equipment, and e) conditions weak body. The percentage of causes of work accidents is 88% because *unsafe act of people*".

Lack of employee awareness constitutes *unsafe act*, as Rony Nawe et al (2018) in their research concluded that "the cause of damage *Blowout Preventer* (BOP) The system that occurs, the lack of awareness and concern for workers at the site work".

Employees also need to be given *maintenance* namely the maintenance of employees to standard at work, enough energy, good mentality, because employees must have production integrity. As Gifari Zakawali (2022) says that "*total productive maintenance* is process of using machines, equipment, employees and support processes to maintain and improve production integrity and product quality".

For the sustainability of the industry, the presence of employees is very necessary. Can It can be said that employees are the main actors of a company/industry. Like Lendra Rusmiyanto et al (2021) in the conclusion of his research stated that "the system decision support to help *Human resources department* in determining the best employee". It shows that the industry needs the best employees or quality.

Various kinds of *unsafe condition*. For example, the floor of the workplace is muddy. hit liquid spills, for example water/oil/oil and others. It's like a trap people will slip, then immediately clean. In addition, hazardous conditions, such as scuffed power cords, wires and cluttered electrical connections (untidy, not standard), placing round heavy objects on top of trays tied tightly, the tire spins without *obstacle* (cover), and others. Those are all conditions dangerous, unfortunately employees can accidentally get hurt.

*Unsafe actions* (harmful behavior). That behavior, for example likes to joke when work, employees are drunk while working, an employee is still sleepy while working. There is conflicts between gangs (between a group of close co-workers), and others. It's all behavior dangerous, and an accident may occur.

Factory management must be responsive, managing its employees socially. In order not to carry out dangerous activities. Because it can harm the employees themselves. Apart from that, everyone loses. Socially, managers must be able to reduce conflict between gangs (groups of close friends). Understand who the employee's gang friends are. That's important because it often happens that gang friends are able to soak so that there is no conflict between employee. Occupational accidents include the emergence of conflict. Will make employees quit work for a while. Disrupted production process, will harm all. Manager (manager factory) must be able to manage so that the factory situation becomes harmonious.

## 2. Prevent Work Accidents and Increase Production

The workforce has the ability and there are no work accidents, obviously it will increase production optimally. As Nur Aini Faridah Rahmawati et al (2019) stated that "the activities of implementing the K3 (occupational safety and health) program to increase productivity and quality for workers in the construction sector". We know that when production increases, productivity will also increase.

Prevention of work accidents, According to Eticom (2022) states that "work accidents can be prevented by paying attention to several factors, namely: 1) environmental factors, 2) work equipment factors, 3) work equipment factors, and 4) human factors.

Likewise in life and the way of life at work. In order to prevent accidents, or achieve safety and health, it must be standard or normal that errors do not occur in four respects, namely: 1) the environment (*environment*), 2) living equipment (*living equipment*), 3) with fellow human beings (*human society*), and 4) the source of life/livelihood is also a source of danger that must be managed.

Environment (*environment*), in principle, make the environment including the environment in the company that makes humans able to live. It is better if the environmental ecosystem can be maintained normally. The main thing to live is that you need water to drink, you need air to breathe, and you need to eat. Most food comes from the land. The trees must be dimmed. Fruit trees or food trees. Including halal animals as human food must exist. There are terms *development sustainability*, meaning the development of products and nature that allows humans to live a long life, aka not to become extinct.

live equipment (*living equipment*) includes tools for work. It would be a waste and a burden to have equipment not needed for work. Modern work equipment as long as needed will facilitate work.

Labor is a social being (*human society*). Humans must interact with humans, with humans socially. Labor as a social being although also a personal being (individual). Workers as humans must be able to live together and be accepted by other workers, colleagues.

A group or social human community is knowing each other, knowing each other, caring for each other, helping each other, and giving each other. It all means mutual cooperation. A group of people working together is not necessarily formed as a social community, because they are only huddled together and do not know each other.

Sources include sources of danger. This can act as energy which is a source of life as well as a source of danger if it is used incorrectly, it will cause harm. All humans need costs or wages to meet the necessities of life, meet basic needs. Don't get unmanaged sources (don't manage risk) because it can cause an accident.

In the science of occupational health and safety, if you are able to align in between *environment*, *equipment*, people, and resources, then it is prevention (*preventive*) an accident occurs. It seems clear that an accident in a company affect production. As Febri Andrianto et al (2016) researched in one limited liability company in Sidoarjo, it was found that "2015 to 2016 tended to be decreased the frequency of work accidents by 25.7%, and experienced an increase production of 0.8%". Also, Suradi (2017) from the results of his research stated that "The work environment has a very close relationship that has that influence Significance between the effects of work accidents due to personal protective equipment and due to negligence human impact on the work environment and employee work productivity. Therefore, parties industrial management must have a commitment to rescue (*maintenance*) product, work tools/equipment and labor in industry. It is as a preventative measure accident. And the product can increase optimally.

## 4. CONCLUSION

*Maffordability* is the rescue of equipment and factory/industry people alias employees so that they remain in the initial conditions of production operations. It happens when there is accident prevention. Work accidents can be prevented by paying attention to several factors, namely: a. factory environmental factors, b. equipment and work equipment factor, c. energy management factors have a risk of danger, and d. human factor.

## 5. SUGGESTION

The industrial management must have a commitment to rescue (*maintenance*) to products, work tools/equipment, work environment and workforce in the industry, so that safe and smooth production process.

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