



## OCCUPATIONAL SAFETY IMPROVEMENT EFFORTS ON THE VESSEL OWNED BY PT. DIAN CIPTAMAS AGUNG SITE BERAU

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**Abstract:** PT. Dian Ciptamas Agung is a company engaged in the shipping industry as a provider of freight services by using the vessel and barge tugboat. Based on the data on the existing problems discussing the work accident on the vessel owned by PT. Dian Ciptamas Agung and the efforts made by the company in minimizing the work accident that occurred. The purpose of this research is to know the sources of work accidents that occur in order to improve the safety of work on vessels owned by PT. The great. The research was conducted by processing the data from investigative reports, the year of events news from 2018-2019 period. This shipping company needs to pay attention to the things that cause a work accident on the vessel so it can be done and pay attention to things that drive the crew to more discipline in working on the vessel

**Keywords:** Occupational safety

### INTRODUCTION

In this era of globalization nowadays, human resources are productive company in carrying out activities and routine. The company is required to have the ability to process human resources in a planned, especially as an operational personnel of the company to produce the power and power of results in every activity of the company. To get good results then the workforce must be knowledgeable and have adequate skills.

In an operational activity of a company, there are two interrelated slogans, namely safety first and production first. Perhaps for a shipping company that produces a service service, which is a major factor in the development of operational activities and also has some dangers in each of its activities.

Occupational safety and Health is one of the factors that affect employee work productivity. The productivity of Manusi resources is determined by the extent that existing systems in the enterprise are able to support and satisfy the wishes of the entire party. A good company is a company that really always pays attention to and guarantees the safety of its employees from occupational accidents and consequences arising from its working environment. Therefore, the company makes regulations on occupational safety that must be observed and implemented by all employees and leaders of the company. If violated there is strict sanctions for all employees. PT. Dian Ciptamas Agung. is a company engaged in the maritime industry as a provider of freight services by sea liner. The potential danger posed by the company is very large one of them is the sinking vessel and the impact of the vessel. While in the matter of safety according to my observations for almost a year when implementing the practice there, there are basically regulations that are in the form of a Standing Operation Procedure (SOP). But in its application, there are still crew members who do not obey the existing regulations. Though the supervisor as a responsible and coordinator who participated in the Work field has often reminded the importance of the regulation in anticipation of a work accident that is very unwanted, either by the worker itself or for the company.

#### Research Objectives and Benefits

##### 1. Research Objectives

- a. To know the efforts made in improving occupational safety.
- b. To determine the efforts of the company to improve the crew's understanding of occupational safety regulations.
- c. To determine the cause of the crew less disciplined in the work on the vessel

##### 2. Research Benefits

- a. To add insight on occupational safety regulations and safety equipment used at the time of the crew working on the vessel and in the provision of writers to apply knowledge in the workforce.
- b. As an input material for the company to take the future policy on the training of crew members, in particular to overcome the lack of crew members in the face of any existing hazards.
- c. To know the sources or causes of accidents that occurred in PT. Dian Ciptamas Agung.

## METHOD

### Data Descriptions

#### a. Training

Veithzal Rivai and Ella Jauvani Sagala (2010:211-212) define training as part of education that concerns the learning process to acquire and improve skills beyond the prevailing education system in a relatively short period of time with methods that are more focused on practice than theory.

#### b. Working Discipline

Work discipline is a tool that managers use to communicate with employees so that they are willing to change a behaviour as well as an effort to raise one's awareness and

willingness to obey all corporate regulations and applicable social norms. (Veithzal, 2006:444). Many are interpreting that discipline when employees always come and return home just in time. The opinion is only one that is demanded by the organization. Therefore, discipline can be interpreted as written or unwritten behavior. (Hasibuan, 2009:212)

c. Occupational Safety

Occupational safety in the process of production and distribution, both goods and services. One of the important aspects of occupational safety objectives, given the danger risk is the application of technology, especially advanced and cutting-edge technologies. Occupational safety is the duty of all working people. Occupational safety is from, by, and for every workforce and other people as well as the public in general.

### Research Time

This research was conducted at the time of the author doing ground practice in PT. Dian Ciptamas Agung from 06 August 2018 until 12 August 2019.

### Research Venue

This research was conducted by the author at PT. Dian Ciptamas Agung, Jl Gatot Subroto Ruko A1 Sei Bedungun District of Berau Tanjung Redeb East Kalimantan.

### Approach Method

In this case the authors use a qualitative descriptive method because the cause of the problem is not caused by a single factor but many factors so it is necessary to explain the factors. The use of this method is based on real or objective evidence and uses analysis and needs to be done systematically, orderly, orderly and carefully with all circumstances that occur, this is done to get good results and aims to solve the actual problems faced to collect data or information to be compiled, explained and analyzed.

### Data Collection Techniques

Data is something that is obtained through a method of collecting data that will be processed and analyzed with an investigation method which will then produce a thing that can describe or dedicate something. In qualitative research, the form of data is sentence of the subject or research respondent obtained through a data collection technique. Data collection techniques are conducted by the authors to obtain information and complete data and research objects that will be used by the authors to support completing the thesis.

a. Observation

Observation is a method of data collection where research records the information as they witnessed during research. The testimony of those events could be by seeing, hearing, sensing and then being recorded subjectively. (Gulo, 2002 : 116). In this technique, the authors use the research by directly visiting the places studied. In this observation researchers see directly at PT. Dian Ciptamas Agung.

b. Documentation

The document is a record of various activities or events at a time ago, all documents relating to the study concerned should be recorded as a source of information (Gulo,

2002:123). According to Prof. Dr. Suharsimi Arikunto (2006:158), the documentation originates from the origin of the document, meaning written goods.

Data collection by way of documentation studies is to view or analyze documents created by the subject itself or others about the subject. Documentation studies are one of the ways that qualitative researchers can get an overview of the object's perspective through a written medium and other documents written or made directly by the subject. Two forms of documents that can be used as material in the documentation study are personal documents and official documents.

### Research Subject

Population is a region or place that is the source of research. It was in strengthen by Sugiyono's opinion (2017:80), stating that the population is a generalization area consisting of objects or subjects that have certain qualities and characteristics set by researchers to learn and then withdrawn in conclusion. In this case, the population taken by the author in the preparation of this research is a work accident at PT. Dian Ciptamas Agung, which is as many as 10 occurrences.

## RESULTS AND DISCUSSION

### a. Data Description

To facilitate research, the author will convey a description of the data relating to the problems written by the author is a real picture as per the incident in the field. These data include about vessel accidents. The following is a description of the data on the issue of PT. Dian Ciptamas Agung.

### b. Case Study

In the study describing one of the accidents that occurred in PT. Dian Ciptamas Agung that the incident occurred because the crew did not wear personal protective equipment well, and lack of understanding and coordination between the crew and officers aboard the vessel. The incident resulted in injured victims with a collision on the head so that the injuries suffered there are lump and medical costs conducted by PT. Dian Ciptamas Agung amounting to Rp 32,000,000.00

**Table. 1**

No	Results of Investigation and Analysis
1	Incident occurred at 12.00 WITA
2	Location of incidents in the Segah Sports River Groove (N 02°09'113" – E 117°43'344")
3	There are injured victims on behalf of Darmawan (Able Seaman).
4	There are LSA <i>helmet</i> victims with a loose chin strap condition

**Source: PT. Dian Ciptamas Agung**

As a company with fleet and operating vessels, PT. Dian Ciptamas Agung will effectively and consistently implement safety management system as a commitment and assurance that the quality and reliability of the company in operating the vessel with prioritizing aspects of safety, protection against the marine life and environmental pollution as well as discipline and seriousness in implementing safety standards.

Type of vessel operated: Tug Boat

The company has established a safety management system in accordance with the requirements of the International Safety Management Code (ISM Code) to securely operate its fleet and protect against environmental pollution and has been implemented in all related work units on land and on board. The company promises and is solely responsible for implementing the safety management system and guarantees that all the personnel involved and the related sections, shipyards and crew members have been trained and educated to perform their duties in accordance with the requirements stated in the safety management system.

The company entrust the responsibility and authority to supervise/control the safety management system to a Quality and Safety Department which always monitors problems related to safety management and provide the necessary solutions in order to maintain and improve the company's safety management system. The company's safety management system policy is binding and all related work units (office and vessel) and its human resources in the company are obliged and responsible for the implementation and adhering to this policy.

The standards that exist in the company PT. Dian Ciptamas Agung in the field of Quality and Safety Department in the work area according to the quality Standards of safety management such as:

- a. Induction and familization for each new employee or crew.
- b. Equip the crew with LSA standard applicable in the work area
- c. Review management Program, safety meeting and others.
- d. Inspection and Audit

From the quality standard there are conditions in the work area, sample data on the accident that occurred on the vessel, and then found the results of the research as follows:

- a. Working Conditions on Board

In accordance with the research of data in the appendix that the vessel owned by PT. Dian Ciptamas Agung has fulfilled occupational safety standards on board in accordance with the SOP of occupational safety management. The offices on the vessel are:

- 1) Master

Master has the special authority and responsibility to make urgent decisions or actions at sea, for the sake of the safety of vessels, crew and for environmental protection despite not being appropriate / contrary to this written regulation

- a) Master had absolute power on the vessel and had full authority over all stages of operation in the sea, in the land and on the ground. Master had lawful authority to all the people on board.
- b) Master has the overall responsibility for the implementation of the vessel Safety Management system on board, and has responsibility and authority in the application of vessel safety management system.

## 2) Officers

All officers of the vessel shall be liable to the officer through the respective head of department and shall carry out all orders from the Master and from the department head.

## 3) Rating

Rating must perform well and with all their capabilities in all the legislation reserved from the law or officers of the officers in charge of.

However, it is undeniable that another cause is the human factor itself that is from the crew. For that the author emphasizes on the human factor itself.

Here are some data descriptions of the human factor itself:

In general PT. Dian Ciptamas Agung is as a shipping company that owns and operates vessels, by prioritizing quality to achieve perfection in the operation of the vessel and prioritizing aspects of safety as well as protection of the environment, and in this case PT. Dian Ciptamas Agung has collaborated with other companies including PT. Berau Coal as a mining company located along the Segah River to carry out the activities of coal Shipment for Transshipment around Muara Pantai by using a number of Tug & Barge The great. The main activities of Quality and Safety Departement are as coordinating for the implementation of safety management systems both on land and on the vessel are implemented consequently and responsible to the Branch Operation, with the following tasks:

- a. Implementing and maintaining the company's safety management system effectively and documenting all activities relating to the safety management system.
- b. Create an annual audit plan and perform a safety management system audit conducted every 6 (six) months on all departments and vessels.
- c. Investigating the occurrence of inconsistency/non-conformance reported in conjunction with the vessel and senior management of the land.
- d. Ensure that the rules and all related personnel completely master the safety management system.
- e. Create a program and hold a management review meeting and make a record to then distribute the results of the meeting to all related departments and vessels.
- f. Coordinate with the captains on routine issues regarding safety management systems.
- g. Identify training requirements relating to land and sea personnel involved with safety management systems.
- h. Conduct training related to the safety aspects of vessels and environmental protection.
- i. Monitor any discrepancies that occur and ensure that corrective/preventive measures have been performed properly.
- j. Responsible for coordinating the emergency Response team.
- k. Coordinate the Safety committee meeting every 3 (three) months and the review management meeting of 1 (one) time per year.

## DATA ANALYSIS

Analysis of data conducted using the method of Job Safety Analysis (JSA) or occupational safety analysis are as follows:

1. Choose a Job

From the results of the number of vessel accidents by Quality and Safety Departement, then it will be known the accident factor. Here is the data of the vessel accident owned by PT. Dian Ciptamas Agung:

**Table.2**

No.	Tanggal	Nama Perusahaan	Nama Armada	Waktu	Area	Kejadian Insiden
1	26 Desember 2018	PT. DCA	TB. Perkasa 11	13:50	Kelapa-kelapa	senggolan
2	06 January 2019	PT. DCA	TB. Perkasa 2	04:50	Muara Pantai	Terbeli Tali
3	24 January 2019	PT. DCA	TB. Selwyn	14.50	Jetty Suaran	Terbeli Tali
4	07 February 2019	PT. DCA	TB. Pancaran 315	21.45	Jetty Suaran	Kerusakan BG
5	15 February 2019	PT. DCA	TB. KSA 84	16.50	Transhipment	Terbeli Tali
6	17 February 2019	PT. DCA	TB. Mandiri 8	11.15	Lati, Kelapa - kelapa	Terbeli Tali
7	19 February 2019	PT. DCA	TB. KSA 100	15.15	Sukan	Benturan Barge
8	23 February 2019	PT. DCA	TB. KSA 58	05.50	Transhipment	Terbelit tali
9	08 Maret 2019	PT. DCA	TB. KSA 100	12.00	Alur Sokan	Terjatuh
10	11 Maret 2019	PT. DCA	TB. KSA 34	15.50	Jetty Sambarata	Terbeli Tali

From some data of the incident, the authors can analyze the cause of the vessel accident caused by several factors, namely the dominant factor is the direct Cause, which is a factor caused by the wrong human Deeds (Unsafe Uman Act), such as :

- a. Less caution in carrying out a job
- b. Do not know in using safety tools
- c. Not able to perform a job.

Therefore, to increase discipline of the crew on board in work and in the use of safety tools, it is hoped that the Quality and Safety Departement can improve the supervision of the crew and give the appeal about the dangers and consequences that will occur if not disciplined in the work and do not use the tools of work safety.

2. Outline the Work

In process outlining work is done to know the work step sequences of work activity based on Aturan-aturannya. This parsing describes the steps performed generally. The sequence of steps from work activity based on the order obtained based on the risk rating is as follows:

- a. Improved Crew discipline about occupational safety on board

Working on board is demanded a discipline arising from self-consciousness. For example, a rating who does not wear personal protective equipment, the reason deliberately does not use the Work Safety tool because it is only troublesome and makes the movement at work not free, because he thinks it is unnecessary. This is evidence that the rating's compliance/discipline is lacking. If rating's attitude can harm himself and his comrades, there needs to be action for the enforcement of discipline. Disciplinary enforcement measures can be done with a psychological approach between the officer and the subordinate, with supervision and counseling in a familiar and family at the time the rating will carry out its duties. In addition, this enforcement action can also be implemented with a warning system even to the termination or termination if it is completely harmful, and the rating has repeatedly violated the warning.

- b. Increased coordination of good work between superiors and subordinates:
  - a) Safety Committee Meeting  
Where at the meeting discussed various kinds of work safety, both in the deck and in the machine room.
  - b) Working Instruction  
Clear and assertive instruction from the leadership on the duties of each subordinate at the time of Duty (care) by making instructions that are later signed by each of the ABK in charge and if there are things that are not understood to be asked immediately before implementation.
  - c) Reporting  
Rating in charge must promptly report any matters found to be out of place or in the proper.

## **TROUBLESHOOTING ALTERNATIVES**

Based on the results of the observations that the author has done, it can be stated that training and supervision of the implementation of safety procedures has a role in reducing the number of vessel accidents. The retrieval of troubleshooting alternatives is a continuing process and is a challenge to be able to solve the solution or its resolution steps.

### **1. Crew less disciplined in work on board**

There are such troubleshooting alternatives are as follows:

- a. To improve oversight by the company periodically and scheduled to the crew in order to avoid undisciplined actions or attitudes.
- b. Awarding a reward to the crew who works well or punishment firmly against the crew found not carrying out the activities or occupations in accordance with the procedures or rules applicable by the company.

### **2. Lack of crew understanding regarding safety regulations on vessels**

As for the alternatives, the problem is as follows:

- a. To provide socialization to the crew of TB vessel. KSA 100 and all crew members belonging to PT. Dian Ciptamas Agung before and after working on the vessel.
- b. Provide training to the crew who will work on the vessel so as to understand and improve the knowledge crew.

## **EVALUATION OF ALTERNATIVE TROUBLESHOOTING**

From the troubleshooting alternatives that have been raised above, the authors try to evaluate the troubleshooting of the selected troubleshooting alternatives, which can be outlined as follows:

### **1. Less disciplined crew in the working vessel**

Improve supervision on all activities on the vessel TB. KSA 100 and other vessels.

The advantages and disadvantages of such troubleshooting alternatives are:

- 1) Advantages: By doing improving supervision by the Quality and Safety Departement is expected that the crew will be more optimal in watching whether the problem is found or has been the purpose of improving the discipline in the



work itself and quickly make decisions and report activities to the Office according to the situation and the actual conditions in the field.

- 2) Disadvantages: By increasing supervision required the number of qualified human resources and equal to the number of vessels that exist in PT. Dian Ciptamas Agung, which is currently not reached by the management of the company due to limited budget to add new employees.

Implementing system reward and punishment against all operational activities on board. The advantages and disadvantages of such troubleshooting alternatives are:

- 1) Advantages: By providing warnings or direct sanctions against the crew found doing activities that are not based on the procedure will make the crew more optimal and the achievement of the company's objectives in the work.
- 2) Disadvantage: Crew members who are unhappy with warnings or assertions will be unequivocally resigned from the company and the company must quickly find a replacement that matches the position and positions left.

2. Lack of crew understanding regarding safety regulations on the vessels
  - a. Provide training to the crew of TB. KSA 100 and all crew members belonging to PT. Dian Ciptamas Agung before and after working on the vessel.

The advantages and disadvantages of such troubleshooting alternatives are:

- 1) Advantages: By providing training to the crew of TB. KSA 77 and all crew members belonging to PT. Dian Ciptamas Agung before and after work on board is expected to make the crew better understand the safety procedures of shipping and the creation of safety and optimal in working.
- 2) Disadvantages: Lack of understanding the contents of the safety procedure itself by some trainers or employees who provide socialization on board.

- b. To provide socialization to the crew of TB vessels. KSA 100 and all crew members belonging to PT. Dian Ciptamas Agung before and after working on the vessel.

The advantages and disadvantages of such troubleshooting alternatives are:

- 1) Advantages: By providing socialization to the crew of TB. KSA 100 and all crew members belonging to PT. Dian Ciptamas Agung before and after work on board is expected to make the crew better understand the safety procedures of shipping and the creation of safety and optimal in working.
- 2) Disadvantages: Lack of understanding the content of safety procedures itself by some auditors who provide socialization on board.

## **TROUBLESHOOTING**

After the evaluation of each troubleshooting alternative then the author chooses one of each troubleshooting alternatives that is most appropriate after paying attention to the situation and condition of the subject's research.

1. Crew less disciplined in working on board

Branch Manager or head of operations need to improve monitoring and reward and punishment system on a scheduled basis for the operation of the fleet, especially the performance of vessel crew operated by the company PT. Dian Ciptamas Agung.

This is important because it is to know whether the crew performance is as expected.

The steps that can be used include:

- a. Implementing rewards and punishment for each crew member. This system will make the crew aware and will work according to its principal tasks and functions. The Reward itself will be given to the crew who worked well, and Punishment will be given to the crew who are not disciplined in working
- b. Conduct a scheduled supervision to check the performance of crew members working on board

2. Lack of crew understanding regarding safety regulations on vessels

The Quality and Safety Departement needs to improve the training and socialization of the scheduled safety management system within the company of PT. Dian Ciptamas Agung. This is important because to know if the crew understand about the safety management system that has been created by the company that has been implemented and implemented well by the personnel responsible in the company in particular the Quality and Safety Departement. The steps that can be used include:

- a. Provide training to crew members working on board to improve skills and knowledge on occupational safety
- b. Provide socialization to the crew before and after boarding by the company, especially by the Quality and Safety Departement so that the crew can understand and recall the rules and procedures of occupational safety stipulated by the company

## CONSLUSION

Based on the results of the research conducted on PT. Dian Ciptamas Agung Then the author draws conclusions:

1. The factors that cause a working accident are low discipline owned by the crew about the importance of the use of safety equipment that is still lacking. This is evidenced by the results of research indicating that the work accident caused by the crew who do not use the safety tools when performing the work. Surveillance activities by the company is instrumental in increasing the discipline of the crew members who work on the vessel so that the crew can work well and discipline.
2. Lack of understanding of the crew on the implementation of occupational safety procedures so that the crew do not understand the prevention or handling action in the event of a work accident on the vessel, as well as the absence of strict warnings or sanctions against the crew found not carrying out activities or jobs that are not in accordance with the procedures or rules applicable in the company. The implementation of occupational safety procedures is not fully implemented by each crew so that it is the cause of a work accident that occurs in PT. Dian Ciptamas Agung.

**BIBLIOGRAPHY**

- Danuasmoro, Goenawan, 2003, Kesehatan Keselamatan Kerja untuk Pelaut. Jakarta: Yayasan Bina Citra Samudera.
- Depdiknas, 2008, *Kamus Besar Bahasa Indonesia*, Jakarta: Gramedia Pustaka Utama.
- Dr. H.B. Siswanto, M.Si. *Pengantar Manajemen*. 2013. Jakarta: Bumi Aksara.
- Kosasih, Engkos dan Hananto Soewedo, 2007, *Manajemen Keuangan & Akuntansi Perusahaan Pelayaran*, Jakarta: RajaGrafindo Persada.
- Modul International Safety Management. (Kode Manajemen Keselamatan Internasional)*. 2000 Jakarta: Badan Diklat Perhubungan, DEPHUB.
- Republik Indonesia, *Undang-Undang No.1 Tahun 1970 Tentang Keselamatan Kerja*.
- Republik Indonesia, 2010, *Undang-Undang No. 17 Tahun 2008 Tentang Pelayaran*, Bandung: Citra Umbara.
- Republik Indonesia, 2010, *Peraturan Pemerintah no 20 Tahun 2010 Tentang Angkutan Perairan*, Bandung: Citra Umbara.
- Rivai, Veithzal, 2009, *Manajemen Sumber Daya Manusia untuk Perusahaan*. Jakarta : RajaGrafindo Persada.
- Suma'mur P.K, 1981, *Keselamatan Kerja & Pencegahan Kecelakaan*. Jakarta : Haji Masagung.
- Undang-Undang R.I Nomor 17 Tahun 2008 Tentang Pelayaran*. 2008. Bandung : Citra Umbara.
- Wirawan, 2009, *Evaluasi Kinerja Sumber Daya Manusia*, Jakarta: Salemba Empat.