WORK SAFETY MANAGEMENT IMPROVEMENT IN PRODUCTION SECTION OF PT. DAMAR LARAS CIPTA USING HIRARC METHOD

UNDERGRADUATE FINAL PROJECT

Submitted as one of the requirement to obtain Sarjana Teknik (S.T)

Submitted by

Fitri Meylany Riswandi

ID No. 004202000056

FACULTY OF ENGINEERING

INDUSTRIAL ENGINEERING STUDY PROGRAM

CIKARANG, JUNE, 2024

TURNITIN CHECK RESULTS

Fitri Meylany Riswandi_004202000056_Final Project.pdf

ORIGINALITY REPORT

9%	5%	1%	5%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	repository.president.ac.id Internet Source	1%
2	Submitted to University of Hertfordshire Student Paper	1%
3	ejurnal.ung.ac.id Internet Source	<1%
4	dspace.uii.ac.id Internet Source	<1%
5	Submitted to Chartered Institute of Personnel Management CIPM Student Paper	<1%
6	Submitted to Middlesex University Student Paper	<1%
7	Submitted to University of Southern Queensland Student Paper	<1%
8	Submitted to Coventry University Student Paper	<1%
9	www.coursehero.com	

GPT ANTI-PLAGIARISM CHECK RESULTS



ABSTRACT

Occupational Health and Safety (OHS) is an important part of the workplace that must be taken seriously. PT Damar Laras Cipta, a contractor and interior design company, understands the importance of safety and security in their operations. Based on work accident data, there are incidents at PT Damar Laras Cipta over the past 1 month, and there was a spike in june 2023 is 2 high cases. Therefore, reducing the high accidents that often occur is one way to increase efficiency and production rate. To solve the problem for reducing accidents is to identify the hazards, then conduct a risk assessment to find out how likely it is, then mitigate the possibility, then we do ERM maturity to reduce risks in the future. Currently, PT Damar Laras Cipta has detected a significant increase in work accidents in the activities of 4 production sections. Several processes are carried out to reduce work accidents and prevent problems from the root of the current problem, namely work area and human factors. The research was conducted using several methods such as Hirarc method, Rasci Matrix, Erm Maturity level. The results of determining the cause will be followed by solutions and improvements. Significant improvements have been made since the adoption of targeted mitigation measures for hazards R2 (employees crushed by cupboard) and R4 (exposed to Musculoskeletal Disorder). The risks connected with these hazards have been successfully reduced from high to moderate.

keyword: Occupational safety, k3, HIRARC, hazard identification, risk assessment, risk control.

TABLE OF CONTENTS

PANEL OF EXAMINER APPROVAL ..... *ii*

THESIS ADVISOR ..... *iii*

RECOMMENDATION LETTER ..... *iii*

STATEMENT OF ORIGINALITY ..... *iv*

SCIENTIFIC PUBLICATION APPROVAL FOR ..... *v*

ACADEMIC INTEREST ..... *v*

ADVISOR APPROVAL ..... *vi*

FOR JOURNAL/INSTITUTION'S REPOSITORY ..... *vi*

SIMILARITY CHECKING RESULT ..... *viii*

ABSTRACT ..... *ix*

ACKNOWLEDGEMENT ..... *x*

LIST OF TABLE ..... *xii*

LIST OF FIGURE ..... *xiv*

CHAPTER I *1*

INTRODUCTION *1*

1.1 Problem Background **1**

1.2 Research Questions **2**

1.3 Objective **3**

1.4 Scope **3**

1.5 Assumptions **3**

CHAPTER II *5*

LITERATURE STUDY *5*

2.1 Overview of Occupational Health and Safety (OHS) **5**

2.1 Occupational Accident **5**

2.1.2 Safety Policies and Procedures 7

2.1.3 Safety Equipment Inventory. 9

2.2 Initiatives to improve safety **9**

2.2.1 OHS Objectives 9

2.2.2 OHS Terminology 10

2.3 Induction **11**

2.3.1 Toolbox Meeting and HSE Talk 12

2.3.2 Regulations for Sub-Contractors 12

2.3.3 Inspection and Patrol 12

2.3.4 Safety Meetings 13

2.4 Incident and Accident Reports **13**

2.5 Hirarch Method **14**

2.5.1 Risk Matrix Scale **14**

2.5.2 Hazard Identification 14

2.5.3 Risk Control 19

2.6 JSA (Job Safety Analysis) **21**

2.7 RASCI MATRIX **23**

2.8 ERM Maturity Model **26**

CHAPTER III *29*

RESERCH METHODOLOGY *29*

3.1 Research Methodology **29**

3.1.1 Theoretical Framework 29

3.1.2 Initial Observation 30

3.1.3 Problem Identification 30

3.1.4 Literature Study 30

3.1.5 Data Collection 31
3.1.6 Data Analysis 31
3.1.7 Conclusion and Recommendation 32

CHAPTER IV *33*

DATA COLLECTION AND DATA ANALYSIS *33*

4.1 Factory Area 33
4.1.1 Spraying and Sanding Area 33
4.1.2 The Oven Area 34
4.1.3 Packing Area 34
4.1.4 Material Area 35
4.1.5 Cutting Area 35
4.1.6 Raft Area 36

4.2 Number Of Accident per Year 36
4.2.1 Number of production workers and working hours 37

4.3 Current System Job Safety Analysis 43
4.3.1 JOB SAFETY ANALYSIS 44

4.4 Hazard Identification 48
4.4.1 Hazard Identification Low Risk Level 49
4.4.2 Hazard Identification Middle Risk Level 50
4.4.3 Hazard Identification High Risk Level 52
4.4.4 Hazard Identification and Risk Assesment in Material Dept 53
4.4.5 Risk Control 57

4.5 RASCI Matrix For Each Departement 61
4.5.1 RASCI Matrix Result 62

4.6 Maturity Level in Every Departement 63
4.7 Risk Mitigation 67

4.8 Improvement 70

CHAPTER V *71*

CONCLUSION *71*

5.1 Conclusion **71**

5.2 Recommendation **72**

CHAPTER VI ***73***

REFERENCES ***73***

APPENDIX ***74***

LIST OF TABLE

Table 2.1 Risk Matrix Scale 14
Table 2.2 Low Risk Level 17
Table 2.3 Middle Risk Level 18
Table 2.4 High Risk Level 18
Table 2.5 Risk Control 19
Table 2.6 Risk Appatite 20
Table 2.7 Job Safety Analysis 22
Table 2.8 Rasci Matrix 25
Table 2.9 Rasci Matrix 26
Table 4.1 Number Of Accident Per Year 36
Table 4.2 Number of Production Worker and Working Hour 37
Table 4.3 Description Of Work Accident and Lost Day 2021 39
Table 4.4 Description Of Work Accident and Lost Day 2022 40
Table 4.5 Description Of Work Accident and Lost Day 2023 41
Table 4.6 Job Safety Analysis Material 44
Table 4.7 Job Safety Analysis Raft 45
Table 4.8 Job Safety Analysis Finishing 46
Table 4.9 Job Safety Analysis Packing 47
Table 4.10 Low Risk Level 51
Table 4.11 Middle Risk Level 52
Table 4.12 High Risk Level 53
Table 4.13 Risk Assesment Material dept 54
Table 4.14 Risk Assesment Raft dept 55
Table 4.15 Risk Assesment Finishing dept 56
Table 4.16 Risk Assesment Packing dept 57
Table 4.17 Risk Control Material 57
Table 4.18 Risk Control Raft 58

Table 4.19 Risk Control Finishing 59
Table 4.20 Risk Control Packing 60
Table 4.21 Rasci 62
Table 4.22 Maturity Level 65
Table 4.23 High Maturity level 66
Table 4.24 Risk Appetite 67
Table 4.25 Risk Mitigation 68
Table 4.26 Improvement of the mitigation 70

LIST OF FIGURE

Figure 2.1 Police and Procedure	8
Figure 2.2 Safety First	10
Figure 2.3 Hazard Terminology	11
Figure 2.4 Risk Identification	16
Figure 4.1 Spraying and Sanding Area	33
Figure 4.2 The Oven Area	34
Figure 4.3 Packing Area	34
Figure 4.4 Meterial Area	35
Figure 4.5 Cutting Area	35
Figure 4.6 Raft Area	36
Figure 4.7 Work Accident and Lost Days 2021	42
Figure 4.8 Work Accident and Lost Days 2022	43
Figure 4.9 Work Accident and Lost Days 2023	43
Figure 4.10 Maturity Leve	64