

**ANALYSIS OF ACCIDENTS IN SHIFT WORK IN  
CONTAINER TERMINALS IN SRI LANKA**

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Degree of Master of Science in Occupational Safety and Health  
Management

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Dissertation was submitted in partial fulfilment of the requirements for the degree  
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## DECLARATION

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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Signature of the supervisor:

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## ABSTRACT

Being one of the most competitive industries in globally, the port industry requires high efficiency rate at all levels of operation. In such circumstances, container terminals play a leading role. The competition among container terminals demands a high productivity and mainly it is achieved by increasing the efficiency of labor force. As a result, shift work has been functioning in container terminals at all levels of operation.

However, it has been founded that shift work has a negative impact on health and safety of employees. It affects the accident frequency in work places. Therefore this study focuses on finding the impact of shift work on accidents in container terminals in Sri Lanka.

At first, a comprehensive literature review was carried out to investigate the knowledge on the research area. Consequently, occupational health and safety management at work places, container terminal operation, prevailing hazards in terminals, shift work and effects of shift work for the accident frequency in different work places were reviewed.

A mixed approach was adopted to capture quantitative and qualitative data for this study. Therefore, quantitative data was collected from AIR (Accident Investigation Report) data base of ABC container terminal for a period of five years from 2012 to 2016 and expert interview survey was carried out in order to capture the qualitative data. Finally, the quantitative data was analyzed using statistical techniques while qualitative data was analyzed via logical reasoning to identify relationships between accidents, activities relevant to accidents, impacts, severity, causes of accidents and work groups and further to investigate the relationship between shift work and accident frequency.

Research findings asserted that, there is an effect of shift work on accidents in container terminals. But it was unable to quantify the effect using available data. However, there is a potential to do a further study on workers, who have been identified to be responsible for high accident frequency.

*Key Words: Accident Frequency, Port Industry, Sri Lanka, Container Terminals, Impact of Shift Work*

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## TABLE OF CONTENTS

DECLARATION .....	i
ABSTRACT .....	ii
ACKNOWLEDGEMENT .....	iii
TABLE OF CONTENTS .....	iv
LIST OF FIGURES .....	viii
LIST OF TABLES .....	ix
LIST OF ABBREVIATIONS .....	x
LIST OF APPENDICES .....	xi
CHAPTER 1: INTRODUCTION .....	1
1.1 Background .....	1
1.2 Research Problem.....	3
1.3 Aim.....	6
1.4 Objectives.....	6
1.5 Research Methodology.....	6
1.6 Scope And Limitation .....	6
1.7 Chapter Breakdown.....	7
CHAPTER 2: LITERATURE REVIEW .....	8
2.1 Introduction .....	8
2.2 The Concept Of Occupational Health And Safety .....	8
2.2.1 Managing Health And Safety At Work Places .....	9
2.2.2 Classification Of Work Place Accidents And Causes Of Accidents .....	9
2.3 Historical Overview Of Container Terminals .....	11
2.4 Structure And Operation Of A Container Terminal.....	12
2.5 Handling Equipment .....	12

2.6 Health And Safety Conditions Of Workers In Container Terminals .....	13
2.7 Common Hazards And Risks That Exist In Container Terminals .....	14
2.7.1 Falls From Height .....	14
2.7.2 Falling Objects .....	15
2.7.3 Fire/Electrocution.....	15
2.7.4 Lifting Equipment .....	15
2.7.5 Hazardous Or Asphyxiate Substances .....	17
2.7.6 Moving Vehicles And Equipment.....	17
2.7.7 Slips And Trips .....	18
2.7.9 Night/Shift Work.....	18
2.8 Understanding Shiftwork .....	19
2.9 Effects Of Shiftwork .....	20
2.9.1 Health Effects.....	20
2.9.2 Individual Effects (Degradation of Family Life) .....	23
2.9.3 Accidents.....	24
2.10 Summary .....	25
<b>CHAPTER 3: RESEARCH METHODOLOGY .....</b>	<b>27</b>
3.1 Introduction .....	27
3.2 Research Process .....	27
3.3 Research Approach .....	28
3.4 Research Strategy.....	28
3.4.1. Case Study Strategy .....	28
3.4.2 Survey Strategy .....	29
3.5 Data collection .....	30
3.5.1 Data Collection Of Case Study .....	30
3.5.2 Analysis Of Quantitative Data .....	33

3.5.3 Data Collection Of Expert Survey: Semi Structured Interviews .....	35
3.6 Summary .....	36
CHAPTER 4: DATA ANALYSIS, FINDINGS AND DISCUSSION.....	37
4.1 Introduction.....	37
4.2 Incidents In ABC Container Terminal .....	37
4.3 Types Of Incidents .....	38
4.4 Incidents Occurring Patterns According To Month And Week.....	39
4.4.1 Incidents Occurred By Month.....	39
4.4.2 Incidents Occurred By Week .....	43
4.4.3 Discussion On Frequency And Type Of Incidents And Incidents Occurring Patterns.....	45
4.5 Relationship Between Incidents And Shift Work .....	46
4.5.1 Available Groups And Shifts In The Selected Terminal And Their Activities .....	46
4.5.2 Distribution Of Incidents By Work Group And Type .....	47
4.5.3 Distribution Of Incidents Occurred By Time.....	48
4.5.4 Discussion On Relationship Between Type Of Incident And Work Group, Occurring Time Of Day .....	52
4.6 Activities Related To Incidents And Their Impacts.....	53
4.6.1 Type Of Impact Of Accidents .....	53
4.6.2 Type Of Activities Related To The Incidents .....	56
4.6.3 Relationship Between Activities Related To The Accidents And Their Impacts .....	58
4.6.4 Level Of Severity Of Incidents .....	61
4.6.5 Discussion On Relationship Between Accidents, Impacts, Activities And Level Of Severity .....	64
4.7 Causes Of Incidents.....	65



4.7.1 Cause Of Incidents By Type .....	67
4.7.2 Activity Of Incident By Cause Of Incident.....	70
4.7.3 Discussion On Causes Of Incidents .....	72
4.8 Further Analysis Of Incidents On Shift Work .....	74
4.8.1 Discussion On Further Analysis Of Incidents On Shift Work.....	78
4.9 Incident Reporting Status .....	79
4.9.1 Discussion On Reporting Culture Of The Organization .....	83
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS .....	84
5.1 Introduction .....	84
5.2 Conclusions .....	84
5.3 Recommendations .....	86
5.4 Further Research And Future Directions .....	87
Reference List .....	88
Appendix A: Summary of Factors Influencing Incident.....	94
Appendix B: Questionnaire (Interview Guide) .....	133

## LIST OF FIGURES

<i>Figure 3.1 : Research Framework.....</i>	<i>27</i>
<i>Figure 4.1 : Percentage distribution of type of incident by year .....</i>	<i>39</i>
<i>Figure 4.2 : Incidents occurred by type and month .....</i>	<i>40</i>
<i>Figure 4.3 : Distribution of accidents occurred by month and year .....</i>	<i>42</i>
<i>Figure 4.4 : Incidents occurred by days of week .....</i>	<i>44</i>
<i>Figure 4.5 : Incidents occurring pattern in years by time slots.....</i>	<i>50</i>
<i>Figure 4.6 : Accidents occurring pattern in years by time slots .....</i>	<i>51</i>
<i>Figure 4.7 : Severity Matrix.....</i>	<i>61</i>
<i>Figure 4.8: Patterns of causal factors during calendar month .....</i>	<i>70</i>
<i>Figure 4.9 : Percentage distribution of accidents by reporting status and year .....</i>	<i>80</i>

## LIST OF TABLES

Table 3.1: Variables, data sources and method of extraction/ &computation	32
Table 4.1: Distribution of incidents by type and year	38
Table 4.2: Distribution of accidents occurred by month and year	41
Table 4.3: Distribution of incidents occurred by day of week	43
Table 4.4 : Distribution of incidents by work group and type	47
Table 4.5 : Distribution of incidents occurred by time of the day	48
Table 4.6: Distribution of incidents occurred time by year	49
Table 4.7: Distribution of accidents occurred time by year	51
Table 4.8: Impact type of accidents	54
Table 4.9: Impact of accidents in broader categories	55
Table 4.10: Major activity by type of incident	57
Table 4.11: Impact by activity of the accident	59
Table 4.12: Level of severity by type of incident	62
Table 4.13: Level of severity of accidents by activity	63
Table 4.14: Cause of incidents	66
Table 4.15: Cause of incidents by type	67
Table 4.16: Distribution of accidents by cause and work group	68
Table 4.17: Percentage distributions of accidents which influenced by causes	69
Table 4.18: Activity of incident by type of cause	71
Table 4.19: Incidents occurred in time and work group by type	74
Table 4.20: Accidents occurred in time and work group by severity	76
Table 4.21: Accidents occurred in time and work group by cause	77
Table 4.22: Distribution of accidents by reporting status and year	79
Table 4.23: Distribution of accidents by work group and reporting status	81
Table 4.24: Distribution of accidents by impact and reporting status	82

## **LIST OF ABBREVIATIONS**

<b>Abbreviation</b>	<b>Description</b>
AIR	Accident Investigation Report
ILO	International Labour Organisation
WHO	World Health Organisation
HSE	Health Safety Executive
IOHA	International Occupational Health Association
OHS	Occupational Health and Safety
IARC	International Agency for Research on Cancer
TEU	Twenty Foot Equivalent Unit

## **LIST OF APPENDICES**

Appendix	Description
Appendix A	Summary of Factors Influencing Incident
Appendix B	Questionnaire (Interview Guide)