	UNIVERSI	ΓΙ ΤΕΚΙ	NOLOGI N	IALAYSIA	
BORANG PENGESAHAN STATUS TESIS v					
JUDUL:	CRITICAL CAU	SES OF	ACCIDEN	T UNDER REPORT	ING
	IN MALAYSIA C	CONSTR	UCTION I	NDUSTRY	
	SESI PEN	GAJIAN	:20	06 / 2007	
Saya		ANDY	Y LIM SAY	WAI	
		(H)	URUF BESA	R)	
mengak Perpusta berikut:	u membenarkan tesis akaan Universiti Tekn	(PSM / S ologi Mal	Sarjana/ Dok laysia dengar	tor Falsafah)* ini disim syarat-syarat kegunaan	pan di seperti
 Terestation Perturbation Pertur	sis adalah hakmilik Univ pustakaan Universiti T ian pengajian sahaja. pustakaan dibenarkan itusi pengajian tinggi. Sila tandakan (✓)	versiti Tekr Seknologi membuat	nologi Malays Malaysia dib salinan tesis in	a. enarkan membuat salinan ni sebagai bahan pertukarar	untuk 1 antara
	SULIT	(Mengan atau kep dalam (A	dungi maklur entingan Mal KTA RAHSL	nat yang berdarjah kesel aysia seperti yang termal A RASMI 1972)	amatan ctub di
	TERHAD	(Mengano ditentuka dijalanka	dungi makl n oleh organi n)	umat TERHAD yang sasi/ badan di mana penye	telah lidikan
\checkmark	TIDAK TERHAD	5	,		
	1			Disahkan oleh	
(TA)	NDATANGAN PENUL Tetan:	IS)	(TAN	IDATANGAN PENYELIA	 .)
<u>11, JAI</u>	LAN LEMBING 15,				
TAMAN PUTERI WANGSA,		А,	IR. DI	R. ROSLI MOHAMAD	ZIN
<u>81800 l</u>	JLU TIRAM, JOHO	R.		Nama Penyelia	
Tarikh	: APRIL 2007		Tarikh:	: APRIL 2007	

CATATAN: * Potong yang tidak berkenaan.

** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa/ organisasi berkenaan dengan menyatakan sekali sebab dan tempoh tesis ini perlu dikelaskan sebagai SULIT atau TERHAD.

v Tesis dimaksudkan sebagai tesis bagi Ijazah Doktor Falsafah dan Sarjana secara penyelidikan, atau disertasi bagi pengajian secara kerja kursus dan penyelidikan, atau Laporan Projek Sarjana Muda (PSM). "I hereby declare that I have read this project report and in my opinion this project report is sufficient in terms of scope and quality for the award of the degree of Master of Science (Construction Management)."

Signature:Name of Supervisor : Ir. Dr. Rosli Mohamad ZinDate:

CRITICAL CAUSES OF ACCIDENT UNDER REPORTING IN MALAYSIA CONSTRUCTION INDUSTRY

ANDY LIM SAY WAI

A project report submitted in partial fulfillment of the requirements for the award of the degree of Master of Science (Construction Management)

> Faculty of Civil Engineering Universiti Teknologi Malaysia

> > APRIL 2007

I declare that this project report entitled "*Critical Causes of Accident Under Reporting in Malaysia Construction Industry*" is the result of my own research except as cited in the references. The report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature	:
Name	: Andy Lim Say Wai
Date	:

To my beloved wife, Swee Yin

ACKNOWLEDGEMENTS

First of all, I would like to express my sincere appreciation to my project supervisor, Ir. Dr. Rosli Mohamad Zin of the Faculty of Civil Engineering, Universiti Teknologi Malaysia, for his generous advice, patience, guidance and encouragement during the years of my study.

I would like to express my sincere thanks to all the contractors, clients, consultants, and safety officers who generously spent their precious time to participate the interview of my project data collection and comment to my work. Their opinions and comments are useful indeed. My seniors and friends, who have provided assistance in arranging the interviews and at various occasions, also deserve my special thanks.

Finally, I am most thankful to my parents and family for their support and encouragement given to me unconditionally in taking this project report.

Without the contribution of all those mentioned above, this work would not have been possible.

ABSTRACT

All construction employers in Malaysia are required to have an injury reporting system that ensures all workplace parties are aware of how to report a work-related injury to the authorities and to the appropriate persons designated by the employer. Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning And Occupational Disease) Regulations 2004 is stated in Occupational Safety and Health Act 1994. Part II of this regulation stated the conditions when the notification and reporting of accident and dangerous occurrence arising out of or in connection with work should be made. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) requires the reporting of work-related accidents, diseases and dangerous occurrences. The information enables the enforcing authorities to identify where and how risks arise and to investigate serious accidents. The aim of the study is to identify the critical causes of accident under reporting in Malaysia construction industry. The study was done within the Malaysian construction industry and a questionnaire is designed. The methodology of the study involves document studies of existing accident reporting procedure, questionnaire survey, and face to face interview with safety officer. Data was analyzed using statistical method included frequency and average index analysis. At the end of the thesis, a list of critical causes of accident underreporting in Malaysia construction industry is identified and recommendations are given as a summary of this research. This will be useful by construction companies in improving their accident reporting system.

ABSTRAK

Semua majikan syarikat pembinaan di Malaysia perlu mengamalkan sistem pelaporan kemalangan yang berlaku di tapak pembinaan. Ini adalah penting untuk memastikan pihak majikan peka akan cara-cara melaporkan kes kecederaan yang berlaku di tapak pembinaan kepada pihak berkuasa dan kepada pakar-pakar tertentu yang ditetapkan oleh pihak majikan. Peraturan Keselamatan dan Kesihantan Pekerjaan (Pemberitahuan Mengenai Kemalangan, Kejadian Berbahaya, Keracunan Pekerjaan dan Penyakit Pekerjaan) 2004 telah dinyatakan dalam Akta Keselamatan dan Kesihatan Pekerjaan 1994. Bahagian II peraturan ini menyatakan tentang pemberitahuan dan pelaporan mengenai kemalangan dan kejadian berbahaya yang berkaitan dengan kerja. Pelaporan Kecederaan, Penjangkitan dan Kejadian Bebahaya 1995 (RIDDOR) memerlukan pelaporan tentang kemalangan, penjangkitan dan kejadian berbahaya yang berlaku berkaitan dengan kerja. Maklumat ini membolehkan pihak berkuasa mengambil langkah untuk memahami di mana dan bagaimana keberbahayaan berbangkit. Matlamat penyelidikan ini adalah untuk menyiasat sebab-sebab kritikal yang menyebabkan ketidaklaporan kes-kes kemalangan di tapak pembinaan di Malaysia. Lingkungan pengajian ini termasuklah industri pembinaan di Malaysia dan soalan soal selidik telah disediakan. Metodologi pengajian ini termasuklah mengkaji prosedur pelaporan kes-kes kemalangan yang sedia ada dalam industri pembinaan, cara soal selidik, dan temuduga dengan pegawai keselamatan bagi memperolehi maklumat-maklumat yang secukupnya. Cara statistik seperti kekerapan dan analisa purata indeks digunakan untuk menganalisa data diperolehi. Di bahagian akhir tesis ini, senarai sebab kritikal menyebabkan ketidaklaporan kes-kes kemalangan bersama-sama dengan saranan mengatasi masalah ini telah di paparkan. Ini membolehkan para majikan pembinaan memperbaiki sistem pelaporan kemalangan yang mereka amalkan sekarang.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
]	DECLARATION	ii
]	DEDICATION	iii
1	ACKNOWLEDGEMENTS	iv
1	ABSTRACT	V
1	ABSTRAK	vi
r	TABLE OF CONTENTS	vii
]	LIST OF TABLES	xii
]	LIST OF FIGURES	xiv
]	LIST OF ABBREVIATIONS	XV
]	LIST OF APPENDICES	xvi

1 INTRODUCTION

1.1	Introduction	1
1.2	Problem Background	2
1.3	Problem Statement	3
1.4	Research Objectives	4
1.5	Scope of Study	4
1.6	Methodology	5

2 LITERATURE REVIEW

2.1	Introduction	6
2.2	Accident Reporting System of Department of	6
	Occupational Safety and Health (DOSH)	

	2.2.1	Occupational Safety and Health Act 1994 7	
	2.2.2	Occupational Safety and Health Act	7
		1994-Part 1 Preliminary	
	2.2.3	Occupational Safety and Health Act 1994-Part 2:	10
		Notification and Reporting of Accident, Dangerous	
		Occurrence, Occupational Poisoning and	
		Occupational Disease	
	2.2.4	Occupational Safety and Health Act 1994-Part 3:	12
		No Interference at Accident or Dangerous	
		Occurrence Scene	
	2.2.5	Occupational Safety and Health Act 1994-Part 4:	13
		Maintenance of All Records of Accident,	
		Dangerous Occurrence, Occupational Poisoning	
		and Disease	
	2.2.6	Occupational Safety and Health Act 1994-Part 5:	14
		Miscellaneous	
2.3	RIDD	OR Reporting System	17
	2.3.1	Completion of the Report Form	22
	2.3.2	Investigation of Accident/ Incident	23
	2.3.3	General accident investigation procedures	23
	2.3.4	Different categories of accident investigation	24
		procedure	
2.4	Accid	ent reporting figures	28
	2.4.1	Accuracy of Reporting Figures Within the UK	28
	2.4.2	Accuracy of Reporting Figures in Other	30
		Countries	
	2.4.3	Fatal Accidents	31
	2.4.4	Non Fatal Accidents	32
2.5	Factor	rs Influencing Accuracy of Accident Reporting	35
2.6	Type of	of Injury	36
	2.6.1	Eye Injury	36
	2.6.2	Musculoskeletal Disorders	36
2.7	Factor	rs that Influence the Success of Implementation	38
	Accid	lent Reporting System	

2.7.1	Safety I	ncentive Programs	38
	2.7.1.1	Prevalence of Programs	38
	2.7.1.2	Preserve Motivations to Under Report	39
2.7.2	Safety C	Culture	41
	2.7.2.1	Reporting Systems	43
	2.7.2.2	Employer and employee attitudes	45
		towards accident reporting	
2.7.3	Workpla	ace violence/ bullying	47
2.7.4	Problem	as of using accident data as performance	48
	indicato	r	
Sumn	nary of ca	uses of construction accident	50
under	reporting		

3 METHODOLOGY

2.8

4

3.1	Introd	uction	53
3.2	Litera	ature review	53
3.3	Docur	nent study	54
3.4	Questi	ionnaire survey	54
	3.4.1	Introduction	54
	3.4.2	Sample of Study	55
	3.4.3	Data Analysis and establish a framework of	55
		Critical factors for successful implementation	
		Of accident reporting system	
		3.4.3.1 Average Index	55
	3.4.4	Establishment of a framework of critical	56
	causes	5	
3.5	Interv	iew with safety officer	57
3.6	Concl	usion and Recommendation	57
RESU	LTS A	ND DISCUSSION	
4.1	Introd	uction	58
4.2	Docur	nent study	58

4.2.1 Example 1: Accident reporting procedure of 59

		Syarikat Taj Bena Sdn. Bhd	
	4.2.2	Example 2: Accident reporting procedure of	64
		KSL Holdings Bhd.	
	4.2.3	Example 3: Accident reporting procedure of	69
		Shiya Sdn. Bhd.	
	4.2.4	Review of the accident reporting procedures	73
4.3	Result	s of questionnaire survey	74
	4.3.1	Introduction	74
	4.3.2	Human factors	75
	4.3.3	Accident reporting system factors	84
	4.3.4	Time factors	91
	4.3.5	Organization factors	100
4.4	Frame	work of critical causes of accident	109
	under	reporting in Malaysia construction industry	
	4.4.1	Ranked order of critical factors by contractors	109
	4.4.2	Ranked order of critical factors by consultants	112
	4.4.3	Ranked order of critical factors by clients	115
	4.4.4	Ranked order of critical factors by Safety officers	118
4.5	Interv	iew with safety officer	122
	4.5.1	Safety culture	122
	4.5.2	Safety incentive programs	123
	4.5.3	Employees' perception of accident reporting	124
4.6	Concl	usions	124

5 CONCLUSIONS AND RECOMMENDATIONS

5.1	Introduction	125
5.2	Comparisons of the existing accident reporting procedures	125
5.3	Questionnaire survey	126
5.4	Interview with a safety officer	127
5.5	Recommendation	127
5.6	Recommendation for future study	129

REFERENCES	130
APPENDICES	138

LIST OF TABLES

TABLE	TITLE	PAGE
4.1	Responses to human factors from contractors	76
4.2	Ranked important of human factors by contractors	77
4.3	Responses to human factors from consultants	78
4.4	Ranked important of human factors by consultants	79
4.5	Responses to human factors from clients	80
4.6	Ranked important of human factors by clients	81
4.7	Responses to human factors from safety officers	82
4.8	Ranked important of human factors by safety officers	83
4.9	Responses to Accident Reporting System factors from contractors	s 84
4.10	Ranked important of Accident Reporting System factors by	85
	contractors	
4.11	Responses to Accident Reporting System factors from consultant	s 86
4.12	Ranked important of Accident Reporting System factors by	87
	consultants	
4.13	Responses to Accident Reporting System factors from clients	88
4.14	Ranked important of Accident Reporting System factors by client	ts 89
4.15	Responses to Accident Reporting System factors from safety	90
	officers	
4.16	Ranked important of Accident Reporting System factors by safety	y 91
	officers	
4.17	Responses to time factors from contractors.	93
4.18	Ranked important of time factors by contractors	94
4.19	Responses to time factors from consultants	95
4.20	Ranked important of time factors by consultants	96
4.21	Responses to time factors from clients	97

4.22	Ranked important of time factors by clients	98
4.23	Responses to time factors from safety officers	99
4.24	Ranked important of time factors by safety officers	100
4.25.	Responses to organization factors from contractors	101
4.26	Ranked important of organization factors by contractors	102
4.27	Responses to organization factors from consultants	103
4.28	Ranked important of organization factors by consultants	104
4.29	Responses to organization factors from clients	105
4.30	Ranked important of organization factors by clients	106
4.31	Responses to organization factors from safety officers	107
4.32	Ranked important of organization factors by safety officers	108
4.33	Ranked order of critical factors by contractors	110
4.34	Ranked order of critical factors by consultants	113
4.35	Ranked order of critical factors by clients	116
4.36	Ranked order of critical factors by safety officers	119

LIST OF FIGURES

TITLE

FIGURE

1.1	Research methodology flow chart	5
2.1	An example of accident reporting procedure (www.riddor.uk)	20
2.2	An example of emergency action plan to be followed by	21
	employees in the event of a serious accident or emergency	
	on or off-site. (www.riddor.uk)	
4.1	Accident reporting flowchart for Syarikat Taj Bena Sdn. Bhd.	62
	(Adopted from Monthly Safety Report of October 2006,	
	Syarikat Taj Bena Sdn. Bhd.)	
4.2	Accident report form for Syarikat Taj Bena Sdn. Bhd.	63
	(Adopted from Monthly Safety Report of October 2006,	
	Syarikat Taj Bena Sdn. Bhd.)	
4.3	Flowchart of procedure for injury or illness on the job (Part I)	66
	(Adopted from Safety Manual, KSL Holdings Bhd)	
4.4	Flowchart of procedure for injury or illness on the job (Part II)	67
	(Adopted from Safety Manual, KSL Holdings Bhd)	
4.5	Incident investigation form of KSL Sdn. Bhd.	68
	(Adopted from Safety Manual, KSL Holdings Bhd)	
4.6	Accident report form of Shiya Sdn. Bhd.	72
	(Adopted from Safety, Health & Environment Plan, Shiya	
	Sdn. Bhd.)	

PAGE

LIST OF ABBREVIATIONS

- RIDDOR
 Reporting of Injuries, Diseases and Dangerous Occurrences

 Regulations
 Labour Force Survey
- HSE Health and Safety Engineer

LIST OF APPENDICES

APPENDIX	TITLE	PAGE

Questionnaire

138

CHAPTER I

INTRODUCTION

1.1 Introduction

Construction accidents are the third most likely cause of work-related injury, after mining and agriculture. For every 100,000 workers in the construction industry, 15 die due to construction accidents each year. Some common causes of construction accident reports include faulty scaffolding, falls from heights, motor vehicle accidents, carbon monoxide poisoning due to faulty gas mechanisms, forklift accidents, electrocution, machinery accidents, and injury due to falling objects.

In order to reach a compensatory settlement in a construction accident, it is imperative to file construction accident reports immediately following the injury. A number of people can be held accountable for a construction accident, from the subcontractor and contractor to the owners, architects, insurance companies and equipment manufacturers. Although contractors are required to inspect construction sites with safety engineers and to enforce employee compliance with safety precautions, construction accidents still occur because of inadequate safety regulations or lack supervision. Contractors may be held accountable if the construction accident reports his inefficiency.

After a construction accident report is filed, insurance companies will usually get involved to determine if the accident will be compensated by the Workers'

Compensation Act or if third party negligence is to blame. Workers' compensation exists to protect workers from being considered negligent in construction accidents. The law allows workers to sue for damages, and enforces awards of partial salary and medical benefits to cover the expenses due to the injury.

Filing a construction accident report with a lawyer allows the lawyer to investigate possible third parties who may be sued for additional damages. A construction accident lawyer can hire engineers to help determine if an equipment manufacturer is responsible for the injuries listed in the construction accident report. They can also handle construction accident reports with claims against the subcontractor. In most cases, after a construction accident report is filed, the construction accident lawyer will gather a list of several possible third party defendants in order to ensure a better chance at winning a settlement.

1.2 Problem Background

On the basis of the research evidence considered, the under reporting of accidents, injures and illness appears to be a worldwide phenomenon, with confirmatory studies conducted in a wide range of countries. As would be expected, trends in accident rates and reporting accuracy vary from country to country, reflecting cultural differences, as well as variation in reporting systems and legislation.

In Malaysia, Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning And Occupational Disease) Regulations 2004 is stated in Occupational Safety and Health Act 1994. Part II of the regulation stated that reporting of any death, injury or condition of a person shall not apply to a patient when undergoing treatment in a hospital or surgery by a doctor or dentist. In UK and US, there exists a general consensus amongst researchers that small firms are more likely to under report or not report at all. Explanations offered include a lack of awareness of legal reporting requirements among smaller enterprises, penalties for poor record keeping infrequently levied on small firms, and completing the relevant paperwork posing a greater relative burden for smaller rather than larger firms. The advancement in social science has promoted a greater awareness of the sanctity of life and the unacceptability of premature death due to accidents. Accidents at construction sites are identified as a major problem throughout the world. So, the accident report is very important for the industry to investigate and prevent reoccurrence of the accident.

1.3 Problem Statement

Accurate reporting of work-related injuries and illnesses is important in order to help the employers to identify unsafe work environments and work practices; monitor workers' health and well being; and eliminate hazards; or, at least, control the health and safety risks to employees. With a safe working environment, employees are expected to work without worries from time to time.

Preliminary interviews have been carried out with construction professionals consisting of safety officer, project manager, and engineers in order to understand the existing accident reporting system. The construction professionals claimed that "the accident that occurred in their company is more likely to be under reported or not reported at all". The under reporting of accidents and incidents in their company is promoted by the presence of a poor safety culture, with inadequate systems in place for reporting dangerous occurrences. One aspect critical to the unsuccessful implementation of reporting scheme is because inactive management commitment to the scheme". Construction professionals claimed that "under reporting of work-related injuries in their company can also stem from lack of knowledge of reporting requirements, administrative barriers and inadequate reporting mechanisms." More specifically, these unsatisfactory reporting systems are considered by staff to be time-consuming; ineffective in actually stimulating positive change, and often unclear with regards to what classifies as a reportable injury

In view of the above scenario, a study is needed to analyze the existing accident investigations and reporting system which have been implemented by the local construction companies. With the understanding on the existing system, critical factors that influence the success of implementing accident reporting system will be able to be identified.

1.4 Research Objectives

The objectives of this research are stated as below:

- a. To study the current accident reporting procedure through document study.
- b. To identify the causes of construction accident under reporting.
- c. To identify methods of minimizing accident under reporting.

1.5 Scope of the Study

The scopes of the study area are in the state of Johor and Selangor. There are the documents studies of accident reporting procedures for companies in both states. Questionnaire surveys were responded by professionals in construction industry such as contractors, consultants, clients and safety officers in Johor. Interview was carried out together with a construction expert on how to minimize accident underreport.

1.6 Methodology

The study will be carried out in two distinct stages. A flowchart of methodology of the study is shown in Figure 1.1. Detailed descriptions of the methodology are given in Chapter 3.



Figure 1.1: Research methodology flow chart