ASSESSING THE PSYCHOLOGICAL SKILL OF FACTORY FIRE SQUAD RESPONDING TO EMERGENCY AT SUNGAI WAY FREE INDUSTRIAL ZONE, PETALING JAYA, MALAYSIA

By

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DEDICATION

To all Fire Fighters, Emergency Responders and especially dedicated to our Fire Fighters from the Fire and Rescue Department, Malaysia in the hope that they will set the ultimate courage, skill, sense of purpose, and commitment to others so gallantly represented by the emergency responders of this country and, indeed, all over the world to serve for a safer world.

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Nowadays the public is more aware of the importance of the private fire squad. This study was conducted to assess the psychological skill of factory fire squad affecting the effectiveness in responding to emergency and fire fighting at factories in the Sungai Way Free Industrial Zone, Petaling Jaya and compared to The Bomba Hazmat Team (Control). The psychological skills evaluated were confidence, physical arousal, attention control, arousal control, imagery use, commitment, self-talk use and physical condition. Results show level of psychological of factory fire squad and level of psychological is different within the factory fire squads (<.05); duration of experience in fire squad and academic qualification do not have significant effect on psychological skills.

PENILAIAN KEMAHIRAN PSIKOLOGI PASUKAN PENCEGAH KEBAKARAN KILANG SEMASA MENGHADAPI KECEMASAN DI ZON PERDAGANGAN BEBAS SUNGAI WAY, PETALING JAYA, MALAYSIA.

Oleh

Ching Eng Leong

Mei 2000

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Fakulti : Fakulti Kejuruteraan

Sejak kebelakangan ini, orang awam sudah memahami atau mempunyai kesedaran bahawa pasukan pencegah kebakaran swasta adalah amat penting. Kajian ini di buat berdasarkan kemahiran psikologi pasukan pencegah kebakaran kilang-kilang di Zon Perdagangan Bebas, Sungai Way, Petaling Jaya dan dibandingkan dengan kemahiran psikologu Pasukan Hazmat (kawalan). Diantara kemahiran psikologi yang dikaji adalah seperti keyakinan, kebangkitan fisikal, kawalan perhatian, kawalan kebangkitan, kegunaan bayangan gambaran, kewajipan, kegunaan perbualan diri dan keadaan fisikal. Hasil kajian menunjukkan ada perbezaan tahap kemahiran psikologi diantara Pasukan-Pasukan Pencegah Kebakaran Kilang dan Pasukan Hazmat Bomba. Pengalaman dalam pasukan pencegah kebakaran dan kelulusan akademik tidak mempunyai kaitan yang penting terhadap kemahiran psikologi (Nilai rendah P yang kurang dari 0.05). Latihan mempunyai kaitan yang nyata terhadap kemahiran psikologi.

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LIST OF ABBREVIATION

MCI	Management Charter Initiative's
SARA	Superfund Amendments dan Reauthorization Act of 1976
SERC	State Emergency Response Commissions
LEPC	Local Emergency Planning Committee
DRC	Disaster Research Center, US
EOP	Emergency Operations Plan
DOT-ERG	US Department of Transportation's - Emergency Response Guidebook
ECO	Emergency Control Organization
ERT	Emergency Response Team

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CHAPTER 1

INTRODUCTION

We are constantly being reminded of the huge fire losses being sustained by industry. Yet mere figures are impersonal. It is not until we have experienced the devastating effect, and the absolute shock of seeing a fire, that the truth is brought home to us. It can happen to all of us; fire can destroy the length and breadth of the largest premises. It is fundamental that a company exists to make profits for its owner and that the aim of management is directed solely to this end. To make profits, the company possesses certain material assets together with the skills of employees to use these assets. Without the material assets - buildings, plant and stock - the business cannot continue to function, and there is no quicker method of destroying these assets than by allowing them to burn down.

Every company no matter how small should have some preconceived plan for fire fighting. This will vary from the simple form of arranging which person will pick up a particular fire extinguisher to the full time highly efficient and effective private fire brigade. The starting point for fire fighting procedures is exactly the same as for all other fire precautions, that is, it must start with a director of the company who will see the arrangements as an important part of company organization.

The first few seconds of onset of fire are the most vital time for action. The speed of detection has already been considered, but the effectiveness of detection is only relative to the reaction it produces to control that spread and to extinguish the fire. Before any further thought is given to a private fire fighting service, arrangements must be made to see that the public fire brigade is notified. A private fire brigade with its local knowledge and especially its technical knowledge of the process involved can be of very great value indeed. The more frequent interaction between both brigades the easier for both parties to work together.

The public is now more aware of the importance of private fire squad. Recently residents of the Weld Quay Reclamation Area in Penang have asked the authorities to help them to form a voluntary fire fighting squad as they feel the area is a fire trap (The Star dated March 01, 2000). The Fire and Rescue Department Malaysia, Federal Territory of Kuala Lumpur has formed a task force to look into reducing fire related incidences at squatter colonies in the city. Deputy Director Leonard A. Athanasius said "We want them to give us a better understanding of the situation in their areas, the problems encountered and to enlist their help in implementing fire prevention demonstrations and seminar. They will also help us to form fire rescue squads in their areas, " reported in The Star dated March 04, 2000. The Malaysian Volunteer Fire and Rescue Association hopes to reach its target of recruiting 1,000 members by the end of the year it chairman, K. Balasupramaniam reported (The Star March 08, 2000).

1.1 Objectives

The main objective of this project is to evaluate the psychological performance of the Emergency Response Team (ERT) at Sungai Way Free Industrial Zone, Petaling Jaya. Asken's (1993) questionnaires were used as instruments for this evaluation. Questions were based on eight categories such i.e.,

- Confidence
- Physical Arousal
- Attention Control
- Arousal Control
- Imagery Use
- Commitment
- Self Talk Use
- Physical Condition

1.2 Theories

The drive theories hold that a key determinant of performance is the performers' drive or arousal. In applying these theories to performance under pressure, we interpret increased subjective motivation to do well as an increased level of arousal or 'drive'. There are two versions of drive theory. The first postulates an inverted U relation between drive and performance, which means that performance is best at intermediate levels of drive. The second version is the dominant response theory, which is the basis for this work.

1.2.1 Inverted-U Theory

Inverted U theories are often referred to the Yerkes-Dodson (1908) effect as shown in **Figure 1**, which was based on findings that rats learn to discriminate 'safe' from 'unsafe' areas most quickly when punished with intermediate levels of shock.

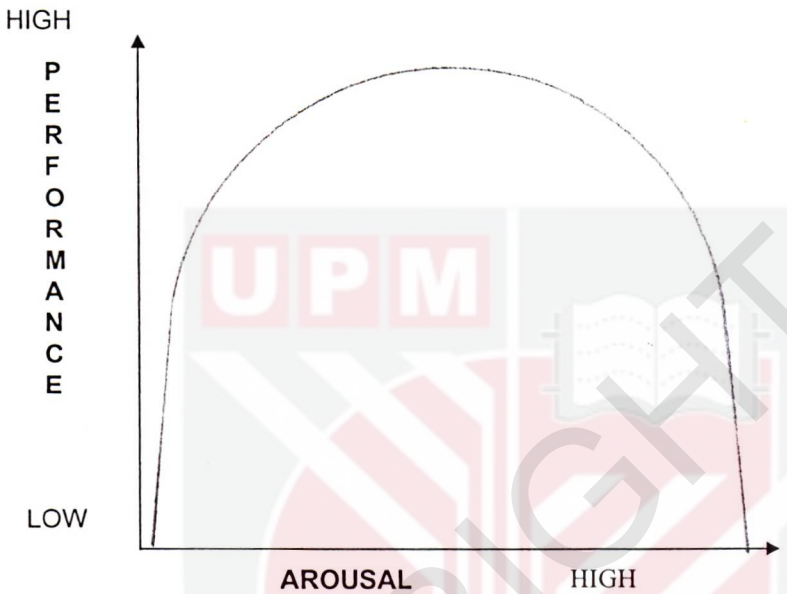

Figure 1: Inverted-U Theory Of Arousal And Performance Yerkes Drabek (1980)

1.2.2 Dominate Response Theory

The second group of drive theories is the dominant response theories, which say that increased drive accentuates the likelihood that the dominant response will occur. Probably the best known modern use of this theory is Zajonc's (1965) theory of facilitation, explaining why the presence of an audience improves performance on well-learned tasks but harms performance on poorly -learned tasks. Success is the dominant response on a well-learned task and failure is

the dominant response on an unfamiliar or poorly learned task. Increased drive presumably accentuates the dominant response.

1.2.3 The Flow Experience Theory

The elements of "flow experience", is summarized in Table 1. According to Guaron (1908) the flow experience is the state of feeling perfectness in the execution of skills i.e. an ideal feeling of action.

Table 1: Elements of Flow Experience, Guaron (1908)

	Elements of the Flow Experience
1	Merging of action and awareness
2	Focused attention
3	Change in self-awareness
4	Sense of control
5	Sense of clear demands and directions
6	Inherent satisfaction

This experience is also known as finding the "zone" or having a "peak experience." The first characteristic of the flow experience is the merging of action and awareness. In the flow experience, thinking and doing are not separate elements rather they flow as one element. Secondly, there is also a centering of attention on a limited field i.e., all that contribute to awareness is

necessary for achieving successful performance in the situation. That awareness can be broad or narrow, but it is filled only with information relevant to the task at hand.

A third characteristic is a change in self-awareness. There is a loss of self-consciousness. There is total immersion in the response. The merging of action and awareness also merges the person with the challenge at hand.

The fourth characteristic of the flow experience is a sense of self-control over actions and the environment. The feeling of control is so smooth and complete that lack of control is not a worry. This does not mean that an individual feels invincible or disregards danger, but he or she feels confident to handle the challenge. There is also a sense of coherent, clear, and non-contradictory directions for action. Decision seems easy. There is no hesitancy on how to react in a situation.

Finally, the flow experience requires no goal or reward other than the action itself. Although we sometimes need to come up with reasons for doing something, in the flow experience the rationale is clear, the action is legitimate, and the cause is worthy. The pleasure is in the execution of the skills and the achievement of completing the task.

The flow experience is an important phenomenon because it is how many expert performers psychologically describe their most effective efforts. It seems to represent an ideal state for effective response to challenge. It occurs when physical and mental skills have been blended and rehearsed. The addition of mental or psychological skills training to physical drills is the most effective way to promote such feelings of confidence and flow of experience.

Statement of Problem

The first few seconds of onset of fire are the most vital time for action. The speed of detection has already been considered, but the effectiveness of detection that is only relative to the reaction it produces to control the spread and to extinguish the fire. Private fire brigade effectiveness is critical in reducing fire-related incidences.

Specific Objective

The specific objective of this project paper is to evaluate the psychological skill performance of the Fire Fighters at Sungai Way Free Inustrial Zone, Petaling Jaya. The psychological skill performance is based on 8 categories i.e. Confidence, Physical Arousal, Attention Control, Arousal Control, Imagery Use, Commitment, Self-Talk Use and Physical Condition of the fire fighters.

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