



***A STUDY OF FALSE ALARM FROM
CMS SERVING BUILDINGS***

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Few things are more frightening to contemplate than a fire. Fires kill, destroy homes and leave survivors with painful, disfiguring injuries. Early warning of fire emergency is of utmost importance in order to save life and property. Fire Detection system plays a very important role and it can only be effective when there is no occurrence of false alarm.

False Alarms disrupt production activities, office activities, sleep, etc. which lead to wastage of resources and it also demoralizes emergency crews (BOMBA/ERT) and building occupants from responding positively.

In this paper, the objective is to carry out a study on the occurrence of false alarms in relation with human factor and automatic detector behavior according to day and night period within the week.

Data was obtained from recorded CMS Bomba Link for a period of four months ie. June – September 1999 for twenty-one different buildings.

The results indicate that the occurrence of false alarm happened during the daytime where working activities are in abundance. From observation and interview twenty-one buildings with maintenance and safety management, vandalism and excessive smoke/dust from working activities that may trigger the smoke detector are probably the two major causes of false alarm.

If fire alarm sensor selection/maintenance is improved, it can reduce the frequency of false alarm very substantially and hence performs its intended purpose.

CHAPTER I

INTRODUCTION

Risk has always been a part of human endeavor, but we increasingly expect protection against risk, thus governments around the world are mandating risk analysis in areas of health and safety. Computations of the odds of harm are becoming a powerful force in decisions about activities involving risk.

In fire safety we most often rely on empiricism and intuitive heuristics to make decisions. Increasing computational capabilities and modeling techniques from fields such as decision analysis, management science, operations research, and systems safety now allow us to identify the framework or structure of our decision making process, with varying levels of mathematical sophistication.

Few things are more frightening to contemplate than a fire. Fires kill, destroy homes and leave survivors with painful, disfiguring injuries. Worse still, fire is often cruelest to the very young, the elderly and the infirm. Smoke detectors and sprinkler systems can be very effective in reducing injuries, loss of life and property damage. Yet, clearly the best solution is to prevent fires from starting.

Fires start in three main ways: accidents (including natural events such as lightning), deliberate ignition or arson, and equipment failure including

electrical shorts and overheating. Fires can be prevented and their hazards reduced by:

- (a) Treating flammable materials to make them more resistant to ignition and flame propagation.
- (b) Designing buildings that are more resistant to the hazards of fires.
- (c) Using fire-stop barriers to confine fires that do start.
- (d) Installing smoke detectors, fire alarms and sprinkler systems.
- (e) Educating consumers.

With the fast pace of economic development and industrial activities towards Malaysia achieving vision 2020, many high rise buildings and factories have been erected within a short span of time and the trend is towards more complex buildings. This has encouraged the local authority to emphasis on safety aspects towards a better fire safety protection. Hence, a multi disciplinary approach of adopting both active and passive fire safety design features for the buildings have become a standard practice for today.

Huge amount of money is invested on fire safety systems which are installed in manufacturing, storage, commercial, and retail spaces. Requirements for installed fire safety systems are based on prescriptive codes enforced by local authorities for most buildings except for unique complexes e.g. KLIA Airport and Petronas Twin Tower (ref to 31/8/99 official opening-media report).

Early detection and extinguishment of fire are the pre-requisite for life and property protection; however if not properly maintained, they will create problems to the occupants and those related party concerned. One such problem is the *False Alarm Occurrence In Fire Detection System* which is going to be of interest to my entire project study.

STATEMENT OF PROBLEM - FALSE ALARM

What Are "False Alarms?"

“False alarm” means the activation of an alarm system when an emergency situation does not exist.

CONSEQUENCES AND IMPACT ON RESOURCES

This causes emergency crews (BOMBA) to expend time and effort in responding to a non-existing situation. False alarms kill. It has been documented by numerous fire agencies around the world that a number of fire departments responding to false alarms have been involved in accidents while responding to such reports, which resulted in firefighters being killed or injured, and vehicles and equipment damaged. Or they may be delayed in

responding to a real emergency where lives are at stake (ref. AIREF-False Alarm Reduction Program 18/3/98).

When someone purposely activates the fire alarm for no reason, then a false alarm occurs and this may delay the response for the next true alarm. It is this kind of alarm that causes the most concern and should be prosecuted whenever possible.

The number of fire alarms on buildings could be greatly reduced if we just pay more attention to our surroundings and what we are doing. Fire alarms disrupt production activities, office activity, sleep, etc.

From 1984 through 1993, 26 United States firefighters died while responding to false calls, 11 of which resulted from alarm system malfunctions. In 1993 there were an estimated 1,646,500 false alarms in the U. S. Fire Service. Of these, the largest single cause was malfunctioning of automatic fire alarm systems, totaling an estimated 670,000 false fire alarms.

Many local fire departments throughout the State of Florida are struggling with the high number of malfunctioning fire alarm systems. For example, during 1990 the City of Sarasota responded to approximately 3,000 dispatches to a reported fire incident, of which 2,570 (86%) were the result of false alarms originating in automatic fire alarm systems, while only 10 actual fires were responded to that detected by a fire alarm system in that year.

According to the National "Quality Control of Automatic Fire Detection and Alarm System Installations (1995)", false alarms are disruptive to building occupants. They can, over time, cause building occupants to ignore all alarms. Failure to respond to actual alarms can have disastrous consequences.

Now, how old do you have to be to start understanding that it is a hazard to other people when the fire department is tied up with false calls? What would happen if a false alarm and a real one will to sound at the same time? The fire department then has to divide up its resources to respond to what actually could be an emergency. Responding to a false alarm is costly. False alarms take away the manpower, equipment and other resources needed to respond to real emergencies in the City. Worst still, it may affect the moral of the Fire Department.

False alarms create a nuisance to the peace and safety of the community and cause excessive and unnecessary use of police and fire services in responding to assumed emergencies.

OBJECTIVE

The objective of my study is to conduct a times and cause analysis on false alarm occurrence in Penang for a period of four months ie. June 1999 to September 1999 with respect to human vandalizing factor and automatic detector behavior for the day and night period within the week as a basis to substantiate the necessary recommendations for design and maintenance selection guideline.

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