

## **FIRE PREVENTION AND MANAGEMENT**

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### **ABSTRACT**

This is a broad introduction to fire prevention and management tactics. Basic knowledge of how fires are created and spread proves to be crucial in preventing fires from happening worldwide. As technology progresses, the dangers of fire hazards become more prevalent, and people need to have a basic understanding and knowledge of fire risks in order to prevent fire tragedies from occurring. People also need to have knowledge on how to fight a fire efficiently in case it ever happens. When people have adequate knowledge of fire dangers, they are less likely to be negligent and more likely to successfully prevent fires from happening. Knowledge of the true harms and dangers of fire risks is the most important deterrent of negligence when it comes to fire prevention. When people know the full extent of the threats, only then will they act responsibly and in a safe manner in preventing fires.

### **INTRODUCTION**

Fire tragedies have been witnessed in different parts of the world, and this has raised multiple questions about the available prevention and management tactics that are being used. Most of these pertinent questions that are raised are politically charged, with regards to the policy decisions by the state governments as well as the involved stakeholders. Families have continuously lost their loved ones in various fire incidents leading to an increase in the number of orphans as well as people who are incapacitated as a result of the injuries caused by the fire (Diamantes 30). Wanton destruction of property as well as people being rendered homeless has also been the case, and this has led to the need for the revision of the policies as well as the fire prevention and management tactics that are being used. This is so as to reduce the number of casualties in fire tragedies and the overall reduction of property. This paper seeks to look at the various fire prevention and management tactics that could be effective following the Gerdec Albania fire incident and the one in Poland.

### **Development**

Where and why do fires arise? People need to know the true sources and origin of fires. Only by knowing the origin of fires will people be more knowledgeable and cautious in preventing fires from happening. An example of a source of fire is in the everyday kitchen. Appliances like ovens, microwaves, toasters, refrigerators, etc. All have the potential to be a fire hazard. Other possible origins of fires arise anywhere there are running electric currents, and an overload of those currents can potentially start a fire. Other dangerous origins are the gas pipes in the home. American households and other households around the world have gas pipes that are used for heating the home, heating the water and cooking. Gas lines have the most potential for being a source of fire in the house. By knowing the origin and dangers of fires, we can educate the community and people to understand and prevent potential fires from happening (Diamantes 42).

It is a well-known fact that engineering and education are some of the most effective and vital strategies in countering the impact of fire incidents as well as the costs. The issues of poor

funding, as well as inadequate experience and less staff, have also hampered the process of implementing the above-mentioned strategies. Another important factor that is vital in fire management and prevention is the implementation of the various policies and the task force in curbing and controlling of fire outbreaks. The fire incidents in Gerdec and Poland were either as a result of lack of proper knowledge of how to dispose of explosive and inflammable materials. The number of casualties, as well as the damage of property, would have been minimized had the firefighters been equipped with the necessary equipment to manage the infernos (Giesler 435).

### **Gerdec fire incident**

The fire incident in Gerdec Albania was due to lack of proper knowledge of how to dispose of inflammable and explosive materials. The incident happened in an ex-ammunition depot when some experts were getting ready to destroy a stockpile of wasted and ammunition that were had been considered obsolete. The process of disposing ammunition is usually supposed to be made in small series mainly to ensure that there is adequate control of the explosions. In the case of Gerdec fire incident, this was not the case because the entire stockpile went up in flames as a result of chained events of explosions. This implies a lack of proper knowledge on the measures needed to prevent cases of fire tragedies and explosions which result to fire incidents (Diamantes 47).

There are many various kinds of fires. There are natural fires that can happen from lighting, dry and hot conditions, volcanoes and other natural sources like organic decompositions. Whether lightning strikes a building or a pile of dry hay in a farm it can be a potential fire starter. This is why every tall building and airplane now has some form of a lightning conductor to protect it from a potential disaster. A few decades ago in a small mountain town in Albania, there was a fuel tank tower that caught fire and exploded due to the lack of a lightning conductor. The engineers in charge acted recklessly and did not put a lightning conductor rod which would safely conduct the lightning to the ground, and as a result, the fuel tank exploded setting fire to the nearby natural park. Due to the intervention of the local firefighters the fire never got a chance to spread further into the mountain and set fire to the nearby towns (Giesler 438).

There are also artificial fires. Artificial fires are man-made fires. A man-made fire can be something as simple as a campfire out in a forest or park. Before a person ignites a match and starts a fire in a natural setting, he needs to be aware of his surroundings and aware of the potential for disaster. Many accidents happen due to irresponsible campers and hikers that leave man-made fires behind due to lack of knowledge and negligence. They use fire to warm up in the winter or for cooking during the summer and do not properly put out the fire. When they leave the fire pit without properly putting out the fire, the wind takes over and gives life to the fire again and causes major catastrophes to the environment (Norman 78).

Education on proper ways to prevent explosions when disposing of explosive material needs to be emphasized and taken seriously. This should be by the relevant departments that are tasked with the handling of these materials. The government of Albania needs to invest in proper education on ways to prevent such outbreaks that most of the times turn catastrophic. Education and awareness of fire prevention and management strategies need to be emphasized by involving both the community and specific groups in the fire management program. A well informed public and fire department staff will effectively be able or likely to reduce cases of human error during such processes of disposal of explosive material. They

will also be informed on the proper storage of ammunition and technical security rules as well as the consequences involved in case they are violated. There should also be an effort to enact stricter punishment by the government to ensure that violations of the rules put in place is minimized (Diamantes 53). Firefighters should also be well versed with the necessary skills to offer first aid to victims so as to minimize the number of deaths as a result of the injury.

Over the years as civilization became more technologically developed the variety of new fire origins also increased. As technology is increasingly incorporated into the modern home more chances of fire hazards arise. The necessity of opening new factories from the rise of industrialization also brought the potentials of fire dangers all over the country. The necessity to open factories brought the necessity to prevent fires from happening (Giesler 441).

Fire awareness and educational programs should be put in place and targeted to specific groups and communities. This will give the people the necessary knowledge on how to prevent and manage fire outbreaks thereby averting the extensive loss of property and lives. Other measures that can be put in place to ensure that there is adequate measures in the prevention and management of fire incidents include; information and educational materials should be developed cooperatively by the involved technical experts and educational specialists and relayed to people at all levels, introducing ecology and fire management tactics into local and national schools (Norman 83).

Other sources of artificial fires can be big weapons factories or chemical compounds that produce various flammable chemicals. These buildings need special attention when it comes to preventing possible fires. The people working in these factories need to be well aware of the dangers and need to have superior knowledge on how to prevent possible disasters. Most of the workers in these factories are trained on how to isolate fires in the early stages to prevent the fire from spreading. On March 15 of 2008, there a big explosion on a weapons depot that was a base for a big weapon dismantlement operation in Gerdec, Albania. The explosion was caused unskilled workers who did not have any knowledge on weapon dismantlement. The ammunition caught fire and caused the biggest explosion that destroyed many buildings and houses around it. A total of 26 people died, and more than 300 were injured and sent to the hospital for treatment. This was all due to the lack of knowledge, training and the carelessness of the government to put standards on such operations (Giesler 458).

The prevention of fire is considered to be cost effective and efficient as well as a reliable way that the various authorized agencies in the community can enact and implement. Albanian governments, therefore, needs to invest in the latest fire prevention systems as well as the education of the community as well as laws and rules that are aimed at mitigating the causes of fire outbreaks. This is by focusing specifically on preparedness through technical training. Training is a key part of readiness. The safety of firefighters is reliant on their knowledge and comprehension of fire characteristics and tendencies. It is also dependent on the understanding of the local weather. Training in the effective use of firefighting equipment and fire reduction is also imperative, while for supervisors and managers, training can help them better understand and effectively deploy a variety of fire prevention and management resources (Diamantes 58). Preparedness in the case of the Gerdec fire incident would have been vital in terms of the necessary activities to undertake prior to starting a fire. Had the ammunition experts who were tasked with the disposal of the obsolete ammunition taken the necessary precaution as well as preparation then the unfortunate incident wouldn't have happened. Information should also be relayed quickly and efficiently to ensure that experts

are able to respond in time. This can be through investing in the development of effective information infrastructure (Norman 89).

### **Poland fire incident**

The Poland fire incident led to the death of around 21 people. This took place when a three-storied building that was housing women and children in Kamien when it started burning. The firefighter fighters tried to save the victims, but their ladders could only reach the first floor of the building on fire. In fact, most of the survivors escaped death narrowly after jumping from building to escape the inferno. This, however, led to them getting injuries such as broken bones and concussions. Luckily enough most of the survivors had been able to escape before the firefighters arrived. The cause of the fire was not clear, but had there been an effective management immediately it had broken out, then the number of casualties and the damage of property would have been minimized. The fire was also deadly because it is said to have spread quickly and this contributed to the number of casualties that had been witnessed. The firefighters ought to be well equipped to ensure that they are able to access areas that might prove to be difficult to access during the rescue operations (Giesler 464).

In the Poland incident, it is clearly evident that the firefighter fighters are not effective in the management of fire outbreaks. This is because of the lack of the necessary firefighting equipment. The short ladders couldn't reach the third floor of the whole building, and this hampered the efforts to rescue the helpless victims. The firefighters ought to be well equipped to ensure that they are able to access various areas in order to save victims (Norman 91).

The Polish government needs to adequately equip the fire management staff with resources that are reliable resources such as long ladders and safety equipment that will not only help in rescuing the victims but also ensuring the safety of the firefighters. The fire also spread quickly due to lack of the necessary resources to suppress fire so as to minimize its potential damage. The Polish government thereby needs to invest in the education of large-fire management of its various firefighting departments. Fires tend to be more intense and dangerous if they are not suppressed because of an increase in the rate of spread and the area affected (Diamantes 61).

Planning and procedures of fire prevention and management should also be established to ensure that large fires are suppressed on time. This can only be done if the firefighters and other experts are aware of the situation at hand, such as the size of the fire outbreak and its expected duration as well as the complexity. This will, in turn, give them the idea of the effective equipment and strategies to use, thereby increasing the chances of rescuing more victims and being able to manage the fire incidents effectively. A well planned and an expandable fire management system should be used to manage fires of all sizes and complexities in order to reduce confusion and risk during the rescue operation process. This will give the experts a wider scope of how to manage fires of different intensity effectively by ensuring that they cause as minimal damage as possible. The government, as well as the relevant stake holders, also need to put in place the process of reviewing, evaluating and training so as to ensure that the personnel tasked with combating fire outbreaks (Giesler 473).

The action taken during the initial phase of any fire outbreak is vital in ensuring the success of its effective management and consequently reducing the potential damage that it would have made. This like stated before entails the different organizations and governments as well

as the community, having planned as well as effective policies in place that will foster on the prevention and management of fire incidents. Involving the community in such matters will also go along in ensuring that they are well informed of the necessary steps and tactics that will be effective in combating fire outbreaks (Norman 101).

Investing in the latest fire detection technology should also be a safety priority by the owners of buildings as well as one of the requirements of the law. Fire detection signals such as systems that detect increased levels of temperatures as well as smoke should be put in place so as to alert people to the possibility of fire outbreaks. Automatic fire suppressing systems such as water sprinklers should also be adopted because they are able to suppress the initial fire outbreaks during the initial stage before the firefighters get to the scene. This will go a long way in ensuring that there is minimal damage to property and also casualties. Fire detection is a vital fire management strategy. Other ways that can also be adopted by the polish fire experts include the use of satellite imagery, dispatch centers as well as fire observation centers that will be tasked with looking out for cases of fire outbreaks and relaying the nature of the fire to the various firefighting organizations and bodies (Diamantes 67).

It is also imperative to note that an elaborate fire detection system should also entail an appropriate amalgamation of remote sensing, established land- or water-based locations, aerial routes, and configurations as well as private citizens and rural community networks. There should also be a public communication system to ensure that effective and efficient reporting is in place. This will, in turn, lead to the appropriate response being undertaken to mitigate the impact of a given fire outbreak. A thorough investigation of fire outbreaks such as the one in Poland needs to be conducted to find out the exact cause so as to be able to avert future incidents (Giesler 481).

## **CONCLUSION**

The prevention and management tactics of fire incidents are all more or less the same, and they only vary depending on the geographical nature of the place as well as the intensity of the fire that takes place. In both cases of the Gerdec Albania and Poland fire incidents, education and the necessary fire equipment. The education on proper methods of disposing of explosive material need to be carried out, both in the public and private level. The community should also be well informed to ensure that they are well prepared to respond to incidents of fire outbreaks so as to reduce the potential damage by fire outbreaks. Fire detection measures should also be used to ensure that fire outbreaks are controlled immediately they take place. Most of the fires that are preventable happen because of negligence or the lack of knowledge and training. The most important tactic in preventing fire accidents is education and knowledge of the public. Parents also need to educate their children on how to protect against fires in their home. In order to become more successful in reducing fire related tragedies, there needs to be an integration of the media to educate the public on how to prevent fires from happening. This includes knowing what causes fires, how they progress, how to isolate them from developing further and how to fight with fires to finally put them out. After a fire has occurred, the last stage in fire management tactics is to eliminate all sources that can cause the fire to reoccur. Safeguards need to be placed around the perimeter to make sure the fire will not restart again. The most important thing, in the end, is to protect lives of people, animals and preserve the environment. This paper has thus adequately discussed the important fire prevention and management tactics that can be used or employed with regards to the fire incidents that took place in Gerdec Albania and Poland.

## REFERENCES

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