

**DEVELOPING THE CRITERIA FOR A COMPREHENSIVE RISK
MANAGEMENT PLAN FOR GWINNETT COUNTY DEPARTMENT OF FIRE
AND EMERGENCY SERVICES**

EXECUTIVE DEVELOPMENT

BY: Bill Myers
Gwinnett County Department of Fire &
Emergency Services
Gwinnett County, Georgia

An applied research project submitted to the National Fire Academy as part of the
Executive Fire Officer Program

June 2001

ABSTRACT

The problem was that the Gwinnett County Department of Fire and Emergency Services did not have a comprehensive risk management plan. The purpose of this applied research project was to conduct a needs assessment to determine the need for and the comprehensiveness of a risk management plan for the Gwinnett County Department of Fire and Emergency Services. The descriptive research method was used to (a) determine the need for a plan, (b) identify what types of plans other departments have, (c) determine the typical contents of a plan, and (d) determine who should be responsible for the plan.

The procedures involved a review of literature pertaining to risk management in both private industry and the fire service. In addition, a survey form was developed to gather information related to research questions 2, 3, and 4 from a broad spectrum of fire departments. The survey employed open-ended questions to ensure that the responses were not limited.

The results of the survey were both qualitative and quantitative in that they provided both a list of answers as well as some percentages. Seventy-four percent of the survey forms were completed. The results of the survey indicated that fire departments address risk management in various ways. Only 27% of the departments indicated that they had a comprehensive plan.

The literature fully recommends that organizations, especially fire departments, develop and implement comprehensive risk management plans. The results clearly indicate that risk identification and evaluation, risk control, and monitoring are necessary

components of a plan. Both the literature and the survey suggest that the fire chief be the ultimate responsible party for the risk management plan.

Based on this study, it is recommended that fire departments, including the Gwinnett County Department of Fire and Emergency Services, develop and implement a comprehensive risk management plan.

TABLE OF CONTENTS

ABSTRACT.....	2
TABLE OF CONTENTS.....	4
INTRODUCTION.....	5
BACKGROUND AND SIGNIFICANCE.....	6
LITERATURE REVIEW.....	7
PROCEDURES.....	12
RESULTS.....	15
DISCUSSION.....	18
RCOMMENDATIONS.....	20
REFERENCES.....	22
APPENDIX A.....	24

INTRODUCTION

Only in the past century have work groups paid much attention to organized or systematic safety practices. (Laing, 1997). W. Edwards Deming (1986) probably said it best.

A large majority of the problems in any operation are systemic, deriving from the work place and work methods created by management, and that responsibility for only the relatively small remainder lies with the worker. (p.146)

The problem is that the Gwinnett County Department of Fire and Emergency Services does not have a comprehensive risk management plan. The purpose of this applied research project is to conduct a needs assessment to determine the need for and the comprehensiveness of a risk management plan for the Gwinnett County Department of Fire and Emergency Services. The descriptive research method will be used in this project. The research questions are:

- 1) Does the Gwinnett County Department of Fire and Emergency Services need a comprehensive risk management plan?
- 2) What kinds of risk management plans do other fire departments have?
- 3) What is typically included in a comprehensive risk management plan?
- 4) How should the responsibility for administering and managing a comprehensive risk management plan be applied throughout the department?

BACKGROUND AND SIGNIFICANCE

Private industry has identified that risk management is the responsibility of management and literally becomes a part of the organizational culture. William F. Jenaway (1989) indicates that money is being paid out for attorney's fees and workers compensation that should be going to pay for key services. (p.5) Progress has been made that is providing information and innovative ideas that are re-directing the thought process of this organization and others. Even traditionalists recognize the importance of organizational involvement in all areas of risk management. Jenaway (1989) identifies the specific areas where losses occur:

The fire service historically has encountered losses in five areas: motor vehicle, property related (due to crime or fire), at the emergency scene, personnel (worker's compensation and general liability), and professional liability. (p.48)

Plans must be developed that address the systematic intricacies that provide opportunities for hazards to exist and their severity should they occur. The fire service can adopt the theories and practices that have been in place in the industrial sector. Many years of research and application of risk management in industry can be beneficial to the fire service by simple integration of risk management practices into the fire service. A culture change in the fire service would be realized in that individuals are less likely to be the cause of accidents than are systems. Stephenson (2000) puts it plainly, "The safety of an operation is determined long before the people, procedures, plant, and hardware come together at the work site to perform a given task." (p.89)

On a national level, The National Fire Protection Association has become a catalyst in the risk management field. The development of standards has provided fire

departments across the country with guidelines that can be used to establish safer work environments and practices. According to Fred Stowall (2001):

In Chapter 2 of NFPA 1500, the requirements of the risk management plan are simply stated. The fire department shall adopt an official written risk management plan that covers administration, facilities, training, vehicle operations, protective clothing and equipment, operations at emergency incidents, operations at non-emergency incidents, and other related activities. (p.20)

The provisions of this type of standard provide not only guidance, but outline responsibilities. Stowall (2001) goes on to say:

The fire chief or authority having jurisdiction (AHJ) has the ultimate responsibility for the risk management plan (like the occupational safety and health program) but delegates it to the health and safety officer. (p.19)

It is logical to expect increased liability for an organization if nationally accepted standards are not followed.

This research project is linked to organizational change, an issue that is addressed in Unit 4, Managing Creativity, in the *Executive Development* course.

LITERATURE REVIEW

The purpose of this literature review is to examine relevant documents in order to provide answers to the following questions. First, does the Gwinnett County Department of Fire and Emergency Services need a comprehensive risk management plan? Second, what kinds of risk management plans do other fire departments have? Third, what is typically included in a comprehensive risk management plan? Finally, how should the

responsibility for administering and managing a comprehensive risk management plan be applied throughout the department?

To correctly develop a risk management plan, one must first understand what is meant by the word “risk”. Lowrance (1976) does this well by stating: “Risk is a measure of the probability and severity of adverse effects.” (p.29)

There has been much research to support developing and implementing a risk management plan. Much of the research lays the responsibility on the management of an organization to provide safe work environments and practices for the employee. Brown and others (1994) state:

When safety is seamlessly integrated into the way an organization operates on a daily basis, safety becomes not a separate activity for committees and teams, but the way every employee performs job responsibilities. (p.17)

This statement alone emphasizes the need for fire departments to research and develop risk management plans. Fire departments provide emergency services that involve operations that could result in undesirable outcomes, including death or injury to members of the department or the citizens we are obligated to protect. Add to this the potential for damage to or loss of apparatus, facilities, and equipment and one can begin to understand the depth of the liability an organization would face if there is no risk management plan. Jenaway (1989) emphasizes this:

Most accidents and related liability problems can be prevented. You must have a program to manage this if you plan to be a fire service manager for very long. We in the fire service have been more obsessed with the liability issue because it is a newer problem, with greater single impact or shock on our financial systems.

However, the routine losses continually erode our resources and present us with greater demands to manage our risks effectively. (p.18)

Implementation of a risk management plan into the Gwinnett County Department of Fire and Emergency Services is essential to not only the provision of safe work practices but also a reduction in the liabilities associated with an emergency service delivery system. Stowell accentuates this opinion in the 2001 publication *Fire Department Safety Officer* by saying:

Essentially, a risk management plan serves as documentation that risks have been identified and evaluated and that a reasonable control plan has been implemented and followed. An effective risk management program has a positive impact on the department from the operational, safety, financial, and liability standpoints. (p.19)

Fire departments across the country have varied types of risk management plans. Some departments have procedures incorporated into Standard Operating Guidelines (SOGs) that govern specific types of operations. Typically, safety procedures are given in SOGs that are directly related to the operations discussed. These procedures may address such things as firefighting operations, emergency medical issues, hazardous material operations, and special team functions. Other departments, such as Virginia Beach, Virginia, use a comprehensive plan that transcends all operations. Risk management incorporates a full range of control measures that may be used to limit, reduce, or eliminate the probability that an undesirable outcome will occur. (Virginia Beach, VA)

Most publications reviewed recommend a five-step process for developing a risk management plan. The process includes areas of the operation that should be included in the plan. The United States Fire Administration (1996) suggest the following process:

- Identify risk (exposure)
- Evaluate risk potential
- Rank/prioritize risks
- Determine and implement control actions
- Evaluate and revise actions and techniques (p. 33)

This model should be familiar to any supervisor or manager that has had experience with problem solving models. This familiarity should facilitate easy implementation of a risk management plan development process.

The risk identification process can be accomplished by making a list of potential problems in each area of operation and setting in which each operation can take place. The addition of who might be exposed would complete the risk identification process. Sources of information for risk identification can be local data, experts in the area of operation, and national statistics available from other departments, the National Fire Academy and the National Fire Protection Association. (Stowell, 2001)

Once risks are identified, they must be evaluated as to their frequency and severity. This can be accomplished using the same resources used the risk identification process. (Stowell, 2001)

The next step requires that the risks be ranked or prioritized as to their importance. The importance of avoiding a risk is directly related to the culture of an organization. (Stowell, 2001) If the culture on an organization hold personal safety high, risks that may injure employees would be ranked higher than those that involve equipment. Unfortunately, the opposite may hold true in an organization that is more concerned with material things.

Once risks are prioritized, control measures should be identified and implemented. The United States Fire Administration (1996) identifies control measures as administrative, engineering, and personnel protection. (p.7) Administrative control measures consist of SOGs and other written documents that are designed to limit losses. Engineering control measures are related to systems design. Personnel protection measures are equipment and clothing that are designed to protect the employee from a hazard. Simply stated, administrative and engineering measures are designed to make the task safe. Personnel protective measures are designed to protect the worker. (USFA, 1996)

The final step in developing a risk management plan makes the plan a living document. The evaluation and revision of actions and techniques requires that the organization monitor the effectiveness of the plan.

In summary, Stowell (2001) agrees, “At a minimum, the plan shall include risk identification, risk evaluation, risk control techniques, and risk monitoring.” (p.20).

The responsibility for administering and managing a comprehensive risk management plan varies from organization to organization. The research reveals that the optimum level of responsibility is achieved in those organizations where risk management is embedded in the organizational culture. Most agree that the culture of an organization is developed from the top down. It is generally accepted that if the leader of an organization, in this case the Fire Chief, demonstrates the importance of safety in the fire department, others will accept that as the organizational culture. The Virginia Beach, Virginia Fire Department makes it clear in their risk management plan that the fire chief has the responsibility for the implementation and operation of the risk management plan.

The department's health and safety officer is responsible for managing and revising the plan and all members are responsible for ensuring their health and safety based upon the plan. Many departments across the country have identical responsibilities identified in their risk management plans.

The National Fire Protection Association (NFPA) offers guidance and standards for establishing and utilizing a risk management plan. Many fire departments adopt the NFPA's standards as their own. NFPA 1500 (*Standard on Fire Department Occupational Safety and Health Program*, 1997) and NFPA 1521 (*Standard for Fire Department Safety Officer*, 1997) both address the need for a plan, what is included in the plan and place the responsibility for administering the plan.

PROCEDURES

A survey form, with cover letter, (see Appendix), was developed to gather information from other fire departments related to the research questions. Some open-ended questions were used because the researcher did not wish to limit the possible answers. The survey was designed to look for information related to the purpose of this applied research project, specifically, to conduct a needs assessment to determine the need for and the comprehensiveness of a risk management plan for the Gwinnett County Department of Fire and Emergency Services. The first question asked departments if they in fact did have a formal risk management plan. The second question solicited information as to how their department managed risk if they did not have a formal plan. The third question was used to determine if the department addressed risk management in specific procedure manuals. This question was designed to elicit information about risk management if the department did not have a formal risk management plan. The fourth

question related to specific areas in which risk management is addressed. Respondents were asked to identify the specific operations in which they apply risk management. The final question was used to identify who in the organization was responsible for administering/managing the risk management plan. The research questions used on the survey were:

1. Does your department have a formal risk management plan?
2. If your department does not have a formal risk management plan, how do you address managing risk?
3. If your department does not have a formal risk management plan, do other procedure manuals contain risk management guidelines that address specific areas of your operations?
4. Which of the following areas of operation does your risk management plan address?

* Emergency Medical Operations
Operations

* Firefighting

* Utilities (Stations & Offices)

* Dive/Swiftwater Team

* Trench/Heavy Rescue Team

* Emergency Vehicle

* Property Loss (Reusable
Equipment)

* Hazardous Materials Team

* High Angle/Rope Team

* Other _____

5. Who is responsible for administering/managing risk in your department?

The survey was reviewed prior to use by upper level management members of the Gwinnett County Department of Fire and Emergency Services. This review was done to ensure that the questions were relevant to the purpose of this applied research project.

Analysis

The results of the survey were both qualitative and quantitative, in that they provided multiple answers for several questions and percentages for others. This resulted in a list of answers for some of the questions. Because there were open-ended questions that resulted in a list of answers, the researcher chose to use the top three answers for each question as the results. This decision was made to allow workable results, yet to include all useable information. The departments selected represent a diverse cross-section of the nation's fire departments.

Population

The survey group consisted of thirty fire departments with which the researcher had personal contacts as members of the organization. The departments varied in size, services provided to their communities, geographical location, paid employees, and volunteers. The respondent departments represent the following:

- Six departments have more than 200 members
- Seventeen departments have all paid members
- Three departments have combination paid/volunteer members
- Two departments have all volunteer members
- All departments have a paid fire chief
- All departments provide some form of EMS
- Ten departments are in rural areas
- Eight departments are located in cities
- Four departments are county wide

Limitations

The surveys were sent to thirty departments with an expected return rate of 80%. The surveys were sent with a cover letter via email to make it easier for the respondents to complete and return them. The respondents were given thirty days to complete and return the surveys in hope that this would be more than ample time.

Definition of Terms

EMS. Emergency medical services. These services may consist of any fire department operation that deals with the provision of emergency medical care. Care may be given on the scene and/or during transport to a hospital.

Typical. The word “typical” is used in this project to imply average or normally expected.

Comprehensive. All inclusive, related to all aspects of an operation.

RESULTS

A total of 22 respondents returned the survey, which resulted in a 74% return. As previously stated, two of the questions were quantitative and resulted in percentiles. The remaining three questions resulted in various answers with the top three answers being used for data. All respondents answered each question.

Six (27%) departments indicated that they do have a formal risk management plan. The remaining sixteen (73%) indicated that they manage risk through other means. Nine (56%) of the sixteen manage risk through a city or countywide risk manager. Six (37%) of the sixteen advised that a safety committee is responsible for managing risk. The fire chief is responsible in the remaining department.

Survey question number three asked if the respondent departments addressed risk management through specific operation guidelines. Fourteen (88%) of the sixteen departments without a formal risk management plan address risk in this manner.

Survey question number four asked the respondent departments to identify specific areas of operation in which they address risk management. There were numerous answers. The three most common operations cited were firefighting operations, emergency vehicle operations and EMS respectively. Nineteen (86%) departments indicated that risk management was addressed in procedure manuals for firefighting and emergency vehicle operations. Eighteen (82%) departments address risk in procedure manuals for EMS.

The respondents answered unanimously in the final question. The fire chief is responsible for administering and managing risk. Six (27%) respondents added that the fire chief has the help of a safety officer in their organization.

Answers to Research Questions

Research Question 1. Does the Gwinnett County Department of Fire and Emergency Services need a comprehensive risk management plan? The literature fully recommends that a fire department not only develop a risk management plan, but embed that plan into the culture of the organization. The management of an organization must take the lead role. Dan Peterson (1989) clearly agrees:

In most cases, unsafe behavior is normal behavior; it is the result of normal people reacting to their environment. Management's job is to change the environment that leads to the unsafe behavior. (p. 64)

Research Question 2. What kinds of risk management plans do other fire departments have? The results of the survey clearly indicate that fire departments address risk management in various manners. Relatively few (27%) indicate that they have a formal risk management plan. However, all respondents do address risk in some manner. It appears that as more departments become aware of the importance of a formal risk management plan; risk will be addressed in a more comprehensive manner.

Research Question 3. What is typically included in a comprehensive risk management plan? The literature provides ample direction as to the components of a risk management plan. The survey results show that some department address these areas and some do not. NFPA 1500 (1997) identifies risk identification, risk evaluation, risk control techniques, and risk management monitoring as the key components to a risk management plan. The document further identifies administration, facilities, training, vehicle operation, protective clothing, emergency operations, and non-emergency operations as the key areas that a risk management plan should cover. (NFPA 1500, 1997)

Research Question 4. How should the responsibility for administering and managing a comprehensive risk management plan be applied throughout the department? The literature, as well as the survey, provides abundant information that designates the fire chief as the prime responsible party for a risk management plan. Manuele (1997) provides insight on this as well:

An organization's culture is translated into a system of expected behavior that is expressed by the level of management commitment or non-commitment to safety.

All aspects of safety, favorable, or unfavorable, derive from that commitment or non-commitment. (p. 78)

The key to embedding safety into the culture of any fire department is the level of commitment of the fire chief. This responsibility can be delegated to a safety officer who is charged with management of the plan. NFPA 1500 (1997) further indicates that each member of the fire department shall cooperate and concern themselves with the risk management plan.

DISCUSSION

The results certainly indicate that the Gwinnett County Department of Fire and Emergency Services does need a comprehensive risk management plan. Deming (1986), Jenaway (1989), and Stephenson (1991) agree that organization's leadership is responsible for determining and designing risk management plans. NFPA 1500 (1997) gives this opinion power with the following written standard:

The fire department shall develop and adopt a comprehensive risk management plan. The risk management plan shall consider all fire department policies and procedures, and it shall include goals and objectives to ensure that the risks associated with the operations of the fire department are identified and effectively managed. (2-2.1)

Second, there are several kinds of risk management plans that exist in fire departments. Based on the answers given to the survey, few fire departments have adopted the direction of NFPA 1500. Many fire departments are addressing risk management, albeit in a different format. The literature, both industrial and fire-service related, clearly

recommends that risk be addressed uniformly throughout all operations. Laing (1997) places the focus of the risk management plan on all aspects of the organization:

A major step toward improving safety is eliminating those factors in the organizational system that contribute to human error. This includes not only workers errors but also by designers, engineers, purchasing agents, supervisors/team leaders, and anyone else. (p. 6)

Risk management plans should contain components that provide for a living document to be used in a cyclic fashion. Jenaway (1989) likens the process of risk management to a decision-making process that helps an organization determine how to control risks and how to expend risk management related funds. The literature overwhelmingly identifies the components of a risk management plan as risk identification, risk evaluation, risk control techniques/procedures, and the monitoring of success.

The responsibility for administering and managing the plan lies primarily with the head of the organization. In the fire service, the fire chief carries the responsibility. This opinion is inherently stated throughout the survey results and the literature. NFPA 1500 (1997), and Jenaway (1989) agree with Stowell (2001) who simply states that “The fire chief or authority having jurisdiction (AHJ) has the ultimate responsibility for the risk management plan...”(p.19). The literature continues on to show that the leader sets the culture of the organization and risk management should be embedded into that culture.

To summarize, it is of vital importance to the good health of the employees and the organization to develop and use a comprehensive risk management plan. The plan should be applicable to all areas of operation within the organization. The plan should

consist of risk identification and evaluation, risk control measures, and a monitoring device. Lastly, the fire chief has the ultimate responsibility to ensure that the plan is developed, implemented, and becomes part of the organizational culture.

The implication to the Gwinnett County Department of Fire and Emergency Services is that the department needs a comprehensive risk management plan based upon the guidelines identified in the research.

RECOMMENDATIONS

Based on this study, it is recommended that fire departments, including the Gwinnett County Department of Fire and Emergency Services develop and implement a comprehensive risk management plan. The findings indicate that most departments address risk management in various forms. The literature, as well as some fire departments, clearly recommends a comprehensive risk management plan that addresses risk in all areas of organizational operation. The results of this research also indicate that exhaustive work has been done by industrial and fire service researchers alike to make it easy for a fire department to implement such a plan. Adoption of accepted risk management plans by those organizations lacking in the risk management area would greatly reduce risk nationwide in the fire service.

The risk management plan should be comprehensive in that it is written to cover all aspects of operations within an organization. A comprehensive risk management plan would contain components that identify and evaluate risks; implement risk control techniques; and monitor the effectiveness of the process.

It is further recommended that the fire chief embed a comprehensive risk management plan into the culture of the organization. If the plan becomes part of the organizational culture, all personnel will know the importance and benefit of the plan.

Finally, there appears to be a gap between the information and technique available to reduce risk and what is actually used by fire departments. There are many possible reasons for this gap to exist including budget, awareness, and apathy. However, an increase in emphasis on risk management by national organizations such as the National Fire Protection Association, the United States Fire Administration, the International Association of Firefighters and the International Association of Fire Chiefs could help make the importance of a risk management plan more prevalent. It must also be recognized that no matter the emphasis placed by these organizations, the responsibility for implementing a risk management plan lies with the organization and its leadership.

REFERENCES

Brown, G. M., Hitchcock, D. E., Willard, M. L. (1994). *Why TQM fails and what to do about it*. Burr Ridge, IL: Irwin Professional Publishing.

Deming, W. E. (1986). *Out of the crisis*. Cambridge, MA: Center for Advanced Engineering Study, MIT.

Jenaway, W. F. (1989). *Fire service risk management implementation guide*. Washington, DC: International Association of Fire Chiefs.

Laing, P. M. (1997). *Supervisor's safety manual*. (9th ed.). Itasca, IL: National Safety Council

Lowrance, W. W. (1976). *Of acceptable risk: science and the determination of safety*. Los Altos, CA: William Kaufman, Inc.

Manuele, F. A. (1997). *On the practice of safety* (2nd ed.). New York: John Wiley and Sons, Inc.

National Fire Protection Association. (1997). *Standard on fire department occupational safety and health program*. (chap. 2). Quincy, MA: Author

National Fire Protection Association. (1997). *Standard for fire department safety officer*. (chap. 2). Quincy, MA. Author

Stephenson, J. (1991). *System safety 2000*. New York: Van Nostrand Reinhold

Stowell, F. (2001, February). *Fire department safety officer* (1st ed.). Oklahoma City, OK: Oklahoma State University Board of Regents.

Virginia Beach Fire Department, (2000, July). Risk Management Plan. Virginia Beach, VA: Author

United States Fire Administration. (1996, December). *Risk management practices in the fire service*. Federal Emergency Management Agency

Appendix A

Individual's Name,

I am working to develop the criteria for a comprehensive risk management for our department. This research is also serving as an applied research project for the Executive Fire Officer Program at the National Fire Academy.

I would appreciate your participation by completing the attached survey within the next thirty days. This will provide me with much needed information that will go toward the completion of my project as well as potentially improve the safety of our personnel.

Should you have any questions or wish to request a copy of the final work, please let me know. Thank you for your time and assistance.

Bill Myers

Developing the criteria for a comprehensive risk management plan for Gwinnett County Department of Fire and Emergency Services.

Survey Questions.

1. Does your department have a formal risk management plan?
2. If your department does not have a formal risk management plan, how do you address managing risk?
3. If your department does not have a formal risk management plan, do other
4. procedure manuals contain risk management guidelines that address specific areas of your operations?
4. Which of the following areas of operation does your risk management plan address?

* Emergency Medical Operations Operations

* Emergency Vehicle

* Firefighting

*Property Loss (Reusable Equipment)

* Utilities (Stations & Offices)

* Hazardous Materials Team

* Dive/Swiftwater Team

* High Angle/Rope Team

* Trench/Heavy Rescue Team

* Other _____

5. Who is responsible for administering/managing risk in your department?

The following questions are to collect demographic information.

6. How many members are in your department?

7. Is the department paid/volunteer/comboination?
8. Is the fire chief a paid position?
9. What level of Emergency Medical Service does your department provide?
 - First Response (ALS/BLS)
 - Transport
 - None
10. What type of geographical area does your department cover?
 - City/Rural/County/Other