

The  
ASPEP  
Journal  
1995



AMERICAN  
SOCIETY  
OF  
PROFESSIONAL  
EMERGENCY  
PLANNERS



**The Journal Of The  
American Society Of Professional Emergency Planners  
1995**

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## PRESIDENT'S FORWARD

Welcome to the 1995 edition of The ASPEP Journal. Topics in this edition represent fourteen states and cover experiences from public and private sectors, federal, state, local and military arenas. Topics vary widely - from "how-to" guides to technical, research-based recommendations.

The American Society of Professional Emergency Planners (ASPEP) is committed to promoting the improvement of the emergency management profession; to fostering professionalism and encouraging continuing education in emergency management with the government, military and private sectors; and, equally important, to providing a forum for professional education issues. In order for ASPEP to be successful in meeting its goal, we count on the success of those within the government, military, and private sectors to provide our readers with the wealth of talent that exists within our profession.

The diversity in the 1995 ASPEP Journal ranges from the **Americans with Disabilities Act** to **Qualitative Validation Emergency Response**. As we know, all too well, the role of the emergency management profession is neither easily performed nor well understood. The ASPEP Journal can help overcome this problem. We also accept Drabek's findings when he pointed out that successful emergency managers have established a legitimate niche. They are seen as integrators, mediators, facilitators, or compromisers rather than as autocrats. They are perceived as having specialized knowledge.

All occupational groups in the process of becoming professionalized must identify special areas of knowledge unique to their fields. Successful emergency managers are highly knowledgeable about existing and pending legislation, operating rules and regulations, and key federal and state agencies. Successful emergency managers have developed and sustained an image of commitment to their profession. The overall picture provided by the Drabek study is one of credibility earned through performance. Drabek's study shows that successful directors were dedicated professional who worked hard to improve emergency management capability in their environs.

We thank the authors and encourage others to share their knowledge/experiences with the world. The next edition will include research, internship projects and other achievements of students from universities around the country. The Journal endeavors to capture the benefit of the fresh talent that awaits the profession.

Ellis M. Stanley, Sr., CEM  
ASPEP President, 1995

## EDITOR'S PREFACE

Welcome to the second volume of the Journal of the American Society of Professional Emergency Planners. We were fortunate to have an excellent selection of articles submitted for inclusion in this 1995 inaugural volume, maintaining the high standard set in last year's issue. I hope that you will find them thought provoking and full of practical information that you can use to make your emergency management program more effective.

The Journal makes an important contribution to emergency management. This is the only juried practitioner based publication which actively encourages submission of material on any subject applicable to our field. This year introduced the jury process, the consideration of topics and abstracts by a panel of our peers to identify those most appropriate for this publication. This ensures that we bring you the best possible articles and is a standard practice in academic journals. However, it is important that our authors are working emergency managers - in today's slang of the day they have "been there, done that." The Journal is a snapshot of what the day to day business of emergency management is all about.

The variety of articles submitted for this Journal caused me some concern on how best to organize them for publication. After several false starts, I came to the conclusion that it made sense to use the four phases of emergency management as benchmarks we could all recognize. While there is some overlap, we all recognize there is also overlap in the real world. I would appreciate any comments or better suggestions.

I regret we were unable to include an excellent paper by Lieutenant Nancy L. Franze, MSC, USN. Due to some sensitive international issues, the Navy requested that she withdraw the paper.

Due to our tight publication schedule, several papers did not make the deadline. To have the Journal out in time for distribution we had to hold to a 1 September cutoff. If your paper did not get to me in time, please forward it - we will include it for consideration for the 1996 Journal. If you did not submit an abstract for consideration, or if your's was not picked, I encourage you to start working now on an article for next year. As your Editor, I will be happy to work with any potential author to help you get in print.

Walter G. Green III, CEM  
Editor

## DISCLAIMER

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Walter G. Green III, CEM  
Editor  
1 November 1995



## I. MITIGATION

### INTEGRATING EMERGENCY MANAGEMENT AND THE PLANNING PROCESS

by

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Emergency Management is called into action immediately before and after a disaster. Its focus is on improving disaster operations by providing an emergency coordination and decision system to cope with disaster disruption. It predominantly requires effective tactical skills: communication, command, and control. Hazard mitigation deals primarily with longer term, more general hazard reduction issues. Its focus is on improving community capabilities to withstand future disasters. It predominantly requires effective strategic skills: planning, policy design, and implementation.

Many hazards are localized, with their likely effects confined to specific known areas: Floods affect flood plains; landslides affect steep soft slopes; etc. The effects can be greatly reduced if it is possible to avoid the hazardous areas being used for settlements or as sites for important structures. Most urban comprehensive plans involving land use zoning probably already attempt to separate hazardous industrial activities from major population centers. Urban planning needs to integrate awareness of natural hazards and disaster risk mitigation into the normal processes of planning the development of a city.

By integrating the emergency management function into the planning process, a government unit has enhanced its opportunity to devise and implement strategies for reducing risks from multiple hazards, such as floods, hazardous materials incidents, and other natural and man-made disasters, while providing a new and more efficient all-hazards approach to emergency management. This integration concept applies to all relevant hazards, and all phases of emergency preparedness, mitigation, response, and recovery. It stresses an

integrated approach to management of the full spectrum of emergencies, including natural disasters and technological disasters.

Location of public sector facilities is easier to control than private sector location or land use. The careful location of public sector facilities can itself play an important role in reducing the vulnerability of a settlement — schools, hospitals, emergency facilities and major infrastructure elements, like water pumping stations, electrical power transformers and telephone exchanges represent a significant proportion of the functioning of a community. An important principle is deconcentration of elements at risk: services provided by one central facility are always more at risk than those provided by several smaller facilities.

The principle of deconcentration also applies to population densities in a city: a denser concentration of people will always have more disaster potential than if they are more dispersed. Where building densities can be controlled, the urban comprehensive plan should reflect the spatial distribution of hazard severity levels in its zoning for permitted densities of development. Indirect control of densities is sometimes possible through simpler methods, such as using wide roads, height limitations and road layouts, that limit the size of plots available for development. Creation of park lands reduces urban densities and also provides open space in the city. Greenery allows drainage to decrease flood risk, provides refuge areas for the population in the event of fires and may provide space for emergency facilities in the event of a disaster. At a regional level, the concentration of population growth and industrial development in a centralized city generally is less desirable than a decentralized pattern of secondary towns, satellite centers and development spread over a broader region.

The design of service networks - roads, pipelines, and cables - also needs careful planning to reduce risk of failure. Long lengths of supply line are at risk if they are cut at any point. Networks that interconnect and allow more than one route to any point are less vulnerable to local failures, provided that individual sections can be isolated when necessary. Vehicle access to a specific point is less likely to be cut by a road blockage in a circular road system than in a radial one.

Some indirect measures may be effective, such as making safer land available, or making alternative locations more attractive. This may be through better

provision of income sources, access to public transport and better service provision. Deterring further development in unoccupied areas by declaring areas clearly as hazard zones, denying services, reducing accessibility, and limiting availability of building materials also may be effective. Ultimately, however, it is only when the local community recognizes the true extent of the hazard and accepts that the risk outweighs the benefit to them of being in that location that they will locate elsewhere or protect themselves in other ways.

Through the integration of the planning function with emergency management, planning is in a unique position of combining mitigation measures with development management programs into coordinated strategies in order to address effectively the opportunities and problems of hazard mitigation.

Planning as a process must design management tools to guide and influence the location, type, amount, density, quality, and rate of development with a local or regional jurisdiction. Examples of development management tools can include land use plans, zoning ordinances, and subdivision regulations.

A comprehensive plan specifies the planned locations of various types of land-using activities, such as commercial, industrial, and residential. Based on projected needs for accommodating population and economic growth during the planned period, the plan seeks to provide necessary public facilities and services where they are needed; to designate ample land areas suitable for potential development; and to protect valuable environmental resources. For hazard mitigation purposes, the plan can identify hazard sites, and guide concentrated development away from them by designating them for open space or low-density uses, such as parking or recreation. It can include special sections on evacuation routes, on emergency shelters, and on post-disaster reconstruction principles.

Zoning ordinances are typically used to regulate the use of land and structures and to set standards for setbacks and yards, building height and bulk, lot size, density, and treatment of nonconforming uses and structures. For implementation of a development management strategy, low density zoning districts can be used to limit development in areas that are environmentally sensitive, such as water-supply watersheds, or hazards, such as flood plains. Hazard areas can be delineated in traditional zoning districts or as hazard

districts which require special performance standards for all uses, no matter what their type.

Subdivision regulations control the conversion of raw land into building sites. They establish requirements and standards for streets, water and sewer lines, and storm drainage; such facilities can be required to be flood-proofed. They can require the subdivider to dedicate land for parks, schools, and other public purposes and to prevent environmental degradation and to mitigate hazards. Dedication or fees in lieu of dedication also can be used to acquire high-hazard lands for open space and recreation. Subdivision regulation can either prohibit development in high-hazard areas or require that it be protected from damage by flood-proofing, elevation, or similar means. They can also be used to disclose to prospective buyers that hazard risks are present by requiring that hazard information appear in deeds. Planned unit development or cluster regulations, enacted either as part of subdivision regulations or separately, offer the option of grouping building sites within a large tract of land away from hazardous areas, while not decreasing overall density on the tract.

The concept of an integrated emergency management within the planning process is based on the belief that the efforts of many disciplines are necessary if we are to reduce the consequences of natural and man-made disasters.

The success of an emergency management program is related to the achievement of effective inter-organizational coordination among the participating agencies and personnel of all levels of government. Ideally, we must work in concert toward the goal of encouraging citizen adaptive actions by accomplishing many interrelated tasks.

This integrative approach to planning and emergency management recognizes that while response to emergencies is the central focus during a disaster, mitigation activities to reduce the degree of risk, preparedness activities to increase the capability to respond, and recovery activities required to return the governmental operations to normal, are co-equal components in a successful program that will allow key officials to meet their responsibility to provide for the protection of our citizens.

## HAZARD MITIGATION REALITY

by

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### OVERVIEW

FEMA Director James Lee Witt has given hazards mitigation special emphasis and attempted to put it in the forefront of FEMA's four-phase emergency management process. Consequently, much is talked about these days regarding hazard mitigation, but few truly understand its complexities and little has been written about the administration of successful statewide mitigation efforts.

Colorado was the first state to formally establish a statewide Natural Hazards Mitigation Council, and has been a leader in coordinating and promoting statewide natural hazards mitigation measures. These measures have brought the collective forces of emergency managers, state and local agencies, engineers, academicians, students, citizens, the military, and business and industry to address hazard assessments problems and solutions available through effective mitigation.

I remember several years ago taking a FEMA correspondence course and having the word "mitigation" drummed into my head. While it was both the first and last phase of the emergency management process, it was a difficult word to adopt into my vocabulary. It wasn't in common use by society, yet they are the ones that will make its principles a reality, although the concepts behind it are plain. Now after several years, I still have the problem with the word but haven't found another in the English language that quite expresses what the word "mitigation" does. In the first year after forming the Colorado Natural Hazards Mitigation Council, we had our first statewide conference and forum in Grand Junction. I can still see in my mind the Holiday Inn marquee, "Colorado Natural Hazards *Litigation* Council"! Maybe it is because "mitigation" is so close to "litigation", perhaps closer than we realize, that its use in our vernacular seems awkward.

My first assignment in state disaster emergency services was in the Disaster Preparedness Improvement Grant Program (DPIG). Being new to emergency management in the public sector, I was excited with the possibilities of mitigating the very reason for my employment. Mitigation, properly conducted eliminates, reduces or retards the presence or growth of hazards to possible disaster proportions. If the hazards are under control there are no disasters, and if there are no disasters, there is no need for hazards mitigation. And if there is no need for hazards mitigation there is no need for disaster preparedness improvement. Am I right? It may be a bit of faulty logic, but I'm sure you can see how it helps motivate effective mitigation action. Kind of like our many welfare services being in business to put themselves out of business, given the solving of the problem.

### **NATURE OF THE PROBLEM**

The problem of hazards mitigation is not that simple. Even those in the profession of emergency management have been immersed in courses and classes dealing with or specific to hazards mitigation, but not directly involved or experienced in putting mitigation measures to practice. One of the most effective videos produced by FEMA was "Breaking the Cycle". It is still one of the most relevant examples of what effective flood mitigation can do to reduce the risk. Manitou Springs, here in our own back yard, was presented as a case in point where pre-disaster mitigation could save lives and property. Unfortunately, little has been done in this historic and picturesque community to the west of Colorado Springs. The other case dealt with Rapid City, South Dakota and post-disaster flood mitigation following the 1972 flood that killed many and destroyed or severely damaged dozens of homes, businesses and public structures. Researching the 1990 Limon, Colorado Tornado unearthed what thousands have known or experience before, mobile home parks are a vulnerable target to tornadic winds and floods. Limon had adopted new building codes requiring tie-downs for mobile homes, but all existing homes were grand fathered from the new codes. As a result, dozens of mobile homes were strewn around like toys in the level 2 tornadic winds.

We all have lessons of disasters to explore and learn from, and it is not difficult to see how effective mitigation measures would have helped prevent the loss of life or property. What is equally important is the development of plans and certain actions that will eliminate or minimize these losses when faced with future hazards. More importantly, we need to focus on the

disasters that have not but reasonably could happen given the risks involved. We may never be able to absolutely pin the prevention of loss upon our efforts, but we will know that they could not but help.

Some of the more current definitions of hazards mitigation are:

Mitigation includes any activities that prevent a disaster, reduce the chance of a disaster happening, or reduce the damaging effects of unavoidable disasters. Buying fire insurance for your home is a mitigation activity.

*Emergency Management U.S.A. HS-2/May 1986*

Mitigation: Any Action taken to permanently eliminate or reduce the long-term risk to human life and property and the negative impacts on natural and cultural resources that can be caused by natural and technological hazards.

*Sharing the Challenge: Floodplain Management Review Committee, Executive Office of the President, June 1994*

Hazard Mitigation is defined as: any action taken to eliminate the long-term risk to human life and property from natural and technological hazards.

*Post Disaster Hazard Mitigation Planning Guidance for State and Local Governments, FEMA DAP-12, September 1990*

## **IF WE DO NOTHING**

Unfortunately, every recent disaster has had numerous examples of how loss of life or property could have been reduced or eliminated through effective mitigation. It takes more than words and concepts to mitigate disastrous consequences. It takes actions. Actions by the potential victims of those disasters as well as every level of government.

The Midwest Floods of 1993 laid bare building after building whose damage or destruction could have been avoided through sensible land-use management

and code enforcement. A total of 48 people lost their lives, and 43,752 buildings were damaged in a widespread disaster costing \$10 billion. Hurricane Andrew revealed many structures built under recently adopted, improved building codes but lack of inspection and enforcement left them vulnerable to the ravages of hurricane winds. Oakland Hills and the 1991 fire that killed 25 and destroyed more than 2,500 homes revealed structures that had been built atop foundations of earlier wildfire victims, but with virtually no change in roadways or reduction of wildfire fuels.

Unfortunately, it is the same the World over. Meeting with disaster officials in England and Australia, the situation is the same and the effects of the disaster are similar; people and property attempting to co-exist in an area replete with hazards. In Colorado, wildfires hold one of the greatest potentials for disaster. In-migrations of thousands of people yearly brings more than its share of those seeking the tranquility of our beautiful mountains. Some, such as those from California, have an inkling the danger of living in the interface area holds, but even these opt to surround themselves with volatile fuels, inadequate access for those who could provide help in a wildfire, limited water supplies to deal with a conflagration, structural designs and materials that are more on the side of the fire than those attempting to save their homes, and yet they remain uninvolved or vocally oppose adoption or enforcement of sensible codes meant for their safety and survival.

### **PURPOSE OF THIS PAPER**

This paper will focus on the successes of Colorado's Natural Hazards Mitigation Council and offer insight into administrative measures that have proven to work. It will include the background of the Council and the involvement of the governor, state emergency director, and heads of relevant state agencies through a constructive work plan. It will reveal an effective, functional organization plan of council and committees to both address particular relevant hazards as well as incorporate the talents of people from all walks of life. Key to the study will be insight into effective ways to attract precious human and material resources needed to implement viable hazard mitigation measures. Resources for the paper will be provided as well as contacts for further information.

## **BACKGROUND**

The Colorado Natural Hazards Mitigation Council was officially created by a Governor's Proclamation on March 23rd, 1989. While by title it gives the credit to our governor, in fact it was through the diligent work of one individual in state emergency management, tenaciously getting the governor's office and other elements of state and local government involved in its creation.

The creation was supported by a consistent and often repeated message of the importance of hazards mitigation, and a work plan that was workable and would involve every walk of life and every discipline in its operation.

## **SECURING EXECUTIVE SUPPORT**

It is hard to imagine any state where the governor voluntarily comes forward to make a commitment to hazards mitigation. Colorado is no exception, and in fact the governor dissolved his entire emergency management organization in a budget cutting move. The state legislature was little more attuned to such an important step for they also went along with the governor. What was effective was the liaison done with the governor's staff and other key people in state government.

A one page paper listing the ten greatest hazards in Colorado piqued the governor's interest. He not only took note of the projections for disasters but sought them out in a list of priorities. Based on our recent tornado, wildfire, flood and dam failure disaster in the most recent years; and the areas of greatest risk; it wasn't difficult to produce such a list. Having the attention of the governor got the attention of his staff and thereby that of the directors of state agencies.

## **ENLISTING INVOLVEMENT**

Colleges and universities were relieved that state government was finally expressing an interest in both their years of research as well as ideas for hazard reduction application. In addition to experts in their fields, graduate and underclass students saw what was being proposed as an opportunity for learning or for being involved. Key operatives in storm water and floodplain management, hydrology, hydrometeorology, climatology, forest management and

geology responded with enthusiasm when asked to serve on the newly formed council and its committees.

Emergency management individuals, often a lonely breed due to a lack of public understanding and declining budgets, warmed to the company, if not the possibilities of mitigating hazards in their jurisdictions. Recent state and FEMA publications coming on the heels of recent disasters had identified mitigation possibilities for wildfire and drought and landslide hazards. A new emphasis from the state engineers office had focused attention on the state's high and medium hazard dams, their condition, and required Emergency Action Plans.

Key elected officials representing the legislature, county and local governments were invited to participate, not so much for their knowledge or even interest in the subject, but as a catalyst for action. The stage was set, the materials were assembled. Now, someone had to sew the pieces together.

## **ORGANIZATIONAL CONCEPT**

The initial concept was to provide an overall organization, but to enable working committees of the council to have initial successes. Working out from the Division of Disaster Emergency Services (DODES) individuals were identified and tasked with bringing others in specific functional areas together to form the working committees.

An ambitious organization structure was produced, serving to organize committees by hazard area and supporting their work through administrative committees. Executive direction was vested in a chairperson with close ties to the governor and legislature, bolstered by the true heart of the council in its executive secretary.

True to the workings of state government, the council had to seek out official appointing of its members by the governor. This was more political than practical, but gave opportunities for stroking a variety of individuals regardless of their capabilities, and involving other officials from areas of highest risk. Some of these were ex-officio (27) rather than official (25) members. The real work was to be done in the committees after all.

## ORGANIZATION DESIGN

A steering committee was to oversee the process and include the executive staff and committee chairs. This overly ambitious plan went beyond mere naming of the natural hazards and those selected to develop mitigation plans, it named a myriad of task forces under a separate structure that were to evaluate the hazards themselves. Twelve hazards were identified, six geologic and six weather related.

### Geologic Hazards

Earthquake  
Landslide  
Subsidence  
Rockfall  
Mining  
Swelling Soils

### Weather Related Hazards

Flood  
Wildfire  
Tornado  
Winter Storm  
Drought  
Avalanche

Six of these would have planning committees that worked through an overriding Mitigation Plans Committee. Besides mitigation plans, other administrative committees included the following:

*Hazards Priority Committee:* Prioritize natural hazards statewide.

*Vulnerability Committee:* Identify vulnerability to various natural hazards and evaluate the options available to mitigate such risks.

*Project Development Committee:* Develop a unified management strategy with project development, concerning state, federal, or local mitigation responsibilities.

*Public Information Committee:* Inform local government and the general public of the activities and recommendations of the Council. Prepare public information brochures, etc.

*Report Committee:* Prepare an annual work program report covering progress achieved and provide updates to the Governor and Legislature.

*Mitigation Plans Committee:* Review current mitigation plans for such hazards as wildfires, droughts, floods, landslides, avalanches, and earthquakes.

*Funding Committee:* Assist local government and the Council in seeking funding to implement hazard mitigation recommendations.

It is readily apparent that such a structure would have many overlaps and duplication in areas of emphasis. Over the years since its inception, the organization of the council had become more germane to hazard mitigation and less cumbersome in its structure.

## **OBTAINING RESOURCES**

FEMA played a major role in funding some of the first mitigation projects of the council. The naming of a mitigation section in FEMA Region VIII headquarters, the administration of pre-disaster mitigation funds to state and local government, and the offering of a new Natural Hazards Mitigation & Recovery course at FEMA's Emergency Management Institute in Emmitsburg, Maryland fit well with the new council's mission. Local governments receiving Emergency Management Assistance through the state from FEMA were encouraged to look for ways to use these funds to mitigate their greatest hazards. The Council established a Natural Hazards Mitigation Foundation as a legal entity capable of approaching FEMA, private foundations, and business and industry in an attempt to build a cache of money to fund mitigation projects. This added to the complexity but freed the council up from financial matters and potential improprieties.

Another critical resource need was met through the development of a disaster reservist cadre. These were both skilled and unskilled volunteers from all walks of life who agreed to receive periodic training and to give of their time in response to threatening or actual emergencies. Their organization also tended to be on a functional basis relative to the hazard. Reservists were also a ready pool of individuals available to work on mitigation projects where their knowledge, skills and even muscle helped to complete projects.

## **PROVIDING DIRECTION**

As indicated earlier, the true heart of the council was in its Executive Director, a person with a wealth of knowledge and direct experience in emergency response, recovery and mitigation, and with an energy for work and ability to involve others in the work of the council as well.

Selecting committee chairs who would free up enough time from their other employment to lead, guide and direct others to do the business of the committee was not an easy task. There were those who wanted the prestige or distinction of participating in such a council but who lacked the willingness to devote enough of their time or energy, or who were unable to consistently direct the efforts of others. One way around this was that of selecting co-chairpersons for the committees, figuring that at least one of them would get the work done. Amazingly, the work itself, that of finally doing something to mitigate against the ravages of past hazards and disasters, was sufficient to keep the committees together and productive. Some committees, e.g. wildfire and weather related hazards, started faster while the geologic hazards took more time to develop, but they too grew in stature as they started to produce results.

## IMPLEMENTATION

Fundamental to the work of each of the hazard mitigation committees was that of identifying their true purpose, and setting out a list of objectives. It didn't take long for each of the committees to find that their success really was entwined with the success of other committees. For instance, public information on risks and hazards was seen as one of the most necessary steps in mitigation. Therefore, the Public Information Committee was viewed as a necessary ingredient to their own committee's success. There were many things already in print, but each of the committees saw benefits in producing new or more relevant documents or brochures.

All of the committees were attuned to the prospect of obtaining financial assistance needed to pursue a project, but few of them understood the unique working relationship envisioned between their committee, the funding committee, the council steering committee, and the Natural Hazards Mitigation Foundation. If the process weren't awkward enough, a litany of forms were produced to direct requests for funding up this serpentine chain. Complicating matters, local communities sought assistance directly to the council only to find that project approvals had to come through one of the established committees and be blessed by its chairperson.

While hazard mitigation would be meaningless with mitigation projects, the council had to actively solicit projects without funds directly available to commit to their implementation. This could mean that eminently worthwhile

projects, pursued in accord with the rigors placed on them by the committees, council and foundation, could sit for months while funding avenues were being sought. This isn't to say funds were not successfully obtained, or that only money was a solution to all projects. Some of the most creative mitigation solutions involved merely matching available human resources or talents with an existing agency.

## REVIEW AND RE-COMMITMENT

It was determined at the outset that individuals involved in hazard mitigation needed to have more contact with each other and the council than their committee meetings provided. Semi-annual conferences were established with an alternating of locations to both sides of the Continental Divide. Costs were kept low and the programs had many interesting features. The Spring 1991 conference was held in Grand Junction and was well attended considering the distance. This was a training workshop intended to orient the committees to their task and the workings of the council. It's agenda is worth noting:

- Overview of Mitigation Concepts
- Determining Mitigation Needs and Identifying Opportunities
- Identifying and Selecting a Mitigation Strategy
- Barriers to Implementing Hazard Mitigation
- Team-Building for Hazard Mitigation
- Developing a Mitigation Program
- Converting Plans Into Action

Lesson plans for each of these were developed, credible speakers selected to present the information, and presentation time was allocated. Don Barnett, the mayor of Rapid City, South Dakota during the 1971 flood was the luncheon speaker and was extremely successful in selling the value of hazards mitigation.

The Fall 1991 meeting was hosted by the Adolph Coors Company in Golden and included tours of the National Earthquake and Landslide Information Center in Golden as well as a complete range of committee reports. Succeeding conferences were held in the Spring and Fall in Colorado Springs, Glenwood Springs, Durango, Fort Collins and Golden. The expense of hosting two conferences a year has led to one Council meeting where each of the committees report and one large conference that is held separate but in

conjunction with the state's annual emergency management conference. Exhibitors and vendors have become a major part of these conferences, displaying everything from software to hardware to structural mitigation devices.

## REPORTS OF THE COUNCIL

Annual reports of the Colorado Natural Hazards Mitigation Council are published and distributed statewide. The reports detail the hazard events, mitigation projects under way, changes in state or federal laws impacting upon mitigation, summaries of the committee reports. In addition to the Annual Report, the Public Affairs Committee is now producing The Mitigation Siren, a newsletter for members of the council and others.

## IN SUMMARY

Colorado by no measure has the amount or severity of natural hazards of many other states, but it does have an effective tool for recognizing the hazards and initiating constructive mitigation measures before they happen. The Colorado Natural Hazards Mitigation Council has accepted more than thirteen major mitigation projects costing more than \$100,000. These projects are under development or completed, and will save the citizens of Colorado untold millions in mitigated disasters.

### References:

Executive Order B 044 89 Establishing a Council for the Implementation of Strategies to Manage Mitigation of Natural Hazards in Colorado, March 23, 1989.

Executive Order B 027 91 Establishing a Council for the Implementation of Strategies to Manage Mitigation of Natural Hazards in Colorado, July 1 1991.

Organization Diagram Colorado Natural Hazards Mitigation Council, September 6, 1994.

1993 Annual Report, Colorado Natural Hazards Mitigation Council



## II. PREPAREDNESS

### ENTREPRENEURIAL APPROACH TO EMERGENCY MANAGEMENT

#### A Field Guide To Emergency Management

*By*

*David T. Crews, CEM*

*Director Of Emergency Management, Reno County  
Hutchinson, KS*

Many local governments do not have enough revenue in the tax base to satisfy requirements in emergency management and other functional areas. Reno County is no exception. In the past, many requirements went unsatisfied or unidentified. Requirements go away only when the need changes or they are satisfied by funding or resources. The challenges we faced in carrying out the entrepreneurial approach were attitudes, the crossing of traditional political boundaries, training (especially for the governing bodies), finding resources and improving a function in the community perceived as an insurance policy. In Reno County we use five major ways to satisfy requirements besides using the tax base. They are: volunteers, partnerships, State and Federal grants, business sector donations, and private gifts and donations. The primary purpose of using these sources is to extend readiness and response capabilities of emergency management as far as possible. This technique departs from the traditional practice of satisfying operational requirements and functional areas solely from the tax base. With this approach, more local resources, technology and people have been identified, planned for, obtained and developed. This allows us to respond more effectively to large scale emergencies or disasters.

The entrepreneurial process we use is very similar to the business plans in the private sector of the economy. Most of our elements for achieving greater levels of effectiveness and efficiency in emergency management are embodied in the total quality management practices used by many organizations today. The basic steps are listed below.

Our first step was to let others know what we are about. The development of formal vision and mission statements was important. The written vision and mission statements of Reno County are tailored to closely reflect those of the Federal Emergency Management Agency (FEMA) and the Kansas State Department of Emergency Management (KDEM). In the Reno entrepreneurial model, the vision statement, when distilled to its simplest form, says: "...to make things better." This is followed by a familiar mission statement: "To save lives and protect property." These two elements are our cornerstones for success in emergency management. Everyone in the community needed to buy into and have ownership in the vision and mission statements.

The second step was to develop our goals. There are five goals in the Reno model that support the vision and mission statements. They are: (1) creation of a local emergency management partnership with other State, Federal and local governments and agencies, volunteer organizations and the private sector; (2) establishment of a local management system with these partners that is comprehensive, risk-based and all-hazards in approach; (3) make hazard mitigation the foundation of the local management system; (4) provide a rapid and effective response to any disaster; and (5) strengthen local emergency management and revitalize the cadre of emergency responders in Reno County. The following steps address our techniques for selling the local emergency management program.

The third step we use can be compared to the building of the proverbial Fuller Brush. We believe a good entrepreneur is similar to a Fuller Brush Man. To sell his wares he must have a concrete and tangible product in his hand to make a sell and satisfy a potential partner or client. To this end, our management and fiscal plans were formed to specifically identify resources that will satisfy our emergency management goals. We generated our requirements from the hazard analysis of Reno County. The requirements were then articulated in the Reno EOP on how we plan to handle mitigation, preparedness, response and recovery. Once we identified the strategic and operational requirements, we looked for ways to satisfy the requirements.

Our fourth step identifies in detail specific resources needed to satisfy operational requirements and they are inserted into the annual Reno County budget. This is usually done as capital improvements; however, they can be commodity items as well. The capital improvement items are listed in priority order for the convenience of the governing body. It should be noted

here, that when the budget is completed, we have a highly detailed list of requirements into the annual budget. The reason for this is simple. Only our governing body can authorize and direct the acquisition, use and disposal of resources belonging to the public. Therefore, our fiscal document is important. It identifies the needs, shortfalls and resources for Reno County Emergency Management and is the document of record by which public support is derived. Because our local tax base will not support the satisfaction of all requirements, the five previously identified methods are brought in to play to satisfy as many requirements as possible. To help the process, a resolution was passed in Reno County that allows the Director of Emergency Management to accept services, equipment, supplies, materials or funds by way of gifts, grants and loans from outside sources, for the purposes of emergency management. The main point is, that, this Resolution allows the Office of Emergency Management to pursue satisfaction of requirements outside the tax base.

Step five in our process, is the sharing of the list of unsatisfied requirements from the budget with partners and other sources in our community. The goal is to obtain as many unfunded tax base items as possible.

To show the effectiveness of our approach, a few of the results are highlighted here. In the volunteer category, more than 40 new volunteers have been added to augment our single emergency manager and our administrative assistant which have generated many extra and badly needed man-hours. Partnerships have been formed with the local community college, the Army National Guard, the Hutchinson Correctional Facility, Kansas Department of Transportation, The Kansas Highway Patrol, The City of Hutchinson, the American Red Cross, the Salvation Army, Mennonite Disaster Services, the Civil Air Patrol, the Retired Seniors Volunteer Program (RSVP) and a host of others. This has gained additional resources, satisfied unmet requirements, eliminated duplication and has cut program costs. We have received more than \$10,000 worth of grants in less than 18 months. Private donations have included both cash and equipment. With the aid of a business partner, we remodeled the Emergency Operations Center (EOC) at an estimated value of \$4,000 for about \$200 in actual expense to the taxpayers.

The entrepreneurial approach works. All it takes is a can-do attitude, a management and facility plan, some innovative thinking, a few good partners, an educated public and a supportive governing body. Add to this a well

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documented set of mission goals, requirements and objectives, mix well, and watch the results!

## **E.P.P.I.C. REQUIREMENTS FOR EMERGENCY OPERATING CENTERS**

### **A Field Guide To Emergency Management**

*by*

*David T. Crews, CEM*

*Director of Emergency Management, Reno County  
Hutchinson, KS*

In putting the "Entrepreneurial Approach to Emergency Management" on paper I realized that I did not include the method I used for facility planning. I then decided that the facility plan that I used to generate Emergency Operations Center (EOC) requirements might be better treated by itself. For this purpose I have coined an acronym to facilitate the process. The acronym E.P.P.I.C. stands for environment, people, power, information and communications. The key to success when designing an operational system or facility, is to identify the most critical parts of that system. E.P.P.I.C. attempts to do this. These elements are actually the key headings for primary EOC facility requirements and they help to communicate those requirements to the governing body and others.

The first key element of the facility plan is the environment. When considering the EOC environment, such things as heating, air conditioning, lighting, seating, work spaces and audio visual should be considered. In my planning I attempt to visualize the requirements under worst case conditions. My philosophy for this is based on an old saying "you can cut a rope shorter, but you can't cut it longer." A lot of attention to detail needs to go into this process. For instance, when planning multimedia capabilities, many different lighting levels may be needed. Work spaces not only need a work surface and the obvious seating, they also need to have adequate communications, power, information, and even a capability to handle trash generated through operations. The environment also needs to be designed to operate for long periods and to support more than one 12 hour shift.

Another consideration is mobility. Our EOC is under the County Jail. Adverse conditions in the jail or from another source could force us to move. Therefore, most of the critical equipment and manual references are portable and on wheels. Also, a second site has been obtained at the local Army

Guard Armory as our backup location. We are joint planning the alternate EOC through a partnership agreement with the Guard.

The second element is people. This element is the most important and often the most overlooked planning requirement of an operational system. When configuring the EOC for the human factors, the amount of space, the ergonomics of lighting, seating, audio visuals, and noise levels need to be considered. Unless the right tools and equipment have been placed into the EOC, the people working there could not function to the best of their abilities.

Power is the third major element in EOC planning. The Reno EOC, as with many other command and control centers I have worked in, consumes a lot of power. As technological improvements are added, more electrical loads are placed on the system. Consideration for adding additional power capabilities need to be considered as electrical components are added. Also, the distribution and the availability of the power throughout the room needs to be considered. Safety is another consideration when planning for power. The system needs to be properly shielded and grounded for both the protection of people and sensitive electronics. A backup power system is also needed in the event commercial power is lost. The backup system should also be backed up for preventive maintenance and in the event it too should fail.

Information handling in the EOC is critical to the decisions and responses made during an emergency or disaster. Because of levels of manning and training are scarce, every effort is being made to apply technology to offset shortfalls in this area. This is why the management approach in Reno County is toward turnkey operation, so that the EOC can operate effectively without the emergency manager or other key personnel. In the Reno EOC, like in others, we have both manual and automated systems. The manual systems require storage space, especially the books. We have recently purchased a new personal computer (PC) which is dedicated as an emergency operations system in the EOC, as opposed to an administrative PC that we use for routine management functions. This computer is intended to function in more of a multimedia mode with greater digital mapping and graphics

capability. It also is running emergency management software such as CAMEO<sup>1</sup> and EIS<sup>2</sup>.

We are planning several peripherals for the operational computer consisting of capabilities to scan in information and to project and display information.

The last key element is communications. Once the information is generated in the Reno EOC, it must be acted upon. Without communications, information is useless. Therefore we have installed a tactical radio capability that essentially augments our 911 dispatch during emergency operations. It allows us to have a departmental head or coordinator on every emergency channel that is in use in the field. It expands the dispatch capability from the normal three dispatchers to over nine. Also, we have added 12 unlisted telephone lines to expand that capability. However, telephones are very vulnerable in large disasters and if the disaster does not take the telephones out, the public usually does. Therefore, Amateur radio has been organized in Reno County with an ARES/RACES group of more than thirty local volunteers. There is currently a 2 meter radio for emergency net operations and two meter for Packet operations. We hope to add HF and a controller radio in the future. Also, we are working with the local Army National Guard unit to give us additional communications via a Memorandum of Understanding and a community based plan through a joint civilian-military cooperation effort. Another initiative in communications is through the local Civil Air Patrol (CAP) squadron. The Kansas CAP Wing has a very extensive communication capability and can even fly airborne repeaters.

As illustrated, E.P.P.I.C. has been a very handy and innovative tool for generating operational requirements in the Reno EOC. I hope that by sharing this planning aid that others might benefit from it. By using E.P.P.I.C. in Reno County, we have considerably shorten the planning to implementation cycle. We hope to close further many remaining shortfalls and limiting factors to our response and recovery planning in the future by using this tool.

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<sup>1</sup>"CAMEO" is the trademark name for a software program distributed and supported by the Environmental Health Center, a division of the National Safety Council.

<sup>2</sup>"EIS" is the trademark name for an emergency management information software sold and distributed by EIS International, a Division of Research Alternatives, Inc.



## TURNKEY OPERATIONS IN THE EMERGENCY OPERATIONS CENTER

### A Field Guide to Emergency Management

by

*David T. Crews, CEM*

*Director of Emergency Management, Reno County  
Hutchinson, KS*

There are several reasons for the turnkey, or ready-to-go, concept of the Reno County Emergency Operations Center (EOC). They are: limitations in manpower, training and manual plans. Unless these shortfalls are solved, rapid, efficient, and effective response and recovery will not be possible. To overcome these limitations, many traditional manual emergency operations centers (EOC) systems are being supplemented with computer information technology. This is so, that with minimum training or plans familiarization, anyone with nominal management experience and a computer background, can be more effective in operation of the EOC. This is particularly true without a trained emergency manager. Turnkey operations in Reno County are also an important planning idea for identifying resources and determining operational requirements. It is the basis for many items identified in the annual budget or fiscal document for Reno County.

Reno County has only one full time trained emergency coordinator. Using the Federal Labor Standards Act (FLSA) and the Reno County Job Description for the emergency manager, manning is normally available for one standard 40-hour work week. This means the Office of Emergency Management has manning coverage for approximately one-sixth of the time required for around the clock and daily manning. There is a good possibility that emergencies and disasters can occur without a trained emergency manager in the EOC. This conclusion is based on a work force equation which requires 5.6 people to achieve full coverage manning. Therefore, it is imperative that the EOC facilities and the Reno Emergency Operation Plan (EOP) can be used without a trained coordinator present.

The greatest single obstacle to successful operation of the EOC by someone other than the coordinator, is the lack of knowledge about the sizable manual

and automated information systems in the EOC for operations and plans. The current manual systems are being designed with decision matrixes and checklists with the aid of a computer. We are making forms and other documents as self-instructional as possible. The professional library has been color-coded, using plastic binders and large subject labels on the spines for easy reference. The next Reno Emergency Operations Plan will also be color-coded to match the library references and the color scheme is designed to be as logical as possible. For example, blue and black is used for natural disasters and general references, red is for manmade hazards, green is for HAZMAT, yellow is for radiological, white is for plans and grey is for communications. A quick reference list is hung on the wall of the EOC using a clipboard so that the EOC can be activated by someone other than the emergency coordinator. Position guides have been created for approximately 37 functions.

Automated emergency management systems will be the heart of the turnkey idea. Personal Computers (PCS) and compatible Windows<sup>1</sup> software programs are the primary elements of the information system. Local data bases will be added with available county resources and prepared for response and recovery events. To simplify the use of computer technology, Windows-based software was chosen as the computer medium of choice. This is because of the intuitive nature of Windows programs and their ease of use for training and operations. We are using both Computer-Aided Management of Emergency Operations (CAMEO<sup>2</sup>) and Emergency Information Systems (EIS) software as our primary systems. In addition, Reno County will have digital orthophotography produced maps on compact disks (CDS) available within a year. We conducted two training classes for CAMEO last year with another CAMEO class scheduled this year. EIS training will begin soon. This training will allow other department heads and managers to initiate both

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<sup>1</sup>"Windows" is the trademark name for a software program sold and distributed by MicroSoft Corporation.

<sup>2</sup>"CAMEO" is the trademark name for a software program distributed and supported by the Environmental Health Center, a division of the National Safety Council.

<sup>3</sup>"EIS" is the trademark name for an emergency management information software sold and distributed by EIS International, a Division of Research Alternatives, Inc.

planning and computer-aided disaster responses in the EOC in the event the full-time coordinator is absent.

Because of rapid changes in automated technology we have established a comprehensive information system plan, which allows for maximum inter operability, supportability and commonality of data for decision-making. We have transferred the requirement generated by this information system planning into the annual budget for the governing body to consider. Since we anticipated that the general fund (the tax base) would not support all the requirements, many grants, gifts and loans have satisfied the needs from outside the tax base. For example, the EIS software was obtained by grant. We are satisfying the need for laptops through a partnership with the local community college who has a portable computer lab. The Army National Guard will share certain communications equipment in a disaster. This prearranged equipment support from the Guard was made possible by a Memorandum of Understanding which allows for community-based planning in Reno County. We anticipate other military-civilian cooperation in an EIS users group.

We believe that a comprehensive turnkey system can be completed in about 36 months by a staff of two, augmented with volunteers and help from established partnerships in the community. It will include a complete rewrite of the Reno EOP and continuing improvements to the professional library and data bases. Decision matrixes and checklists for standard operating procedures and position guides will also be computer generated. We have transformed the EOC into a dual purpose facility. It functions as both an operations center and a multimedia training classroom. The EOP will become an automated document for PC use and will also be published in a manual backup form. We will train department heads and staff in the same room they will operate from in disasters using the multimedia capability of the EOC. With this combination, we anticipate a capability that will enable Reno County to respond both rapidly and effectively in any contingency.



## DISASTER PREPAREDNESS ACTIVITIES IN CALIFORNIA AFTER THE 1989 LOMA PRIETA EARTHQUAKE

*By*  
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### ABSTRACT

The American Red Cross received donations from all over the United States for the victims of the October 17, 1989 Loma Prieta earthquake. After assisting earthquake victims with their immediate needs, the American Red Cross set up the Northern California Earthquake Relief and Preparedness Project to administer a special fund of these donor-designated contributions for further earthquake preparedness measures and to strengthen response capabilities of American Red Cross chapters in northern California.

After the initial distribution of relief assistance, the American Red Cross and the United Way of the San Francisco Bay Area then jointly established the Northern California Disaster Preparedness Network to use some of the remaining American Red Cross funds to implement a five-year plan called the Greater Bay Area Vision for Disaster Preparedness which had been developed by the United Way.

Three committees were established to award disaster preparedness grants to community-based organizations in northern California counties. These were the San Francisco Bay Area, Santa Clara County, and the Tri-County (Monterey, San Benito, and Santa Cruz counties) Community Disaster Preparedness Committees.

There were 47 grants awarded during the first three years of this five year program. Some typical grants were: translate community response team training materials into Cantonese, Tagalog, and Spanish; outfit earthquake and fire safety training trailer scaled to the size of a six-year old child for teaching school children earthquake preparedness; develop culturally relevant materials and dissemination methods to train low income Spanish-speaking

families in disaster preparedness; and adapt training in disaster preparedness and first aid for the visually impaired and distribute materials in cassette, large print, and Braille.

## **INTRODUCTION**

The American Red Cross received 74 million dollars in designated donations to help earthquake victims in northern California after the 1989 Loma Prieta earthquake. As it turned out, these funds were more than enough for the immediate disaster relief efforts. Therefore, it was determined that any money left over should remain in northern California and be used for earthquake preparedness activities.

## **NORTHERN CALIFORNIA EARTHQUAKE PREPAREDNESS PROJECT**

Initially, two million dollars were used to establish a two-year American Red Cross unit called Northern California Earthquake Preparedness Project to build greater American Red Cross earthquake response capacity throughout the region. This was the first fully funded risk area-specific Red Cross unit created to evaluate current levels of preparedness and to invest in planning, preparedness and education. This two year project prepared risk analyses of natural disasters, developed a disaster response plan for American Red Cross units in northern California, and assembled an extensive resource directory of American Red Cross human and material disaster response resources.

## **NORTHERN CALIFORNIA DISASTER PREPAREDNESS NETWORK**

However, it became evident that the American Red Cross alone cannot provide all the services a community would need after a large disaster. It was then decided that the Red Cross should take the lead in organizing the coordination and cooperation of other community-based organizations and businesses to assist local governments in coping with preparedness activities for a big disaster, perhaps of the magnitude of the 1906 San Francisco earthquake. The United Way of the San Francisco Bay Area had independently studied these large scale disaster response problems. United Way had held a series of town meetings with 600 participants and engaged a consulting firm to develop a vision of community education for disaster preparedness. From thousands of comments and multiple needs identified by the participants, six themes were distilled:

- ¥ Prevention and self sufficiency
- ¥ Coordinated response
- ¥ Assessing needs
- ¥ Raising and deploying resources
- ¥ Learning from experience
- ¥ Sustaining and improving preparedness

The American Red Cross and the United Way therefore jointly decided in 1992 that the American Red Cross would provide funding of five million dollars for a new five-year project called the Northern California Disaster Preparedness Network to implement this vision of community education.

### **COMMUNITY DISASTER PREPAREDNESS COMMITTEES**

The Northern California Disaster Preparedness Network established Community Disaster Preparedness Committees in San Francisco, Santa Clara County, and the tri-county area of San Benito, Santa Cruz and Monterey counties. The mission of these committees was basically to review applications for grants from local organizations and to recommend distribution of funds (approximately a million dollars each year). Examples of the types of projects which have been supported are shown in the Appendix.

### **SANTA CLARA COUNTY DISASTER PREPAREDNESS COMMITTEE**

Each committee began its work by preparing a risk analysis study of its area to determine if there were unique problems or considerations which should be taken into account for preparedness for a large scale earthquake. For example, the Santa Clara County Committee is responsible for a total population of 1,455,828. The county includes the cities of San Jose (population 782,248), Sunnyvale, Santa Clara, Palo Alto, Milpitas, and Mountain View. Twenty-one percent of the total county population is Mexican with 2.4 percent speaking only Spanish. In three areas, over 40 percent of the population is of Mexican ancestry: East Foothills (41.8 percent), Gilroy (self-proclaimed "Garlic Capitol of the World" 47.3 percent), and San Martin (55.6 percent). Other populations at risk are Asian and Pacific Islander residents, especially for 3.7 percent of the population who speak only their native language.

Based on its analysis, the Committee identified three local special programs for future assistance:

**Multicultural programs:** target isolated populations who have not received earthquake preparedness education, and provide instruction in first aid and earthquake preparedness in appropriate languages.

**Communications:** provide communications in multiple languages, and encourage communications planning among local governments, schools, businesses, and non-profit organizations for the diverse populations.

**Collaboration/Resources:** Develop a service plan for coordinating resource delivery to the various diverse populations of the community.

The initial projects of the Santa Clara Committee listed in the Appendix illustrate the emphasis placed on these three themes.

### **TRI-COUNTY DISASTER PREPAREDNESS COMMITTEE**

The Tri-County Committee found a dozen gaps in disaster preparedness in Monterey, San Benito and Santa Cruz counties:

- ¥ Lack of adequate planning for sufficient emergency shelters.
- ¥ Lack of disaster personnel to run shelters and provide assistance (numbers, training, and multi-lingual/multi-cultural skills).
- ¥ Lack of planning for temporary homes (foundations and utilities for FEMA-supplied mobile homes).
- ¥ No coordination of organizations (Red Cross, Salvation Army, National Guard, schools, and churches).
- ¥ No training, no exercising and no participation in the State of California's annual earthquake exercise.
- ¥ Offers of assistance from amateur radio operators to provide emergency communications had sometimes been rejected.
- ¥ Lack of neighborhood self-help response groups.
- ¥ Gaps in planning for disabled and elderly populations.
- ¥ No planning for utilization of convergent volunteers.
- ¥ No planning for pet shelters with food and veterinarians (Red Cross will not allow earthquake victims to bring their pets with them into shelters).

- ¥ No planning for donations (requirements, receipt, inspection, sorting, cleaning, repair, storage, transport, and distribution).
- ¥ Lack of mutual aid agreements for cooperation and coordination.

The criteria for prioritization of projects to address these gaps in disaster preparedness given to the organizations who were preparing applications for grants included three aspects: cost effectiveness, transferability, and coordination of organizations. For cost effectiveness, projects were reviewed to determine if they provided maximum impact with minimum funding, and if they used human and material resources in a cost-effective manner. For transferability, projects were reviewed to see if they had a broad impact and could be transferred for use by other groups inside and outside the Tri-County area. For the coordination issue, projects were reviewed to see if they had appropriate operational interfaces with local government and other groups, if they benefited populations at special risks, and if they provided knowledge of preparedness back to the community.

## **DISASTER PREPAREDNESS SYMPOSIUM**

On October 17, 1994, the fifth anniversary of the Loma Prieta earthquake the Northern California Disaster Preparedness Network presented a disaster symposium and recognition event- Beyond Loma Prieta: Pioneering Preparedness - at Millbrae, California. An exhibit of disaster preparedness materials and services developed by the 133 organizations supported by the Network had been prepared for the participants. The symposium's program included a keynote address "The Lessons of Loma Prieta" by Sylvia Panetta and a variety of workshops:

- Preparing for special needs of elderly, disabled, and lower income populations.
- FEMA, Red Cross, California Emergency Services: Heeding the lessons of Loma Prieta.
- Coordinating Community-based disaster services.
- Coordinating disaster health & mental health services.
- Strategies for serving non-English speaking individuals and immigrants.
- Business pioneers disaster preparedness.
- Preparing for special urban needs.
- Resources for preparedness (grants information workshop).
- Our preparedness report card: Priorities, gaps, recommendations.

Moving on toward our vision for disaster preparedness.

## **CONCLUSION**

The American Red Cross and United Way established a five-year program in 1992 to implement a vision of community outreach and education for disaster preparedness in northern California. The basic approach was a grass-roots effort to get local people and local organizations to examine problems which had been encountered in the Loma Prieta earthquake. After gaps in disaster preparedness had been identified, local organizations were encouraged to submit applications for grants to address these problems. This paper is a progress report on the grants awarded by the three committees.

**APPENDIX:  
Initial Grants Awarded By Community Disaster  
Preparedness Committees**

American Red Cross (Bay Area):

Survey community based organizations and develop a plan for comprehensive community preparedness. Develop partnerships.

University of San Francisco:

Conduct two seminars to promote collaboration among community based organizations and local governments, Design an emergency management curriculum.

The Volunteerism Project:

Prepare Volunteer Centers to survive an earthquake, and collaboratively manage emergent volunteers in a five county area.

St. Vincent de Paul Society:

Organize social service auxiliary of San Francisco Archdiocese (San Francisco, San Mateo, and Marin counties) for disaster relief.

City of Oakland:

Translate community response team training materials into Cantonese, Tagalog, and Spanish.

City of Pleasanton:

Prepare for disaster-caused needs of special education students, especially transportation.

Berkeley-Oakland Support Services:

Organize county wide coalition of community-based organizations to prepare for disaster response and relief, and integrate into the Standardized Emergency Response System plan.

Santa Cruz Westside Community Health Center:

Purchase equipment and supplies needed to qualify as a designated disaster response clinic during a declared disaster.

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### Oakland Fire Department:

Provide search and rescue training for teams of public and private sector people selected for their level of special skills and commitment to respond regionally and nationally.

### Marin County Volunteer Center:

purchase emergency power and communications equipment as part of a county wide plan to manage volunteer resources in disasters.

### Marin Fire Prevention Officers:

Outfit fire and life safety training trailer for use at schools and fairs, staffed by trained volunteers.

### Nicasio Disaster Council:

Train, equip, and provide coordination for neighborhood emergency response teams. Provide model of training and outreach to Marin County.

### Fire Safe Marin:

Augment county wide fire safety awareness and outreach program as a coalition of public, private, and community agencies.

### San Francisco Chinese Health Coalition:

Educate and recruit volunteers for preparedness activities. Conduct disaster response drill.

### San Francisco Fire Department:

Train Chinese and Spanish-speaking neighborhood emergency response teams, using culturally relevant adaptations of the Neighborhood Emergency Response Team training program.

### San Francisco Food Bank:

Plan to provide post-disaster food distribution to low income areas through predesignated and prepared sites.

### San Francisco Chinese Health Coalition/The Salvation Army:

Adapt and deliver personal and neighborhood preparedness programs to homebound populations in Chinatown.

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### Santa Clara County Community Agency Disaster Relief Effort:

Develop and maintain the capacity of the county's nonprofit agencies to respond to disaster resource and service needs in conjunction with government, business, and other response agencies.

### Alviso Family Health Foundation:

Develop culturally relevant materials and dissemination methods to train low-income Spanish-speaking families in disaster preparedness and first aid. Increase collaboration between the Mexican community and the American Red Cross.

### Alum Rock Union Elementary School District:

Provide students and parents with disaster preparedness and First Aid skills in English and Spanish.

### Santa Clara County Emergency Managers Association:

Translate earthquake education materials into Asian languages, and develop multi-lingual educational tools for media dissemination.

### Peninsula Center for the Blind and Visually Impaired:

Adapt training in disaster preparedness and first aid for visually impaired people. Distribute materials in cassette, large print, and Braille.

### San Benito Health Foundation:

Conduct preparedness outreach and education for low-income rural isolated populations.

### Monterey County Area Agency on Aging:

Create an emergency "Just-in-Case" three day food package for Meals on Wheels recipients for disaster periods such as earthquakes when transportation of daily meals may be impossible.

### San Benito County Salud Para la Gente:

Train community-based clinics in effective strategies for immediate disaster response and develop plans to maintain primary health care services during disasters.

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American Red Cross (Santa Cruz County Chapter):

Adapt the In-kind Donations System developed by the American Red Cross to the needs of Tri-County organizations. Develop a community-based coalition to solicit in-kind donations and manage their flow during disaster response operations.

Second Harvest Food Bank of Santa Cruz & San Benito Counties:

Complete Food Bank disaster response plan for maintaining operations and service in the event of community-wide disasters.

Santa Cruz Westside Community Health Center:

Purchase equipment and supplies needed for disaster response during a declared disaster.

Pacific Grove Fire Department:

Purchase and equip an earthquake preparedness and fire safety trailer (two story house built to the scale of the size of a six-year old child) for use at schools throughout Monterey, Santa Cruz and San Benito Counties.

San Benito County Community Pantry:

Complete, implement, and test the Community Pantry disaster plan to assure distribution of food during a disaster. Develop outreach and training materials in Spanish.

Davenport Fire Department:

Purchase an emergency power generator and develop an evacuation center for this isolated coastal region.

City of Watsonville:

Create training materials and distribute the Watsonville community disaster plan to Spanish-speaking rural areas of Hollister, San Juan Batista, Salinas, Gonzales, Soledad and King City in Monterey and San Benito counties.

San Lorenzo Valley Disaster Planning Committee:

Prepare an outreach disaster calendar using art prepared by school children to increase community awareness of disaster preparedness for 28 organizations in this isolated valley near the epicenter of the 1989 Loma Prieta earthquake

## MISSION, CAPABILITIES, TASKS

### The Militia And Disaster Response

*By*

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Virtually every state's laws provide for various classes of the Militia<sup>1</sup>, the citizenry organized to provide military service to their state at the call of the Governor. The best known form of the Militia is the National Guard. However, in 26 states other organized state military forces report to the Adjutant General and provide resources to meet his missions. These are purely state forces (as opposed to the National Guard which has both state and federal responsibilities), and may be titled Defense Force, State Guard, Guard Reserve, Military Reserve, or Emergency Volunteers. While the specific missions these Defense Forces (the generic title) are trained to perform vary from state to state, in most cases they have at least some disaster response capability. As organized volunteers, they may offer a significant augmentation to state disaster response capabilities.

The Virginia Defense Force was organized in 1984 with a primary security mission, to defend the state when the National Guard was federalized in a crisis. However, by 1993, the need for this role had clearly disappeared. With the Adjutant General's concurrence the Defense Force's leadership redefined the organization's mission as supplementing National Guard disaster response capabilities. This role becomes increasingly critical in the face of on-going and projected drawdowns and realignment of National Guard force structure nationwide. The very real possibility exists that some traditional state missions will become increasingly difficult for the Guard to perform in a catastrophic event as units change mission and manpower shrinks.

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<sup>1</sup> Note that Militia as used in this article has nothing to do with the private armies masquerading under this title. The so called militia organizations are not governmental in nature, do not answer to the command of state authorities, and do not conform to either legal or constitutional requirements. They have no standing in law or with the legitimate military forces of the states.

The process of mission definition the Virginia Defense Force went through can apply to any organization that is attempting to find a legitimate niche in supporting local or state emergency management. We approached it in three steps, expressed as Mission, Capabilities, and Tasks.

The term mission is commonly used in both the military and business to mean what an organization does as its central reason for existence. Mission statements are now becoming more common in government as a way of focussing what an agency is in business to do. This focus is critical to organizational success because it sets the direction for funding, staffing, training, equipment acquisition, etc. An organization interested in providing emergency management related services needs a mission that fills a gap in city, county, regional, or state needs. In our case, our mission was to support the Army National Guard. Expressed in more formal terms, it is to "support the crisis mobilization of the Virginia Army National Guard and to assist in disaster response to protect the lives and property of the citizens of the Commonwealth." However, as we were to find by trial, and much error, that defining this niche was not simple.

We took a long, hard look at our capabilities. The Virginia Defense Force had a very limited budget (enough essentially to keep a building open and the phones answered), no fleet of vehicles, or much equipment (except member owned radio communications and aircraft). However, we had a pool of volunteer personnel with a lot of management and command and control related experience. We had limited training time each year (based on a monthly meeting schedule), but most of that time could be focussed on mission training. Based on these factors we defined 14 Objective Capabilities. This term was chosen because these were capabilities we felt we could either perform now or realistically work toward and could also be measured and evaluated. As examples, our list included:

- ... Traffic control.
- ... Unarmed access control and security.
- ... Aerial damage assessment.
- ... Emergency communications.
- ... Shelter support.

Obviously, each of these Objective Capabilities covers a number of different jobs and tasks. We used the Army's Mission Essential Task List (METL)

process to further define the Objective Capabilities by describing the tasks within each Capability that our personnel and units could perform. For example, we broke Emergency Communications down into tasks such as operate a communications center, deploy emergency communications stations, etc. The resulting list included 72 METL tasks. Each of these tasks serves as the basis for skill definition and the development of training plans.

The mission-objective capabilities-tasks linkage has proved vital to us for several important reasons. First, we realized early on that the complete list was too much for any organization to do well. This realization was reinforced by the realities of disaster funding - it simply cost too much to put our personnel on State Active Duty and pay them, even given the 75-25 provisions of the Stafford Act. As a result there were a number of capabilities that we would never be called to do because other resources cost the state considerably less to use. Working with the Virginia National Guard staff, we pared down the list from fourteen to two capabilities (operating emergency operations centers and emergency communications) they specifically needed and in which roles we would be used.

Second, the process of refining mission and capabilities has focussed our emergency operations planning. We now have a clear view of how many people of what level of training we have to provide at what times in a response to do what tasks. We are now building our plans and checklists around operational reality, rather than an endless series of what if propositions about possible roles and assignments.

Finally, we have developed a refined 30 task METL. While each task may involve a dozen or more specific skills and knowledges, the aggregate is a manageable training problem. The definition of tasks, with their skill and knowledge elements, has effectively given us the list of what lesson plans we have to develop, as well as how they should be grouped for local unit level training and centralized statewide schools. We still use the complete laundry list of Objective Capabilities in initial orientation training, but now to broaden our members' understand of the size and complexity of disaster response. Our advanced training focuses on the development of the specific skills the National Guard needs us to be able to perform.

The process of coming to closure with what we would do, how, and how we would prepare for it has been iterative. We have refined and refined

again what we felt we could do, and do well. To our members it sometimes seems we have been around in circles, many times. However, the payoff has been clear and obvious. First, by being realistic and focussed, we developed credibility with the National Guard and our state Department of Emergency Services. Second, for the first time in the Virginia Defense Force's 11 year history, our personnel were called to State Active Duty and actually employed in the roles we had trained them for. Third, and possibly most important in a volunteer organization, our people feel they really have a job to do with an obvious increase in morale and seriousness about training for the day they are called to serve.

Every disaster response organization has to come to terms with how they best fit into the overall emergency management effort. We are by no means finished the process, because we feel that organizations must continually evolve and reexamine and refine their roles. However, I suggest that any organization trying to find its niche could benefit from walking through the mission-capabilities-tasks process.

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### III. RESPONSE

#### COMMAND VS. COORDINATION

##### Optimal Systems for EOC Management

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An ever increasing number of emergencies and disasters require the coordinated efforts of multiple agencies in managing response and recovery actions. These actions are most often coordinated and controlled from a jurisdictional Emergency Operations Center (EOC). The organizational structure of the EOC varies widely throughout the country. So, too, does the command or coordination system to direct the actions of the participating agencies within the EOC.

There is a growing shift to restructure EOC organizations, often to organizations modeled after the highly successful field Incident Command System. This restructuring, however, is often completed without any (or sufficient) consideration of environmental/human characteristics or variables, specific to that jurisdiction, which may impact group behavior under a command oriented structure.

This study will explore the differences between command and coordination or more specifically, centralized and decentralized systems in an Emergency Operations Center structural context. The investigation will center around the interrelatedness of three sets of independent variables: environment, technology, and individual human behaviors, and how they impact the dependent organizational structure. Propositions or relationships will be drawn from the investigations to establish a model through which Emergency Managers may develop organizational structures to best facilitate EOC operations in their jurisdictions. Central to this study is the consideration of two research questions:

- 1) What independent variables should be analyzed in establishing an appropriate organizational structure for EOC operations?
- 2) What dimensions of the identified variables should determine the structure?

Why should we be so concerned with organizational structure? There is general agreement that no one management or control system is optimal for every jurisdiction. Variables such as jurisdictional size, disaster experience, interorganizational relations, and the individual community actors all may influence the adopted model. Efforts to standardize structures to one uniform model is likely to be ineffective (Wenger, Quarantelli, & Dynes, 1987). Emergency Management practitioners have no certainty that an organizational model which is highly effective in another jurisdiction or corporation will work when applied to their own organization. As a matter of fact, what worked in their own jurisdiction two years ago, may not be optimal today. Organizational structures are constantly changing, whether or not we realize it. Richard Hall (1991, p. 48) describes them as "... continually emergent as they are influenced by successive waves of members, interactions among the members, and incessant environmental pressures." Ranson, Hinings, and Greenwood define structure as "a complex medium of control which is continually produced and recreated in interaction and yet shapes that interaction: structures are constituted and constitutive" (1980, p. 3). Despite this constant internal change, the structure itself, nevertheless, has a strong inertial tendency (Hall, 1991). The properties we build into them tend to remain - a resistance to change often mirroring our own.

## THE SYSTEMS APPROACH AND CONTINGENCY THEORY

In agreeing that all emergency operations center organizations are (and should be) different, we are establishing, for the purpose of this study, a theoretical framework based on open systems or contingency theory. In open systems theory, an organization is viewed as a system consisting of interdependent parts existing in a dynamic relationship with its environment, "receiving resources from that environment, transforming those resources into outputs, and transmitting them to the environment" (Heffron, 1989, p. 8). Contingency theory emphasizes the differences in organizations, maintaining that organizational structure, leadership, staffing, planning, and control are contingent upon the environment, organizational task (Dessler, 1976) and member needs

(Lawrence and Lorsch, 1970). Both open systems theory and contingency theory emphasize the importance of situational analysis: "the identification and analysis of multiple variables that affect and determine organizational behavior and effectiveness" (Heffron, 1989, p. 10). This approach therefore, would argue that understanding those multiple factors or variables is key to understanding organizational dynamics and crucial to successful organizational design.

### **CENTRALIZED VS. DECENTRALIZED - THE EOC DILEMMA**

To identify and establish a classificatory scheme among the studied variables, we will compare the variables in relationship to centralized and decentralized systems. This is the relationship in organizational theory terms that most closely addresses the central dilemma in emergency operations center organizations. It allows us to apply the variables to decision making and communication in a highly volatile crisis situation from two perspectives: 1) the direct hierarchial lines of authority associated with command (centralized) systems, and 2) a more distributed leadership model typified by a coordination (decentralized) approach. Organizations may have both high and low degrees of centralization. Centralization is:

the locus of decision making authority within an organization. When most decision are made hierarchically, an organizational unit is considered to be centralized; a decentralized unit generally implies that the major source of decision making has been delegated by line managers to subordinate personnel (Van de Van and Ferry, 1980, p. 399).

In basic terms, high centralization occurs when decision-making is performed at or near the top of the organization. Low centralization, on the other hand, allows individuals at lower levels to share in making decisions based on their own experience or judgement (Hall, 1991). There are strong arguments for both centralized and decentralized systems in emergency conditions. Traditionally, disaster management strategies have been highly centralized and directive. Control is placed in the hands of a few experts, and other agencies and the general public are left relatively powerless (Comfort, 1990, p. 93). This works well when the problem is well defined and all actors have the same level of training and task familiarity (Comfort,

1990), e.g., a Hazardous Material Response Team using an Incident Command System (ICS) structure to manage a hazardous material incident in the field.

Some, like Dror (1988), advocate a centralized hierarchal structure with one top decision-maker and clear-cut line-staff relationships. He argues "consensual, and coordinational arrangements do not permit rapid and clearcut decisionmaking with due accountability" (Dror, 1988, p. 267). As both the range of participants and the scope of actions involved in emergency management operations increase, however, the degree of complexity also correspondingly increase, straining the problem solving/decision making capacity of organizations relying upon traditional command and control systems (Comfort, 1990 & Comfort and Cahill, 1988).

Frequently, there is an underestimation of the need for flexibility and improvisation in emergency management (Wenger, Quarantelli, & Dynes, 1987). There is also the issue of communication. Effective communication is a major determinant of success in emergency operations centers. The greater the degree of centralization, the greater the social distance, and the less communication (Hage, Aiken, and Marrett, 1971).

### **THE INTERDEPENDENCE OF SELECTED VARIABLES**

Emergency Operations Center organizations (as well as most organizations) may be viewed as a network of interdependent parts or relationships comprising a whole. These parts may be characterized as environmental, functional or human parts or variables that directly impact the organization as well as one another. A change in one part affects the whole. Independent variables most clearly impacting organizational design for an EOC have been identified in three sets of variables as mentioned earlier: environmental, technological, and individual human behaviors. Although an examination of each of these independently impact the organizational structure, they are also interdependent on one another. In analyzing the individual variables and their dimensions as they relate to organizational design choices, therefore, it should be remembered that they must be viewed as a whole. Although one set of variables may point to a decentralized form of coordination as being preferable, for example, a majority, when applied to local conditions, may indicate a centralized command and control approach.

## ENVIRONMENTAL VARIABLES AND THEIR RELATIONSHIPS/DIMENSIONS

The organizational environment is not some sort of concrete parameter in which organizations operate. Hall (1991) likens the environment to information that must be processed. The organization absorbs this information and in processing, is influenced by it. All communication and decision-making in the EOC is dependent on its response to these environmental factors. The structure of the organization itself is influenced by the attempts of the organization to adapt to the environment (Heffron, 1989). Given the degree of impact on the organization by the environment, it becomes even more critical to constantly analyze present and future changes in the organizational environment in order that the organization may be adapted in a planned, organized manner. As a whole, decentralized organizations are more flexible and responsive to environmental pressures and the changes necessary to respond to them.

### Certainty

Proposition: In a turbulent, rapidly changing environment, a decentralized organization is more flexible.

The high degree of uncertainty associated with disaster response and recovery actions has important consequences for the internal structure of the EOC organization, particularly in delegation of decision-making. According to Drabek (1991), a condition of "uncertainty" exists when a manager is required to make a decision without the benefit of historical data concerning the variables and/or unknowns and their probability of occurrence. "A stable environment permits and encourages formalization, the development of routines, rules, and standard operating procedures" (Heffron, 1989, p. 74). Normal police and fire responses to a localized incident would be characterized as stable and fairly certain. Formalized and centralized response organizations such as the field Incident Command System structure, therefore, would seem the best choice in designing a response organization to operate in that environment. During a multi-agency response to multiple incidents as occurs in an EOC, uncertainty is high. Rules and procedures here have to be flexible to respond to unforeseen circumstances and rapidly changing events. Thus, a decentralized strategy appears preferable in disaster operations, where adaptation to the dynamic environment occurs more easily (Comfort, 1990). Supportive of this were the results of the Bell studies, where the following

hypothesis was developed and tested: "The more unpredictable the work demands of a subordinate's job, the more distant the supervision will be ... the more predictable the work demands, the closer the supervision" (Bell, 1965).

### Crisis

Proposition: Immediate life-threatening decisions, often necessary in response actions, dictate a centralized approach. When time pressures are less critical, as in recovery actions, a decentralized system generates the best solutions.

In a time of crisis, there are few goals, except to immediately correct a problem (Drabek, 1991). "When followers are under stress, speedy decisions from directive, task-oriented, structuring leaders are likely to be readily accepted. But speedy decisions do not necessarily provide the best solutions to the problems facing the followers (Bass, 1992, p. 136). The reason often lies in rapid decision-making without the opportunity for careful structuring and support. Additionally, situations may occur where there is "devolution of decision authority on individuals, often of low rank, because time pressures prevent group processes and hierarchical controls from working (Dror, 1988, p. 262). The more decentralized the organization structure, the more parallel teams that are involved in decision making, thereby compressing time necessary for multiple decisions. Sometimes, a shortage of time in a centralized organization allows issues which are important, but not immediately pressing, to be neglected. Assignment of such tasks to special functional experts in the more horizontally complex decentralized organization allow more timely, and effective action. It is important to note that Comfort's (1990) studies indicate a drop in efficiency in a decentralized system, critical in life-threatening events. Conversely, in a large centralized organization with high vertical complexity, communication/actions may be delayed for the same events.

### Resources

Proposition: The higher the level of resources, the more effective a decentralized system.

Tough choices have to be made relevant to the availability of very limited resources. Often, competition for resources may subjugate the focus on the organizational goal to that of the individual or agency goal, thereby decreasing effectiveness and efficiency. Fewer resources equate to less complexity. Small jurisdictions with limited resources, therefore, may find a centralized

system as more ideal. Larger jurisdictions with increased resources, specialization, and correspondingly higher complexity should consider the merits of a decentralized organizational structure to better capture the talents of a wider resource base.

#### Interorganizational Relatedness

Proposition: The higher the interorganizational relatedness, the more centralized the organization should be.

"Exchange relationships, supported by timely, valid information from the disaster environment, are critical to implementing effective community response in a disaster" (Comfort, 1990, p. 104). Interorganizational problem-solving "requires a reconceptualization of the goals of common action and a sufficiently specific body of shared knowledge among the participating organizations to allow the concurrent formulation of constructive alternatives for coordination" (Comfort, 1988, p. 182). Police and Fire agencies, although they have different missions, share a close interorganizational relatedness. They operate from a highly structured organization with formal rules and standard operating procedures that guide their actions. If an EOC is made up of similar agencies and their personnel, centralized control, a system they are familiar with, would be effective. On the other hand, if the EOC participants are from diverse city, county, state, and volunteer organizations, accustomed to varying organizational cultures, interorganizational relatedness would be low. Here, accommodations must be made in the design of the organization to bring together and coordinate the disparate skills and experience of the participating agencies/representatives. Desired coordination for "interorganizational performance" is not likely to occur without deliberate design, especially in large-scale disaster and recovery operations involving multiple organizations interacting across jurisdictional boundaries. There is also the interaction between the agency/emergency management personnel and that of the political decision-makers.

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**Environmental Variables**

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<i>Variable</i>	<i>Centralized</i>	<i>Decentralized</i>
<b>Certainty</b>	<b>Stable, Unchanging Environment</b>	<b>Uncertain, Rapidly Changing Environment</b>
<b>Crisis</b>	<b>Immediacy</b>	<b>Less time dependent</b>
<b>Resources</b>	<b>Limited personnel and equipment</b>	<b>Larger pool of resources</b>
<b>Interorganizational Relatedness</b>	<b>High</b>	<b>Low</b>

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**TECHNOLOGY VARIABLES AND THEIR RELATIONSHIPS/DIMENSIONS**

Technology in organizational theory has greater meaning and impact than that of the equipment/materials used in the organization. It is the technical process that participants use in the organization to achieve their objectives (Presthus, 1978). The vertical and horizontal complexity of the organization, the span of control - all are impacted directly by the technological factor. Hickson, Pugh, and Pheysey (1969) broke down the general concept of technology into three components: operations technology - techniques of work flow, materials technology - the equipment or materials used in the organization, and knowledge technology - the knowledge system used in the work flow.

Computerization

Proposition: The higher or more wide-spread the level of computerization, the more information available for decision making. The wider the dissemination

of information in the organization, the more effective a decentralized system with delegated decision making will be.

Computerization is an example of materials technology. There is growing dependence on automated systems in the dynamic emergency management environment. In an emergency, the huge amount of information processing is overwhelming. The necessary interaction between people and events increases dramatically in proportion to the size and scope of the disaster.

"Carefully designed information processes, or inquiring systems, increase the learning capacity of interdependent community organizations and improve the effectiveness of individual and organizational responses in a disaster" (Comfort, 1990, p. 104). Computers can be a mechanism for gathering and communicating intelligence estimates on the problem/situation. The wider circulation of critical intelligence information among the EOC staff allows for greater participation in knowledge based decision-making.

#### Homogeneity

Proposition: The greater the internal heterogeneity of an organization, the greater the horizontal complexity, therefore, the greater the effectiveness of a decentralized organization.

Centralized systems work best when the direction of the organization involves a single activity (or homogeneous set of activities), e.g., fire suppression, flood control. It can be planned and directed by central decision-making authority. "Previous training, shared commitment, and common understanding of the tasks involved positively impact performance" (Comfort, 1990, p. 104). The opposite may be true in some Emergency Operations Center responses. Heterogeneous activities are possible, even likely, in major disaster responses. The organization may be responding to multiple incidents of varying characterization, e.g., power outages, fires, and hazardous materials releases as a result of an earthquake. The greater the heterogeneity in the organizational activities, the greater the complexity and uncertainty, and hence the greater desire for a decentralized approach.

#### Specialization

Proposition: The greater the differentiation, the greater the need for horizontal communication, therefore the greater the need for a decentralized system.

Specialization here relates very closely to the homogeneity variable above. Organizational specialization here is defined as highly specialized roles and tasks that are similar in nature. A Fire Department, for example, would be an example of a highly specialized organization. As jobs become more specialized, dependence, subordination, and passivity, increase (Argyris, 1960). One of the assumptions of scientific management theory is unity of direction. "If the tasks of every person in a unit are specialized, the objective or purpose of the unit must be specialized" (Argyris, 1960, p. 13). Differentiation creates a plurality of parts. In order for an organization to be effective, those parts must form a relationship to one another. As the number of specialties increase, so does the number of coordination points among the parts, increasing complexity, and pointing to a decentralized approach. Uncertain environments contribute to horizontal differentiation.

#### Task Interdependence

Proposition: The greater the degree of horizontal task interdependence, the greater the need for horizontal task communication, therefore, the greater the need for a decentralized organization. The less the degree of task interdependence, the greater the need for vertical task communication, therefore, the greater the need for a centralized organization.

It is important to maintain both interorganizational and intraorganizational knowledge of task responsibilities (Wenger, Quarantelli, & Dynes, 1987). All parts of an Emergency Operations Center affect and are affected by each other. As task interdependence increases, more horizontal, interactive coordination increases. An example may be the need for close interaction between Human Services personnel and Red Cross Shelter personnel in arranging counseling services for sheltered evacuees. Both representatives may have responsibilities that closely overlap. Coordination, is therefore, imperative. The more task interdependence, the greater the argument for a decentralized system. If, however, the EOC participant's responsibilities are clearly delegated, and outlined in operating procedures with little or no overlap in services, a centralized system would probably be easier to manage. Response is hindered, however, if there is not understood delegation of specific tasks. Task structure is a major determinant of variations in an organization's internal structure (March and Simon, 1958).

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**Technology Variables**

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<i>Variable</i>	<i>Centralized</i>	<i>Decentralized</i>
<b>Technology</b>	<b>Low</b>	<b>High</b>
<b>Computerization</b>	<b>Low</b>	<b>High</b>
<b>Homogeneity</b>	<b>Single Activity</b>	<b>Multiple Activities</b>
<b>Specialization</b>	<b>Low - Highly Specialized, similar roles/tasks</b>	<b>High - Differentiation, elaboration of roles</b>
<b>Task Interdependence</b>	<b>Low</b>	<b>High</b>

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**INDIVIDUAL HUMAN VARIABLES AND THEIR INDIVIDUAL VARIABLES AND THEIR RELATIONSHIPS/DIMENSIONS**

The organization cannot be separated from the individual participants. Each influence one another. Individual behaviors results from the organization. The organization should result from present or projected behavior. Of the three independent variables addressed in this study, this is arguably the most important for the emergency management practitioner to understand and relate to his/her organization.

Argyris, (1960, p. 24) conceptualized organization as a behavioral system, concluding that an organization is a composite of four different, but interrelated subsystems, resulting in the following kinds of behavior:

- ▶ The behavior that results from the formal organizational demands.
- ▶ The behavior that results from the demands of the informal activities.

- ▶ The behavior that results from each individual's attempt to fulfill his idiosyncratic needs.
- ▶ The behavior that is a resultant of the unique patterning for each organization of the three levels above.

### Experience

Proposition: The more centralized the participant's home organization, the greater the participant's dependence on rules and authority to govern decisions in the EOC.

Effective emergency response requires the creation of a "communitywide knowledge system that makes available to responsible managers not only the physical resources, but also the intellectual understanding of how to adapt available materials to actual needs in a disaster" (Comfort, 1990). Emergency response agency personnel, i.e., police, fire, etc. will be accustomed to field command situations, where primary duties are exercised, but may be more uncomfortable with EOC coordination roles. Without clear cut authority, and formalized command decisions, they may feel the EOC is out of control, or that responsibilities are ambiguous. Nevertheless, if Emergency Managers design the organization strictly around those needs and expectations, they run the risk of putting blinders on the organization. During disaster situations, where there is often little of the routine, innovative solutions to difficult problems are likely to come from those participants in the EOC who do not know the textbook solution. When analyzing the experience variable's impact on the structure design, the Emergency Manager must weigh carefully the strengths of what is likely two divergent camps in the EOC - the first responders and the service professionals and volunteers.

### Skill Level

Proposition: The lower the skill level of the EOC participant's, the greater the need for centralized control. The higher the skill level of the participant's, the greater the need for flexibility and autonomy under a decentralized system.

Skill levels of EOC participants is likely to vary greatly between organizations. It may be attributable to several factors:

- ▶ Availability of human resources, often related to the size of jurisdiction

- ▶ History of emergency or disaster experience in the jurisdiction or among participants.
- ▶ Frequency, intensity, and character of the disaster threat
- ▶ Activeness of a training and exercise program in the jurisdiction
- ▶ Level of involvement of key individuals in the public and private sector.

If the level of the participation by the jurisdiction in these factors is high, there is likely a higher skill level available to respond to an emergency, than if there was a negative correlation. Some further distinctions or subpropositions should be made here.

If the general level of skill level is low, but the leader or authority has a higher level of skill level, centralization should be considered.

If the skill level for all the participants is low, decentralization should be considered.

If the skill level for all the participants is high, decentralization should be considered.

If the skill level for the general participant's is high, but the authority is low, decentralization should be considered. (This could very easily happen in jurisdictions where there has just been an election with a new mayor, etc.)

### Status

Proposition: The greater the differences in status of the participants, the more desirable a centralized system. The higher the overall status of the participants, the more desirable a decentralized system.

Individual or group status is an important variable for the selection of EOC management systems. Status may be viewed in two ways: 1) the rank or level of an individual or group in relationship to others in non-emergency situations, and 2) emergency status. Emergency Operations Center staff are generally lead or key personnel in their respective agencies. Situationally dependent, emergencies drive certain EOC processes to become more critical than others, e.g., operational agencies are often the key players in the early

stages of response and recovery, while logistical support and administrative functions increase respectively with the duration of the event. This change in agency/personnel priority and its accompanying state place internal stressors on the staff of the EOC. Authority patterns are disrupted. Structural design should take in consideration the potential conflict and power plays that might occasioned by this rotating status.

### Power

Proposition: The greater the presence of power and influence concentrated in non-authority personnel, the more desirable a centralized organization.

Power here is to be defined as non-legitimate or informal authority. Power and influence does not always rest with the organizational authority, regardless of the degree of centralization. "Intrinsic needs create power" (Benveniste, 1977). The stressful, uncertain conditions surrounding disasters may precipitate an increase in the intrinsic needs of the participants. They may react to the organization and environment by creating informal activities (Argyris, 1960). These informal activities/relationships may directly impact the direction of the organization. A principal manifestation of this is through power and influence being exerted in the organization by other than the legitimate structural authority. The disrupting individual may be more persuasive, more of an opinion leader, or may be recognized as a source of credible information. Particularly in decentralized organizations, differentiation within the organization is an important source of disagreement over processes and methods of response (Pfeffer, 1981), which may, if allowed to influence organizational members in opposition to the recognized authority, disrupt and delay critical decisions. This could, of course, have positive attributes in instances where poor, or short-sighted decisions are being made by the legitimate authority. "As the degree of congruency increases between the individual's needs and the organizational demands, the need for the informal activities will tend to decrease and as the degree of congruency decreases the need for the informal activities will tend to increase" (Argyris, 1960, p. 20). Bass (Heller, 1992) suggests that participants stressed by ambiguity are easily influenced by aggressive, powerful individuals who promise to reduce the ambiguity and restructure the situation. Any of these circumstances can seriously disrupt the organizational effectiveness, but more so in a decentralized organization, where there is less control over these individuals.

Authority

Proposition: In a centralized organization, authority is generally more defined and recognized. In the more horizontally complex decentralized organization it is more likely to be changing and less stable.

Authority is often a controversial term. Here it is defined as "formal" or legitimate authority. Weber (1947) linked authority to legitimacy. In other words, it usually is dependent on official position within the organization. People voluntarily obey authority if they perceive it as legitimate, but will cease to obey if they decide that authority has lost its legitimacy (Bolman & Deal, 1991). Presthus, (1978, p. 114) defines authority "as the ability to evoke compliance". Authority in Emergency Management organizations are usually predicated on what Weber (1947) called "legal-rational". Organizational members obey individuals who hold certain offices, because it is universally accepted that they have the legal right to be obeyed. The more formal and hierarchical the organizational structure, the greater the impact of authority.

**Individual Human Variables**

<i>Variable</i>	<i>Centralized</i>	<i>Decentralized</i>
<b>Experience</b>	<b>Low, Dependence on Rules/Authority</b>	<b>High, Independence</b>
<b>Skill Level</b>	<b>Low, Well defined job descriptions</b>	<b>High, Jobs less defined, flexible</b>
<b>Status</b>	<b>Low in Predisaster Situation (e.g., lower, middle mgmt)</b>	<b>High in Predisaster Situation (e.g., agency head)</b>
<b>Power</b>	<b>High Ability</b>	<b>Low Ability</b>
<b>Authority</b>	<b>Universally recognized</b>	<b>Less Defined/Changing</b>

## THE EFFECT OF LEADERSHIP IN THE CENTRALIZATION VS DECENTRALIZATION DEBATE

The primary responsibility of leadership is the control, direction, and coordination of the interrelationships of the parts of the organization (Argyris, 1960). Effective leadership in stressful situations organizes efforts in ways which will "promote vigilance, thorough search, thorough appraisal, and contingency planning to avoid defective coping with threat" (Heller, 1992, p. 144). Centralized, directive leadership often succeeds when followers are under stressful conditions (Heller, 1992). It also tends, however, to predict more dependence, submissiveness on the part of the participants (Argyris, 1960). Dependence, subordination, and passivity are not desirable behavioral attributes in a crisis situation. Argyris, (1960, p. 15) indicates these very characteristics increase:

- ▶ As one goes down the chain of command
- ▶ As directive leadership increases
- ▶ As management controls are increased
- ▶ As human relations programs are undertaken by improperly implemented

Drabek (1991) argues leadership styles should be adjusted based on the 1) phase of the disaster, e.g., directive for immediate crisis, participative during recovery, and 2) interpersonal relationships, e.g., participative when dealing with professional colleagues, coordination with non-subordinates, and directive, when working with unskilled or inexperienced subordinates. Direct correlations may be drawn between this leadership guidance and the centralized vs. decentralized dimensions of the variables explained above.

As we have mentioned before, there is no concrete guidance for designing an appropriate organizational structure to meet every jurisdictional contingency. Hall (1991, p.83) summarizes the benefits and shortcomings of centralization this way:

High levels of centralization mean greater coordination, but less flexibility; consistent organizationwide policies, but possibly inappropriate policies for local conditions; and the potential for rapid decision making during emergencies, but overloaded communications channels during normal operations as communications flow up and down the hierarchy.

Nevertheless, careful study of the environment, technology, and individual human behavior variables which affect all emergency management organizations will assist the Emergency Management Coordinator in developing the EOC structure to match the strengths and idiosyncracies of his or her participants and community. Hage, Aiken, and Marrett (1971, p. 303) define coordination as "the degree to which there are adequate linkages among organizational parts - that is, specific tasks roles as well as subunits of the organization - so that organizational objectives can be accomplished." Regardless of the system selected, organizational objectives can be accomplished, if adequate consideration goes into planning and design.

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## EVACUATION ISSUES

### Challenges And Some Solutions

By

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Ocean County, New Jersey is challenged with planning for almost every potential threat imaginable, with the exception of volcanoes. Our largest potential threats include coastal storms and flooding, forest fires and hazardous materials accidents. We also spend a great deal of time planning for an incident should an emergency occur at the Oyster Creek Nuclear Generating Station located in the central section of our county.

In the nearly twenty-five years I have worked in disaster preparedness, several issues and many problems have arisen regarding evacuations. In the following pages I intend to discuss some of the problems we encountered, and how we have attempted to, where possible, dissolve the problem or at the very least, lessen the impact and trauma of evacuation for the residents and visitors of our county who find themselves faced with a crisis.

Ocean County is geographically the second largest county in the state of New Jersey with six hundred thirty-eight square miles of pine barrens and barrier islands and forty-five miles of coastline along the Atlantic Ocean (in total, there are more than one hundred fifty miles of waterfront property in the county).

The county ranks ninth in population in the State, with over 440,000 residents year round. Population figures can often swell to two million on a summer day. The tourist population however, in some instances does not give us a problem during an evacuation. Most tourists are within driving distance of their permanent residences and when weather problems are forecast, they simply don't come or if they are already here, they return to their homes. For that reason, hurricanes, coastal storms and severe weather do not usually

pose a problem regarding tourists. As I mentioned, they don't stick around or even visit the beaches and amusement parks during a storm.

However, in an incident which is not foreseeable, the tourists can cause some challenges during an emergency. For example, our county can barely cope with weekend traffic on the current roads and highways, so evacuation time estimates must be greatly enhanced to accommodate evacuees when tourists are included. When there is a hazardous materials incident or other unexpected emergency, obviously these evacuation time estimates are of even graver concern and we don't have minutes to spare.

I would be remiss if I did not mention another challenge tourism occasionally brings to Ocean County. Previously I mentioned that most tourists come to visit using their personal vehicles; however nearly 13,000 busses pass through the county daily, all year long. Because Ocean County is located approximately sixty miles south of New York City, seventy miles east of Philadelphia and fifty miles north of Atlantic City, you can imagine why we are so besieged with busses. Obviously these busses, can present potential hazards of their own and can severely impact our major evacuation routes.

Transportation accidents, are fairly frequent, including those involving the trucking industry traveling between these major cities and can compound a crisis involving evacuation.

One of the most challenging goals regarding evacuation in Ocean County has to do with the ages of the population we attempt to evacuate. More than one third of our total permanent population is over the age of sixty-five. In one of our municipalities, with a permanent population of 35,976 (according to the 1990 census), 20,806 are over the age of sixty-five. In another municipality, a senior citizen village of 15,445 homes, (in which 24,403 individuals reside) is bordering a neighboring municipality's industrial park. Unfortunately, the issue is not whether these homes should have been built, but rather how to evacuate the residents when the need arises, in an efficient, expeditious and safe manner.

Many of these senior residents have migrated from the cities and learn to drive automobiles for the first time in their lives, when they arrive. They learn very quickly that public transportation within the county is severely limited and not always easily accessible. They generally learn to drive from their homes to the shopping mall and grocery store and back home again.

We have learned through experience that our older residents are often unfamiliar with the locations of shelters (public schools) that we have used previously because they are not on their usual routes of travel. The additional stress this places on the evacuee can be disastrous, or at the very least, compound an already traumatic situation.

More than seventy-five percent of our senior citizen population lives in one of the more than sixty senior villages. This can be a significant factor when you consider they are unlikely to have a neighbor to ask for directions, who is any more familiar with shelter locations, than they are.

One of the most effective solutions we have come up with for this problem has been to introduce the neighborhood shelter concept. In all but a few of the senior citizen villages, there are large community centers or clubhouses which are used for recreational purposes. These are generally spacious buildings with large rooms used for meetings, dinners and holiday dances. All of the senior residents are familiar with their locations, because their recreational activities are focussed there. Many of these facilities have back-up generator power as well. The American Red Cross has made a commitment to survey these buildings and identify them as shelters, so as to lessen the liability to the associations which own them.

The American Red Cross is also committed to training personnel from each senior village to manage these shelters as American Red Cross volunteers, should the shelter be activated. This has worked extremely effectively when an incident has caused an evacuation within the senior villages. The senior citizens seem to like taking care of their own, proper procedures are insured, and, of course, the municipal emergency management coordinator gains all of the trained personnel as an additional resource. In a widespread emergency, the senior residents are sent to the same facility, which is utilized as a staging area. Busses are brought in and the residents have the option of taking the bus to the more remote shelter or following the bus in their private vehicle. The stress of trying to find an unfamiliar shelter is substantially reduced using this concept.

The neighborhood shelter concept is not just utilized within our senior citizen villages. We have instituted this system throughout the county. In municipalities at large; private and religious schools, churches, civic organizations and veterans organization buildings are utilized to enhance the

public school shelters which have always been used. Personnel are trained by the American Red Cross, from within the membership of the church or organization and from the school employees. If the emergency is short term (less than twenty-four hours), and if the neighborhood shelter is self-sustaining and not requiring additional resources from the American Red Cross or other outside agencies, we have no problem, regardless of how many shelters are open. The shelters would likely be combined if the incident dictated long term shelter efforts and additional resources. This has been a win-win solution to a lot of frustration and stress in the past. The residents rarely have to go beyond their neighborhood since ninety percent of our emergencies are relatively short term and limited in size. The American Red Cross and the municipal emergency management organizations have enhanced their resources and found additional trained personnel that can be activated in an emergency.

One additional note regarding senior citizens: we learned the hard way when a tornado struck one of our senior communities some years ago and destroyed ninety-seven homes, senior citizens do not always go to shelters even when they are made available. They are just as likely to go to a neighbor's home to stay. This caused us all kinds of problems because the community that was hit was very large and the media reported it almost immediately. Family members from as far away as Denmark called, to check on their loved ones and when they couldn't get an answer at the senior's home, we received the calls. Many times we could assure the caller, by asking the address of the senior, that the home was not affected. However many of the callers had to wait until a search was completed before we could be sure their family member was fine. In almost every instance, they were found staying with a generous neighbor whose home had sustained no damage. Because the tornado occurred in the evening hours, none of the seniors expected their families would hear about it before morning, so few calls were made by the victims that evening. We now stress they should call their loved ones as soon as possible, because the media will be reporting at all hours.

We are also taxed with a growing increase of homebound handicapped who may, or may not be, ambulatory. This group is a continual challenge to identify as they are reluctant to admit their vulnerability. For those in the ten mile emergency planning zone surrounding the nuclear facility, information including a short questionnaire is mailed each year. Only a small percentage however, are willing to respond with the postage paid mailer. Additional

information is gathered through the thirty-five municipal first aid squads, and Ocean County agencies such as; Social Services, the Office on Aging, the Handicapped and Elderly Transportation Service, Visiting Nurses and Visiting Homemakers. Obviously this is a continuous challenge to update, and keep current, accurate lists. Pre-planning for the evacuation of this segment of the population is extremely difficult.

Another group which is exceptionally trying to identify, and increasing in numbers very rapidly, is our latch key kid population. Ocean County has very little industry to support its population. More than forty-two percent of the working population (according to the 1990 census) must commute outside of the county to their place of employment. Unfortunately, when you add commuting time to the regular work hours, it not only increases the number of children home alone, but increases the length of time they are home without supervision as well. If our senior citizens are reluctant to admit their vulnerability and handicaps, parents are absolutely terrified to admit their children are latch key kids. Their fear that they will be perceived as negligent parents is greater than their fear that something could happen to their child, if they were not evacuated in a timely manner.

To complicate this issue further, the first thing parents teach their children is, "don't answer the door to a stranger, and don't go with a stranger". I remember well, teaching my own sons these two valuable lessons. Valuable lessons, until it is necessary to evacuate an area for the public's safety. It could be fatal to a child who has been instructed not to answer the door to a stranger and not to go with a stranger. I have met countless times with law enforcement, emergency responders, educators and parents groups over the years and this remains an extremely emotional and sensitive issue and a very difficult problem to attempt to solve. What is evident, is that there is no simple resolution to the problem. We cannot promise children that a law enforcement officer will be doing the knocking on their door during an evacuation, we cannot even promise that the emergency responder going from door to door will be in a uniform. We have spoken to law enforcement agencies in regard to giving an identification card to each responder, but this item would only provide the criminal element who prey on children, one more tool to use against the very children we are attempting to protect.

We also, whenever possible, keep children at the schools after hours rather than dismiss them, if the likelihood of an evacuation is evident in their

neighborhood at home. We can then send in busses to evacuate the school if it is necessary. It is much easier to move the children as a group, than if they were all back in their homes and alone.

The only potential for a successful end, when dealing with children and evacuation, seems to be perseverance and public awareness. Whenever a public awareness program on any subject is done, for any age group, the subject of evacuation and latch key kids is brought up. The community needs to be aware, so they can discuss it with friends and family prior to an emergency and develop their own family emergency operations plan.

To assist our residents, we have written and distributed thousands of our Evacuation Cards. These are a single page fact sheet regarding evacuation that are printed on orange index weight paper and are intentionally very simple and concise to read. They contain information addressing why the public might have to evacuate in Ocean County, what they should prepare to bring with them if they should need to evacuate, the Emergency Broadcast System stations for the county, how they can receive information regarding the evacuation of livestock and pets and where they can call for emergency transportation when their area is being evacuated and they need assistance. We encourage our residents to slip these evacuation cards in their telephone books or to tack them inside their kitchen cabinet or pantry door.

Recently we were able to procure a small pass through mitigation grant made available from the Federal Emergency Management Agency, which allows us the capability to translate the evacuation card and our other public awareness brochures into Hebrew, Russian and Spanish. This will help some of our older residents who are uncomfortable reading English. We were thrilled to find a computer program which will not only translate, but print these brochures using the appropriate alphabet. We will be having members of the ethnic communities proof read these documents for translation errors prior to printing to insure that the intent and meanings of the dialogue didn't change in the translation process. These ethnic groups are eager to help and have been extremely pleased that we have shown an interest.

In one municipality working with the different cultures is fairly new, when it concerns emergency management efforts. This municipality, of just over forty-five thousand people, has a large, multi-cultural population of different racial, ethnic and religious backgrounds. Nearly one half of the population

is Jewish, a majority of which are members of the Hasidic and Orthodox faiths. This religious background is significant because of dietary laws and travel regulations within their faith. If, for example, an evacuation was determined necessary in an emergency, and it happened to be a Saturday or a Jewish holy day, it would be necessary to contact the religious leaders so that the evacuation could be conducted. Notification of these leaders would need to be done as early as possible, because they would have to be convinced of the need, prior to the movement of their people. They are not supposed to use any modern means of transportation on their days of worship. To compound this issue further, there are very strict dietary regulations and so whatever shelter they are sent to, they must either have a Kosher kitchen or they must have their food brought in by a Kosher caterer.

The neighborhood shelter concept has been extremely successful in facing these challenges. Working with the municipal officials, religious leaders and the American Red Cross established that a large Hebrew School for Girls could very well be utilized as a shelter for any members of the community, whatever their religious beliefs.

In addition to these challenges regarding religion, at different times there exists a tension between the different cultures mixed in this municipality that would not prove conducive were they forced to share a shelter facility. This is a reality that needs to be addressed sensitively and sensibly when planning for the evacuation and sheltering of the residents within this municipality. Again, by meeting with community leaders prior to an emergency, the needs and desires of the public can be more easily identified and respected. For many years the municipal Emergency Management Coordinator believed that to question these leaders would have been interpreted as bigoted and racist. However, this municipality now has a new Coordinator who feels that these leaders need to be involved with the planning for what is in the best interest of their people. This program has become very successful as a result of some very frank, honest meetings where the problems that do exist can be openly discussed.

There is one other issue that we have managed to find some solution to, within our county. For many years we recognized that many of our residents would be unwilling to evacuate their homes, if they could not bring their pets with them. At the very least they wanted to bring their pets with

them to whatever shelter they were assigned to. Fortunately, during every occurrence I can recall, there always seemed to be someone from the private sector who would come forward during the crisis to offer a commercial garage or another large building for the housing of pets during the emergency. During Hurricane Gloria, the inner core of the Ocean County Mall was actually used for this purpose. We had no definite plan however, and since most of our emergencies are limited in scope and size, and relatively short time in nature, we never seemed to put any serious effort into planning for pets on our list of priorities.

We then found ourselves facing an emergency which would spur this effort enormously. On May 3, 1992 a forest fire started in the pinelands area surrounding the Oyster Creek Nuclear Generating Station. Hundreds of acres burned and for the first time in its rather long history, the nuclear facility was forced to declare an Alert emergency classification level. There was no risk of a radiological release but the backup generator lost its power because of this large fire. Due to the Nuclear Regulatory Commission regulations, the Alert was declared. We were able to keep the media focussed on the real risk to the public which was the fire; however, within a few hours we had more significant problems.

During a wind shift, a farm with over one hundred fifty horses and numerous other animals, was suddenly threatened and the owners were given twenty minutes to leave their property. With a great deal of effort and a lot of luck, all of the animals were evacuated to a safer area approximately two miles away, but it wasn't accomplished in twenty minutes. After the fire was extinguished, the owners of the farm asked why they weren't given more notice and time to evacuate. The Fire Chief and Emergency Management Coordinator (who is also the municipal Police Chief) were aware there existed a farm which had some animals, but because of its location in this wooded area, they were totally caught off guard by the quantity of animals. In a series of meetings with these farm owners and county and municipal emergency management personnel, it was amazing how many of these situations were present within the county. We even discovered a farm in another municipality which had tigers and other exotic cats on its premises and municipal emergency responders were totally unaware of it. It became evident fairly quickly that we were probably only scratching the surface and something needed to be done. We also felt that our longtime fears regarding household pets could and should be addressed simultaneously. It was also

obvious that current county and municipal personnel and resources were not available to do more than assist in these efforts.

Thus, the formation of Help in Emergencies for Livestock and Pets (HELP). This volunteer organization, whose members are farm owners, pet owners, veterinarians, animal breeders, kennel owners and a host of others interested in their cause, has done a phenomenal job in a relatively short period of time and with little, or no resources. Their efforts have stimulated interest for similar groups nationally and they have gained support and resources from a number of major companies, agencies and organizations. One of HELP's continual goals is to identify how massive the problem is. For example, working with the Ocean County Planning Board and utilizing the figures provided by the 1990 census and the American Humane Association, they have determined that there are more than ten thousand cats and dogs, nearly seven hundred horses and over twelve hundred pet birds in the ten mile emergency planning zone surrounding the nuclear generating station. When you consider the fact that many of these animals are considered cherished family members and others represent the livelihood of the owners, it becomes more evident than ever that pre-planning on how they will be evacuated and where they will be sheltered, becomes critical.

HELP has now written two publications, one for pet owners and one for livestock owners. These guides provide the reader with specific direction on how to plan ahead for a crisis and how to safely evacuate their animals. The county has assumed the cost of printing these brochures, and they are distributed at public awareness programs, veterinarian offices, feed stores, pet stores and kennels. Many of the municipal offices give them out when dog and cat licenses are purchased each year.

This group also has developed resource lists of food sources, veterinary services, equipment, properties and vehicles which can be utilized in an emergency to care for pets and livestock. They have procured grant monies to stockpile cages and other supplies that may be needed, and recently they have been working with state legislators to pass a bill which will protect them against any liability for their efforts and provide workman's compensation should they be injured while assisting with evacuating or rescuing an animal during an emergency situation.

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In closing, I hope that you have found something useful in this report and I invite you to feel free to contact me if you would like a copy of one of our brochures or more information on one or more of the segments regarding evacuation, previously discussed. In Ocean County we don't feel that we are experts in evacuation, nor do we feel we can't learn more. We have had more than our share of experience however and we are always receptive to exchanging ideas and suggestions on how we can improve in our emergency management efforts.

## NATIONAL GUARD RESERVE

### A Resource for Protecting the Emergency Operations Center

*By*

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### A BRIEF HISTORY

The Nevada National Guard Reserve, Military Police Group (NNGR) has a long and colorful history in the Silver State. It's beginnings are hard to trace. We do know that members distinguished themselves in hand to hand combat in northern Nevada, as a cavalry unit during the Indian wars of the early 1800's. This volunteer organization was called upon to protect the settlers living in the foothills, those living along lazy winding creeks, lakes and mining towns. Their authority extended protection to the state capitol of Carson City and many of the other townships and smaller settlements along the way of this new and scenic western frontier. The NNGR was officially recognized as being a component of the Nevada National Guard through passage of Assembly Concurrent Resolution No. 76, on June 12, 1987, by the State Assembly and State Senate with endorsements from the Speaker of the Assembly, Chief Clerk of the Assembly, President of the Senate and Secretary of the Senate, with a copy thereafter delivered by order to Brigadier General Drennan A. Clark, the Adjutant General of Nevada. The reserve's members are all volunteer's, consisting of retired military enlisted and officer personnel, some of which are highly decorated Vietnam veterans, local, state and federal law enforcement officers, practicing attorney's, and many other men and women from every walk of life who volunteer their time towards making the community a better place to live. Most of the states in the United States have National Guard Reserve units that are organized like the one in Nevada and that operate under color of authority through specific state statutes. The NNGR, unlike their counterparts the National Guard, can be called into active duty by the Governor or State Adjutant General. The National Guard requires a governor call up. Although their primary training and duties are

as Military Policemen, they can function in most any capacity during a disaster or emergency situation.

### **A SOBERING SCENARIO**

In 1994, a major earthquake devastated the San Fernando Valley area of Los Angeles. We now call this quake the Northridge Earthquake because of the vast devastation and loss of life in that particular community. Following the quake's aftermath, while the ground still shook, state and federal emergency responders gathered their resources and began opening up the State Office of Emergency Services (OES), Disaster Field Offices (DFO), the Emergency Manager Mutual Aid Office (EMMA) and mobile Disaster Application Centers (DAC).

The system was up and running. Those who prepared the emergency plans for this type of scenario soon learned that they as individuals were targets by confused citizens, who were angry about what had happened to them and how they felt they were being treated by the system. Many volunteer workers reported that they were threatened with their lives or with bodily injury. It is my opinion that the addition of building and perimeter security for those workers would have greatly reduced such threats and would have limited less stress for all concerned. One can only imagine what would have occurred if this was the long awaited 8.0 earthquake.

Imagine, if you will, being in a facility that everyone knows is self supporting with food, water and medical equipment one that has its own generator for light and warmth, one that has communications with the outside world. Now take your imagination a little deeper and view what the community outside your safe harbor looks like: smoke climbing into the sky, people needing help, broken bodies, no food and no water available because the buildings collapsed and the water pipes severed. Broken gas mains are shooting flames a hundred feet in the air. A quake of this magnitude would strain all resources and it may be days or weeks before added resources be obtained. Place your self in the victims' shoes. Where would you go to seek food and water and help? Yes, you would seek out a place just like the one responders are lucky enough to occupy. Is it possible that these normally quiet and lawful citizens might be totally unruly, desperate, in a total survival mood, yes? Do you think that they might over run you and take over your command center, yes? Do you think that they may even kill

you at some point for a glass of water, yes? One needs to be realistic and take these factors into consideration when developing your emergency operations plans.

### **THE NNGR AS A RESOURCE**

The NNGR is trained and operates as a military police department. They are capable of effecting arrests, securing and transporting prisoners, protecting life and property and providing police patrol as any other police officer in your community. This resource is valuable and is the answer to your EOC safety problems discussed here in our imagined scenario. By utilizing the NNGR, or if you are in another state, your local National Guard Reserve (NGR), as a potential security force during these times of major disaster, the facility that is so important to the communications and direction of assistance for the community, will be secured and able to carry out its functions. Without it many more people will perish and help will only be a word.

### **WHAT DO I NEED TO DO?**

You need to send a written request to the Commander of the National Guard Reserve, in your state and officially request their assistance in providing you emergency disaster assistance support. The Commander receiving such a request will add his comments to the letter of request and forward it to his next higher headquarters for disposition and analysis. Experience has shown that your request will be well received and acted upon. Following the initial authorization from headquarters, you will need to meet with the S-3 or G-3 officer, who is the Operations and Plans Officer for the state. It will be necessary for you to interact by allowing them to at times train with you so that their role with regard to your facility is well understood.

### **OPERATIONAL PLACEMENT FOR NNGR PERSONNEL**

When considering the placement of NNGR personnel at your facility it would be beneficial for you to include roving patrols set away from the facility that are mobile and that can provide early warning of problems coming your way. In addition there should be foot patrols outside the facility. With reference to stationary security, two observers should be placed on the roof, situated diagonal from each other where each one can look down and see two sides

of the facility walls. Inside security should include relief personnel, door and pass checkers and two men roving patrols. A reserve reaction squad should be ready to respond to hot areas and protect the building flanks as needed. The personnel involved should have direct radio communications.

## **CONCLUSION**

The NNGR is there to help you with your needs. Make use of their knowledge and experience and allow them to function on your team. Many of these men and women saw combat in Vietnam and some in the Middle East. They are professional soldiers, trained as police officers.

## THE EMERGENCY ACTION GUIDE

By

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### INTRODUCTION

One of my former papers was entitled "Emergency Management, Make It Simple." I believe this, not only in my professional duties, but my private life as well. I believe, also, we create most of the additional work for ourselves. Maybe, simplifying our work and our life will make more time for those things we want to do. The profession of Emergency Management is taking a turn for the better. Things are looking up every day!

Duplication, verbiage, volumes of unnecessary substance are words coordinators use to describe their Emergency Plans. The titles for these plan are numerous in length as are the titles for emergency management. How did we create this documentation nightmare? Better yet, how are we going to get out of it?

Describing what an emergency plan or guide is, should be based around information to get through the emergency. Most of the plans I come into contact with are the emergency. One large company in my city had a beastly problem determining how to bring the Union, Administration, and Human Resources to a point of agreement over a portion of their emergency plan. The plan consisted of a section devoted to violence in the workplace, and there seemed to be great disagreement in the emotional implementation into the overall plan. After meeting with the three individuals, it took about 30 minutes to reach an acceptable conclusion. Simplify the process in a checklist approach which allowed the duties of each area represented with responsible duties. The responsibilities were clearly indicated on the few pages required in the plan. Sometimes we look for more than what is possibly needed.

I am happy to say that same plant has now adopted an emergency checklist format for their new plan. Win-win situations occur when we openly and intelligently determine the real basis for emergency planning. An example I heard describing emergency plan development came from a task force meeting on Emergency Plan Development at the state level. The person posed this scenario. "Do airplane pilots take out a thick, heavy, cumbersome plan when the airplane is upside down and can't be righted? Or, is there a quick checklist indicating the most appropriate means of bringing the air plane back to a normal balance". We all had to agree that the checklist would be more germane in that situation. I believe this type of plan or guide would be germane for emergency management purposes.

Travel along with me as we attempt to look at different ways to provide a more simplified way of providing our important services. What you will read in the next few pages are my independent thoughts on how my city responds to the planning process and the guides developed to handle the emergency. It is important to note that each jurisdiction, business, home or building is based on location, location, location when developing emergency guides. You may have noticed how I have moved from the word plan to guide. Again, this is a personal thing with me. I look at all emergency operation as being able to change in direction at a moments notice. Locking us into a plan, we may be predisposed, when it comes to immediate change in direction. Each of these thoughts will require your own interpretation before completing your assignment.

I ask that you keep an open mind and remember a guide must provide you with an accurate and concise means of completing your task while protecting lives and property.

## **THE EMERGENCY GUIDE**

The first thing I am going to do is give the emergency document a new name. We will now call this grouping of information the Emergency Guide, with the understanding that it can be called anything you wish.

When the plane hits the ground, the tornado impacts the jurisdiction, the hazardous material release forces the evacuation, when the flood waters impinge on the homes, or whatever causes immediate action; we all need to be guided by something that escalates what we have learned and practiced.

Whether our knowledge is great or small on the subject, we all require assistance at some point in time. In the emergency, this assistance needs to be laid out in a manner that transcends barriers.

One of the barriers I have found in this profession involves the apathy of the people in their response to disaster. People are inclined to disregard the word disaster, I believe out of fear. Fear that is brought about by two reasons. The first, presupposing people do not know how to respond to the danger or emergency which creates fear. The second, bears on human nature of not wanting to think about placing themselves or loved ones in harm's way. Whatever the reason, the word disaster causes people to not respond in a favorable way to a threat or the emergency. On the other hand, people are recorded favorably for actions above and beyond when reacting to emergencies.

Emergencies happen every day. Disasters happen less frequently, except in California. Sorry California. On the serious side, Californians probably do respond positively to the word disaster with regard to what they should do. Words have an impact on what our perception will be to a situation. I have found that the word disaster has a very negative connotation except for making light of it. Thinking about what disaster means to others assisted in my attempt at making the Emergency Guide more meaningful and simplified for my customers.

Changing the name, simplifying the content, along with decreasing the amount of repetition formulate a product I felt comfortable with. I was amazed at the local coordinators in my state who felt the large Emergency Operation Plan was fine just the way it was. No need to change. What wonderful things happen when change is accepted and acted upon as change is needed.

Realistically, emergency management has not changed that dramatically in the past thirty years overall, however, change has been frequent and consistent in certain jurisdictions throughout the United States.

## **THE EMERGENCY GUIDE CONTENT**

How much is enough? Enough is the least amount to get the job done safely, quickly, and in the most cost-effective manner. When I assume the duties in the city, there were thirty-five to forty Emergency Operation Plan books being distributed and maintained. Maintained is not the correct word,

abandoned is more appropriate. Council people who had lost the election took their copies with them, department heads didn't know where their plans were, and I saw no logical need to police that number of plans. We now have a copy of the Emergency Guide in the Emergency Coordinating Center, a copy in the Mayor's Office / City Administration, one copy each for the four Assistant Coordinators and a full work copy in my office. The State Police District Coordinator receives a copy and the Macomb County Emergency Management Office maintains one. The Fire, Department of Public Works, Finance/Assessment/Documentation, and the Police Department maintain copies of their Section along with any attachments required.

Let me now share with you what I believe simplifies the Emergency Guide writing process. Emergency management in Sterling Heights begins with the City Ordinance, Emergency Management. The document details who, what, why, where and when emergency management will be provided within the city. One lesson I learned early on in my career is people will allow the coordinator to do everything for them, not realizing their responsibility. The Ordinance directs key individuals to responsibility for developing, implementing, and maintaining their Sections of the Emergency Guide. Not only is responsibility placed on the department head responsibility is given to assign a capable person to represent emergency management in their department of office. This simplifies my duties and abates any argumentative confrontations of who is responsible.

I have taken the entire Guide and broken it down into six sections. What was called the Basic Plan was incorporated with Direction and Control Annex. This Section includes the Public Information Officer and Emergency Management. It is now called the Executive Group Information and Checklist Section. I was often confronted with the question of why emergency management was not included within the document. I guess I wondered about that myself. By adding it, other groups get to know more about the office.

The Public Information Officer (PIO) for the city is the Director of Community Relations. Because the position is full-time, the PIO requested I do away with the many books and references and compile them into one document. I responded to the request by inserting "Citizen Instructions" for each hazard listed that may impact the city. She loved it. The PIO also is supplied with a checklist of what is needed to guide our elected officials

and administration through the emergency. I will agree this takes up more space, however, making it simple for our emergency volunteers helps me also. Emergency volunteers? Yes, I consider all of the city personnel involved with declared emergencies as volunteers. Since we have not had a major incident in 25 years, and exercises are only offered a couple of times per year, I believe thinking of them as volunteers helps me to make sure they are well prepared.

There are sections for Law Enforcement, Fire Services, Public Works, Finance/Assessment/Documentation, and Health/Human Services. Another plus from the Ordinance places specific responsibilities under certain departments. An example, Law Enforcement becomes responsible for Air Plane Crashes, Transportation Accidents, Bombs/Bomb Threats, Terrorist Activity and so on. Because of this alignment, placing definite emergency responses in a particular section becomes easy. Many times the question is directed to me of why have law enforcement handle an air plane crash. The Police and Fire Chief were called together in my office and presented the question. After a short period of discussion, it was agreed upon that law enforcement will handle the majority of a plane crash incident. Unified Command would be in place during the initial phase of the emergency with law enforcement handling the scene through to conclusion. This brings up another asset which makes the process more simple for me.

An Emergency Chief's Discussion Group was formed representing Police, Fire, Department of Public Works with this office introducing the concept. The four meet as needed when city wide emergency concerns surface. It works! A recent discussion involved the question of when the Emergency Guide should be activated by field forces. The issue was deliberated with an outcome understood by the major departments. Now the Guide can be realized at the street level, with information filtering down from the top.

## **SECTIONS**

There are six sections as described in the previous paragraph. Each Section contains certain information consistent with the assigned department. Each section is numbered, starting with one thru six. The contents of the section are then individually numbered by page starting with one (1). The section has it's own table of contents, record of revisions, responsible authority numbering three with twenty-four hour contact numbers. This was placed in the Guide

should all phone service be lost, the supervisor on the street can contact their alternate support people by car phone. A situation happened in the city recently, and the supervisor would have the numbers listed in their section of the Guide.

The Executive Group Information and Checklist Section includes the considerations this group will need to look at during the emergency. The list includes things the Elected Official should consider as well. The Public Information Officer found the Citizen Instructions beneficial to her staff because everything they needed was within the section maintained by that office. For instance, a large structural fire Citizen Instruction" indicates those things required by the Public Information Officer and staff to be done. The information is easily gleaned by the staff person to place on radio, television or to distribute.

Added to each section is the authorization page. The Emergency Management Coordinator does not authorize any particular section. The City Manager authorizes the Executive Group Information and Checklist Section, while the other sections are authorized by that particular department head. The department head has assigned Assistant Coordinators, three deep, to represent the emergency management efforts. Most of the time the initial Assistant Coordinator responds to any needs this office may have. Basically, there is emergency management existing throughout the city personnel in the major departments. The Assistant Coordinators consist of the Controller, the Community Development Coordinator, a Police Captain, the Fire Training Chief, and Department of Public Works Administrative Assistant. The representation opens any door within a department requiring support. The Emergency Action Guide is handle through one of these individuals.

There is illustrated, by the checklists depicting hazard specific occurrences that may impact the city, in each section. Again, by assigning specific hazards to key departments, developing guides is simplified. Attachments are used when needed to support a specific department responsibility. The Airplane Attachment to the Law Enforcement Section describes those things responsible to the Police Department which must be considered when a plane crashes. Other than small aircraft, any sizable plane would create instant chaotic jockeying for position by emergency personnel. Large air crashes haven't happened in Sterling Heights, but could. Telephone numbers for key Federal Agencies are listed at the beginning of the Air Plane Crash Attachment. Some coordinators

have criticized this attempt stating phone numbers don't belong in the Guide. My findings indicate that the Command Officer on the street is much more comfortable knowing these numbers are available is only needed once in a life time. Not knowing where the Emergency Coordinating Center may be established, causes a need to list a very few numbers. The spaces provided for this information allows the command person to have with them key numbers such as, airline carrier, Federal Aeronautics Administration, Federal Bureau of Investigation, and the National Transportation and Safety Board. It has been positive for us. If you think this is not the place for three or four resource numbers, which is your choice. I have found that this works in this situation.

The Fire Department is charged with evacuation responsibility. In the Fire Services Section a one page chart indicating steps to an evacuation or in-place sheltering, appears for convenience. Simple enough to not take up a lot of space.

## **FINANCE/ASSESSMENT/DOCUMENTATION SECTION**

The Assessment Annex was changed to include additional responsibilities. The Director of Finance represents the department head for Assessing Office, the Risk Manager, Accounting and Finance Staff along with Purchasing Manager within her department. Documentation staff and risk management play an important role in any major emergency. In the past, most financial personnel were not involved in the overall plan or process. We have the Controller who is in the process of developing an Attachment to this section detailing their responsibilities. The Risk Manager plays an important role in liability to city recovery during the emergency. The Purchasing Manager reviews all agreements and contracts that may occur and coordinates the Emergency Purchase Orders assigned to her. The Assessor is represented in the Guide and is responsible for the Emergency Analyst, and Status Board person. The section has descriptions of those hazards noted and a list of five to ten considerations for each.

## **GUIDE DEPLOYMENT**

During the previous days of the Emergency Operation Plan, we realized a document four inches thick. People would put the book on the back shelf hoping they would never need to try and figure it out. Annex after annex

of duplication tired the most avid reader. Fear was present in most of the department heads. Remarks flowed freely from department personnel in defense of their own fear, a fear established from not understanding or wanting to understand the document. New coordinators may need to be willing to wait awhile for department personnel to come around on their perception of emergency management. It really is a perception on the part of those involved. The same fears that plague our residents is instilled in our government personnel. Twenty-five years as a city, this jurisdiction has not seen anything major. We are continually tested with smaller versions of the Big One, and fortunately, the Big One has eluded us, at least this day.

The Guide was developed for documentation, training, and reference purposes. The original Emergency Operation Plan (EOP) was four inches thick. The new Guide measures approximately one inch in thickness. The individual sections can be disengaged for presentation and training sessions. Placing a page on overhead projector material is made easier because the print has been enlarged. In addition, the member has the section in front of them throughout the training.

The emergency personnel find the checklist application greatly enhances their ability to relate to the incident. The Guide also allows them to take a few pages home for study purposes. The training they receive is then highlighted and retrieved when the group review the checklists of action considerations. Even though one department does not have the section of others, on-going training permits each department to better understand their responsibilities.

I have found nothing in thirty years of emergency service that will cover every situation. For this reason alone, the Emergency Action Guide, or whatever you choose to call it, needs to be flexible and portable. Speaking of flexible and portable, through the Incident Command System, more action is taking place by emergency management at the scene. With a greater control over the incident, commanders can better respond to requests. Because this office is considered a resource to the Emergency Site Incident Commander, taking my services to the scene becomes most appropriate. The Emergency Coordinating Center for the city can be any location required to handle the needs of resource distribution and management while coordinating the Executive Group responsibility. With the onset of fast-moving media, scene activity is taking place more often. Greater flexibility in emergency

management, as well as, better scene control by the incident commander is becoming the norm.

## SUMMARY

Emergency management continues to be a wonderful profession. Change which is needed must occur. As emergency managers we also must accept change in a positive light. Over thirty years of working with other emergency professionals, I have learned that simplification of how to respond to an emergency allows the worker the freedom to practice what it is they have learned to do the job.

The Emergency Action Guide developed for this city will work. The people delegated to provide the task at hand will make sure it works. Presenting a format consistent with proper sequencing of events, and provision of training to the members, will prove our capability as a prepared city when the time comes.

Simplifying the entire process of emergency management is a large undertaking. Providing a document that emergency personnel can understand and use is the first step. The emergency planning process is in need of change for the better. The opportunity to bring about the change lies within each emergency manager and those involved in emergency services. The plans, procedures, guides, and all other names we give them, will determine the direction emergency management takes in the future. By committing ourselves to change for the better, and not just change for the sake of change, we will see a light at the end of the tunnel. Providing our customers the high quality and quantity of services in the rapidly changing world, we must simplify the way in which this service is directed.

The Emergency Action Guide can and should be a tool that is easily assessable, obviously available, effortless to maintain, uncomplicated in understanding, and tolerant to all. This article is meant to assist you in your plan writing responsibility. It is not meant to change any form you presently use if it works. I hope you have gained insight for developing your emergency guide and will let me hear from you, what you think.



## I CAN FEEL WHAT YOU HEAR!

*By*

*William E. Reynolds, CEM*

*Coordinator, Naperville Emergency Management Agency  
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Almost every community has some type of an audio alert warning system to notify their residents of severe weather or major emergency/disaster situations. Naperville, Illinois is no different than any other community in its warning programs, perhaps we have more systems than some communities and less than others. The Naperville system is made up of 19 outdoor warning sirens (system was begun in 1968), an alert radio system of over 145 units which alert all schools, a college, hospital, several nursing homes, municipal buildings, libraries, park district facilities, local businesses and business/industry complexes. We also utilize a voice over-ride on the cable TV system. Our most recent project is an information radio station at 1610 AM, operating 24 hours a day. The AM station works from 3 transmitters to provide adequate coverage throughout the City and into the fringe areas. All components of the Naperville warning system are kept in top working condition from the oldest siren to the AM radio equipment. The alert radios and the cable TV over-ride system are tested weekly while the sirens are tested the first Tuesday of each month. All of these systems rely upon a person being able to hear them so that they are alerted to an emergency/disaster situation.

Naperville is a very progressive and growing community covering over 40 square miles. The population was 83,000 in 1989, and has grown to 100,422, as of October of 1994. As the community grows so does the warning system. A siren is installed in newly annexed areas even before construction is started. Severe weather is a regular part of life in the Naperville area. In 1994, Naperville was under 16 weather related watches or warnings between March 1st and mid-September. In 1993, there were over 30 watches or warnings for the area.

The Naperville Advisory Commission on Persons with Disabilities invited me to address their members concerning severe weather safety notifications and safety procedures. Following my presentation, there was a question and answer session. The question was raised, "how are we, with hearing problems, suppose to hear the warning devices?" This question stumped me

for a moment, then I said I guess we have a problem here that must be addressed immediately. My first thought was of our alert radio system that already was providing the needed information. The units in use feature a flashing alert light to indicate that a message is being broadcast. I explained the alert radio concept to the group. I suggested, that perhaps the manufacturer could add a strobe light to the unit. The strobe light would make the unit more useful to them. They agreed that this may be the best method for them. I contacted the manufacturer of our alert radios to inquire to what it would cost, per unit, to add a strobe alerting light. They were not interested in exploring this idea. This left me wondering what avenues to pursue next when my digital pager on my belt began to vibrate (I, too, have a hearing loss and use hearing aids). I immediately thought we already have a group page on the system to alert City department heads of severe weather by using special numerical code messages, why couldn't we include the hearing impaired residents in this program. I discussed the idea with Marsha Conroy, a City social worker and her immediate supervisor, Barbara Dwyer. I explained to them how we, using a group call system, notified various individuals of weather watches and warnings with specific code numbers. The information will be received no matter where the person is in our area of the State. I also explained to them that the pager unit is designed for both audible and vibrating signaling. I further explained that I experience a hearing loss and keep my pager unit on vibrate to ensure that I know when it activates. The use of the digital pager unit would provide the user with a device that they would always have with them compared to a bulky, cigar box size alert radio. We also discussed the cost for each pager unit. Since the City was already leasing a few hundred of the pager units, we found the cost to be under \$4.00 per month.

Marsha Conroy began checking into how the City could make the units available to 30 identified hearing impaired residents that were already on file, what the monthly cost would be and how to cover the charges. The charges could either be covered by the City or by the user being billed for the service. Sandy Goy, Chairperson of the Advisory Commission, became involved and worked closely with Marsha Conroy in the research and the development of the program for possible implementation. After gaining the information on costs, they set about establishing standards for the operation of the program. The standard finally decided upon requires that the person applying for the pager unit to be a City resident, be a minimum of 18 years of age, have a hearing loss of 65dB or greater and have an audio-graph from

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a hearing doctor. The City Legal Department developed an Agreement to be signed by each pager unit recipient. The Agreement states that the person who signs for the pager unit is the only person to use it, will be responsible for replacement if the pager unit is lost, be responsible for repair expenses (if caused by abuse to the unit), and that the participant, by participating in the program, acknowledges that the City assumes no special duty towards the recipient beyond that owed by law to the general public to provide police, fire, emergency or any other municipal services.

In December of 1994, the Naperville City Council approved an expenditure to cover the cost of pager units for 30 persons annually in the program. There are provisions in place to expand this program as requests for participation are received from residents who meet the City's requirements.

The program became operational in March of 1995. A training meeting was conducted to provide pager unit recipients and future recipients with operational and care instructions for the unit. During this presentation, I also presented a program on weather safety procedures for home and away. In the presentation, the various digital codes to be used were explained, what actions should be taken during a watch and also during a warning. Information packets were given to each recipient that contained information on all aspects of weather safety, localized emergency information and procedures and information booklets from the Family Protection Planning Program. A member of the Naperville Social Services Division will conduct this training program monthly until all eligible residents have received the pager units.

In June of 1995, two new codes were added to the program that identify 9-1-1 problems. One code notifies the pager unit recipient that the 9-1-1 system is out of service and that they must call a special emergency number so that their TTY equipment will be connected directly to the PSAP. The other code informs them that they can again dial 9-1-1 directly for emergency assistance. This added coding was brought about by a telephone company problem, in May, that lasted several hours and again TV and radio announcements did not get to those with hearing impairments.

We feel, after looking at all possible ways to assist special needs people, the digital pager was the most feasible and cost efficient method to use. I have talked with some of the pager unit recipients and they are quite satisfied with the pager units and the information we have supplied them. We are starting

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to receive inquiries from other communities on our program. Hopefully, this program will spread so that our special needs persons will be kept apprised of severe weather conditions as quickly as those who can hear and use the audible systems most communities have in operation.

## REALLY MANAGING DISASTER INFORMATION IN THE EOC

*By*  
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This paper explores the use of digital radio communications as a tool to improve information management to and from the Emergency Operations Center (EOC) under the Incident Command System. Adapting new technologies for information management allows people to make decisions rather than being swamped with data. Readers are cautioned, however, that it is not just the addition of a new piece of equipment or technology that improves the handling of information. Rather, it is the determined and insightful management of the process by which information is handled that produces successful information delivery systems. The use of packet radio, BBS mailboxes, and volunteer resources can be a potent combination to free EOC personnel to make critical decisions during disasters.

### LINKING COMMAND AND COMMUNICATIONS

Command is generally regarded to be the legal authority to control people, places, and things, including incidents and accidents. In emergency management, through the Incident Command System (ICS), command is assumed or delegated by legal authority based on need, jurisdiction, or expertise. The principles of ICS and Unity of Command tend to indicate that command is assumed and relinquished based upon an organized plan. That is not always the case.

As an example, the legally appointed manager of a small city, a rather boisterous man who prided himself on his ability to command under stress, was challenged by his Emergency Services Coordinator to command and support field response during a disaster without the use of telephones. The jurisdiction had conducted numerous orientation and table-top disaster response exercises, but had not held a single functional or full-scale exercise in several years. The City Manager accepted the challenge and immediately implemented a no-notice full-scale drill. As was the custom, and which was in accordance

with the city's Emergency Operations Plan, the City Manager went to the EOC and took his place in "The Ivory Tower."

The City Manager asked that prestaged radios be energized, and that contact be made with each of the primary emergency response agencies and the State Office of Emergency Services. An embarrassed technician revealed that none of the radios (for one reason or another) was functioning, the jurisdiction was no longer authorized to use several of the frequencies listed in the communications plan, and that other than by telephone, there were no communications into or out of the EOC. Exasperated department heads discovered that neither their handheld radios nor their cellular telephones could penetrate the foot-thick concrete walls of the EOC, which was located in a bunker fifteen feet underground.

Regardless what the books say about position and command, the City Manager learned an ego-deflating lesson in practical emergency response. The further away a manager or commander is located from an incident, the more dependent he or she must be on communications technology. With all the elected and appointed officials in the bunker, the Emergency Services Coordinator (a rather irascible fellow who knew that the radios would not function) took over the political support and management of the incident. He knew that in reality, he who controls communications - commands!

We've all played the game of conveying several pieces of information to the first in a long line of people who are then required to verbally relay the information from one to another until the information reaches the last person in line. The information seldom, if ever, arrives intact. Usually, this game is performed in the calm playfulness of a management or communications classroom. Disaster and emergency communications are relayed in a variety of environments; seldom, however, are those environments calm.

The Emergency Operations Center is generally the most under-utilized office space that a jurisdiction possesses. The level of anxiety and frustration normally associated with an EOC can cause a typically calm manager's blood pressure to increase simply by having to enter the inner sanctum. When activated, most Emergency Operations Centers are noisy places with ringing phones, blaring radios, and people shouting to be heard over the din of human and technological cacophony. Increased noise levels in the EOC are evidence of a poorly functioning information management center.

The dominant players in the EOC are managers, department heads, and supervisors--people who know how to support the response and recovery operations for any hazard within the jurisdiction. They are assigned to the EOC because of position, proven coordination skills, special knowledge, experience, and leadership. During an emergency, we turn these highly skilled people into clerks. They answer phones, write memos and reports, communicate by radio so that they can write more memos and more reports--many of which get lost or are not sent where they need to go to get the attention they require.

The most important function of the EOC is to accurately manage (and to act upon) information. The process for managing information is generally the least practiced and most mismanaged function within the EOC. Process management, the management of that step-by-step method by which a segment of an overall objective is accomplished, must be applied to information management if we are to return those people with the most expertise to the role of evaluator and decision-maker.

### **MANAGING THE INFORMATION PROCESS**

If we take a hard look at how we process information in the EOC, we see that we are still using technology that was prevalent in the 1940's. Voice radio and telephone communications are 1940's technology. Because we use fifty year-old technology, we also find that a percentage of information does not ever get to its destination.

The Controller's role at the conclusion of a functional or full-scale exercise is to evaluate all of the information that was passed during the exercise to determine the adequacy of action taken, and to map the information flow from inception to conclusion. Usually at the end of an exercise, everybody leaves, and the real value of the exercise - process management - is forever lost. Meetings to discuss lessons learned are usually scheduled a week or more after the exercise. Many jurisdictions use the lessons learned meeting to pat each other on the back and tell participants how well they did during the exercise. The process by which information was managed in the EOC is long forgotten. As an exercise designer and controller, I have monitored information flow by specially numbering every exciter, and then tracking their progress throughout the EOC. At the conclusion of the exercise, no one should be allowed to leave the EOC until fully debriefed by a Controller.

Full debriefing includes the examination of each exciter (or at a minimum, randomly selected exciters,) messages received, action taken, and mapping the flow of information to other personnel, systems, departments, and agencies.

## **USING TECHNOLOGY AS AN AID TO MANAGE INFORMATION**

Think of yourself as an injured person, one of many, lying on the floor of a school gymnasium. Rescue has been effected. You are no longer in danger of dying as a result of an on-going incident or accident. Without blood, however, your chances for survival are greatly diminished. Evacuation to a hospital is not an option. You will live or die on that gymnasium floor. A Red Cross volunteer obtains your name and social security number for identification, and your blood type, then he or she goes on to the next in a long line of injured victims who need blood. This vital information is turned over to an aging volunteer radio operator who must go through three radio relays to get the information to the City EOC and another relay to the blood bank. How accurate must the information be for you to survive? What if you get another blood type? Remember the game we played in management and communications class? There is a better way.

Using a computer for word processing is now old hat! So why not use the computer and a radio to transfer information from the scene? Why not use the computer and a radio to truly manage information? Police departments effectively use mobile computers to transfer information from the police vehicle to headquarters and even to mainframe computers at the state and federal level. To expedite information in an error-free environment, we as Emergency Managers must continually examine the process by which information is handled.

Properly used, digital radio applies all the best that technology has to offer to ensure accuracy during an emergency. It does not require that telephones be functional. It does not require that someone actually answer a radio or telephone in the EOC. The process of sending, receiving, and managing information can be accomplished through the use of prepositioned electronic mailboxes (similar to those computer Bulletin Board Systems that you can contact by telephone modem) on established radio frequencies. Instead of writing notes when information enters the EOC, personnel can periodically access electronic mailboxes at their convenience, print out information as

needed, maintain an accurate databank of information, and act on the information by prioritized need--all with touch of a computer keyboard.

Packet Radio is generally regarded to be the most efficient digital mode on VHF and UHF frequencies. Several different modes of digital radio are used on High Frequency (HF) bands. A Terminal Node Controller (TNC) is a little black box that converts ASCII (that stuff you never fully understood when you were taking computer classes) into small groups, and sends the information over the air in (packet) bursts. A radio at the receiving end pushes the packets through a TNC which converts the information back into ASCII for your computer. Many TNC's have a chip that can hold the information until you want to retrieve it. Therein lies the secret to managing disaster information in the EOC (instead of allowing information to manage people).

## THE PACKET RADIO SCENARIO

Picture a Mobile Command Post at the scene of a sufficiently serious incident or accident that has required the jurisdiction EOC to be activated. The Incident Commander wants to ensure that he or she has communications with managers in the EOC. Personnel manning the five functions of the ICS system open their laptop computers and simultaneously call their counterparts on different established radio frequencies. Because they want to talk to the person (rather than to leave a message in the electronic mailbox), they call their counterpart by title. At the incident, the five functions of the ICS system can be used as names including: "COMMAND," "OPS," "PLANS," "LOGS," "FINANCE." In the EOC, the names might be, "CONTROL," "EOC-OPS," "EOCPLANS," "EOCLOGS," and "EOCFUNDS." The person at the Direction and Control desk in the EOC notices a drop down window that tells him that the Command Desk in the Mobile Command Post is calling. By a simple keystroke, the two functions are connected and can communicate with each other directly using the computer keyboard.

After disconnecting, the person manning the Command Desk in the Mobile Command Post wants to ensure that he can connect to the electronic mailbox where he will leave messages for his counterpart in the EOC. Using the same frequency, he calls the mailbox "CONTROL-1" where he will leave his first message. Meanwhile, his counterpart in the EOC is being briefed by the EOC Manager. When the briefing is concluded, the person manning

the Direction and Control Desk in the EOC checks the front panel of the TNC. A blinking light informs him that there is unread mail. A keystroke places him in the mailbox. Entering "RM" for Read Mine, he reads the first message.

Messages should be prioritized. I recommend the following (keep it simple) method: 1 = life-threatening, 2 = threat or actual injury to persons, 3 = damage to property, and 4 = other.

After reading the messages, the person manning the Direction and Control desk enters "B" for Bye, and he is out of the mailbox. The message is retained by the TNC until he needs it again. Later, he can download all of the messages onto a 3.5 inch floppy disk for review, preparation of reports, possible litigation, and storage.

There are other scenarios as well. Prepositioned mailboxes throughout the city or county allow for expanded operations and they are especially valuable during multiple incident or multiple jurisdiction operations. Instead of having every Mobile Command Post calling counterparts in the EOC, they could deposit their information in remote mailboxes. The counterpart then could extract data from each incident by entering that jurisdiction's mailbox. Now people in the EOC are managing information, not answering telephones and writing EOC memos. Furthermore, the mailbox programs for each of the five ICS functions could be programmed to automatically forward each message received to the Direction and Control mailbox. The Direction and Control program could date stamp each message and print a full data dump at predetermined intervals. This then becomes an instantaneous chronological display.

## **LEAD-TIME, FINANCING, INSTALLATION, AND OTHER COMMON PROBLEMS**

"We can't even afford computers!" "How do you expect us to get all that other stuff?" "How am I supposed to get five more radio frequencies?" "My jurisdiction doesn't have enough frequencies now!" Also, "how do we train people to use all that equipment?" As Emergency Managers faced with engineering a crisis information system, we have to be very sure the system will work before we purchase equipment. Too, we have to be sure that our

training programs will include three deep training. So what is the cost of all that stuff, anyhow? If we plan well, the cost could be free!

While your jurisdiction may be wrestling with getting on the 800 Megahertz trunked radio system, another group of people, who you may have written off as no longer necessary to your emergency response operation, have been pushing the technology envelope. You may not want to hear this, but your local radio amateurs have been using packet radio for the past fifteen or twenty years. The advent of laptop and notebook computers has now given them, and their packet radio operations, mobility. Just when you thought you could get rid of them, radio amateurs have found another reason why you can't afford to do without them.

You may want to start by practicing during exercises - maybe have just one packet radio functioning in the field, and another in the EOC to get the feel for how it works. Or, you may want to see a demonstration before you risk bringing a new concept of information management into the light of day. Contacting your local amateur radio club will probably get you an invitation to see how packet works. But few radio amateurs have used the mailbox concept for EOC/on-scene emergency communications. They are not generally tuned into the fact that we professionals need a better system for managing information. After all, we're professionals!

### **THE SAN DIEGO EXPERIMENT:**

In San Diego, California, members of the Amateur Radio Emergency Service (ARES), were faced with the problem of providing city-wide packet communications to the downtown headquarters of the American Red Cross. However, communities established in deep inland valleys could not communicate outside their canyon glens without the use of repeaters. Since packet radio is generally used without repeaters, city-wide VHF/UHF communications was impossible to achieve. Early on, however, ARES members decided that the speed of direct communications was a far more valuable asset for emergency communications than was the use of repeaters or nodes (a device built into most TNC's allowing any packet station to be used in a manner similar to that of a repeater).

One valley community in particular seemed to defy all attempts at establishing a packet link to the downtown Red Cross facility. After months of trial and

error testing, ARES radio operators hit upon the novel idea of using the mailboxes of ARES members who lived on mesas high above downtown San Diego. This method of operation gave ARES the communications path they needed without decreasing information flow through congested repeaters and nodes. Their use of mailboxes in lieu of a direct packet communications path was extremely successful. However, they were only concerned with getting information to the EOC. Managing the information, once it arrived, was not in their charter.

As an ARES member and communicator, I began to think about how to use packet mailboxes and BBS mailboxes to manage information flow. Adapting the ARES plan to meet the needs of professional emergency communications was relatively easy. Using the Navy's San Diego Regional Emergency Operations Center and military frequencies, I trained EOC personnel to use the computer to manage information under the Incident Command System format. I found that the use of mailboxes, and the more sophisticated radio Bulletin Board System software, allowed users to extract information by priority. Nothing is so frustrating in the EOC than receiving low priority messages by phone (the inflow of which you can't control) when potential life-threatening reports are on hold because your phone number is busy. The same is true for voice radio; however, inflow can be controlled to a greater extent than can telephone communications if you have a sharp net controller.

## **PACKET SOFTWARE FOR EMERGENCY RESPONSE PROFESSIONALS**

Currently, there is no single professional packet radio software designed specifically for emergency response and EOC operations that I would recommend for use with mailboxes and BBS systems. However, converting existing amateur radio technology for professional use should not be difficult once you get a clear picture how best to use it. The technology is extremely flexible and can be adapted for use in any EOC.

Most communications software programs used with modems can also be used with a TNC. However, those command mode (you must enter the right command to get the TNC to do something) programs can be cumbersome. Training is a nightmare. A host mode program requires the user to remember a minimum of commands because the software programmer has done all the work for you. For VHF and UHF radio communications, I prefer the Kantronics TNC because they have had the foresight to build a mailbox

system that can be expanded by simply replacing a chip. I prefer the Interflex KAGOLD software for ease of operation. Both of these products are designed for amateur radio applications.

## **USING RADIO AMATEURS FOR FIELD/EOC PACKET COMMUNICATIONS**

With the increased reliance on cellular telephones and the improvements that have been made in professional communications hardware, the art of developing and using volunteer amateur radio assets has, in many jurisdictions, been lost. With the perception that government no longer needs radio amateurs, the Hams have shifted their emergency support activities to disaster relief organizations such as the American Red Cross, Salvation Army, and the Volunteer Organizations Active in Disasters (VOAD). This shift has benefited many organizations, especially hospitals. However, during multi-casualty incidents, government has overlooked the value of using the amateur radio assets at the scene. Here's how it could work.

Preassigned amateur radio operators (when called) activate radio stations at affected hospitals. Having prepositioned antennas on hospital roofs significantly reduces set-up time. Prestaged hospital radio stations near the Emergency Room are even more valuable time savers. Quarterly practice sessions ensure both hospital personnel and radio amateurs know their roles and functions. One radio operator (with headphones) operates the scene to field voice net. Another operator works the packet net. Two other radio amateurs wait for the arrival of ambulances and vehicles. When the vehicles arrive, radio amateurs at the hospital entrance record the ambulance or vehicle number, name of the ambulance company, number of victims off-loaded, and the time. This information is provided to the packet radio operator, who will transmit the information to either the EOC if activated, or back to the communications post on-scene.

While radio amateurs activate their hospital emergency communications plan, another group of radio amateurs respond to the incident scene. Upon arrival, they sign in at the staging area where a sign-in desk has been arranged by the Incident Commander and the Logistics Manager. If no sign-in desk has been provided, a radio amateur in a leadership position should take the names of each on-scene radio amateur. He or she will activate a field communications post in a location sufficiently away from the scene as to

ensure safety and to ensure that their transmitters will not interfere with professional systems (usually 75 feet when using transmitters on two meters). One radio operator will activate a voice net with support hospitals and will assume the duties and functions of net control. Another will activate the packet net that includes the EOC (if activated) and the affected hospitals. Other circuits and nets can be activated and controlled as necessary. Meanwhile, trained teams of radio amateurs report to the incident scene Transportation Supervisor and begin recording ambulance or vehicle numbers, the name of the ambulance company (when several companies are involved), the number of victims on-loaded, and the destination of the ambulance or vehicle. This information is provided to the field communications post, where it is transmitted to waiting hospitals. Other trained teams of radio amateurs are assigned to buses on which walking-wounded are transported to area hospitals. They maintain the voice link with the scene and local hospitals.

Instead of passing all of this traffic to the EOC, the information could be placed in a mailbox. As EOC personnel need to know how many victims have been received at which hospitals, the information can be accessed by simply entering the mailbox. Using the cut and paste editor which is built into the TNC software, information can be sorted, printed, and stored in any configuration needed. When incident recovery is concluded, the information can be downloaded onto a 3.5 inch floppy disk for future use. No phone calls. No radios to be answered.

### **THE BOTTOM LINE**

Just as police, fire, and medical personnel have specific tools with which to respond to a disaster, so do emergency managers. The speed and accuracy with which information is handled has a direct impact on the number lives saved during a disaster. We must improve information delivery systems by becoming crisis information engineers and, more importantly, process managers. We cannot continue to rely solely on 1940's technology as we prepare to handle 21st Century disasters. We must integrate current technology and existing resources to be cost-effective managers in a world of reduced budgets and increasing demand for performance.

## AN EMERGENCY SUPPORT CENTER FOR ESF-8

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The evolution of operational emergency management organization into the Emergency Support Function (ESF) structure has had a positive influence on how we do business. The 12 ESFs have brought agencies and people together into working teams. This structure has also involved agencies that previously have not been active in the disaster response process.

However, at times, this can seem to be a mixed blessing. The lead ESF agency now has to assume responsibility for energizing and bringing to the table a rather varied collection of resources. For example, in Virginia ESF-8 (Health and Medical) includes:

- Department of Health - as lead. This includes at least three major components, the Offices of the Chief Medical Examiner, Emergency Medical Services, and Water Programs.
- Department of Agriculture and Consumer Affairs - the State Veterinarian.
- Department of Emergency Services.
- Department of Environmental Quality.
- Department of General Services.
- Department of Information Technology.
- Department of Mental Health, Mental Retardation and Substance Abuse Services.
- Department of Military Affairs.
- Department of Social Services.
- Department of Transportation.
- American National Red Cross.

As important as the official players are the unofficial ones we actually make a great deal of use of, including:

Department of Health Professions.

Virginia Association of Governmental Emergency Medical Services Administrators.

Virginia Association of Volunteer Rescue Squads.

Virginia Funeral Directors Association.

Virginia Hospital Association.

Virginia Veterinary Medical Association.

8 Emergency Medical Services Regional Councils.

As a result 20 plus state players are represented are represented by a single person sitting at the ESF-8 desk in the Commonwealth of Virginia's Emergency Operations Center (VAEOC). We are limited to one person due to floorspace constraints. This individual has to identify problems, assess local requests for assistance, find and assign resources, monitor results, maintain the Emergency Information System (EIS) database, and get information out to all the ESF players. He or she has a single telephone, very limited access to fax, and no email access. In a major event, this just will not work.

In 1994 the Office of Emergency Medical Services (the designated ESF-8 coordinator) identified the need for more space and capability. In this process we started to develop a capability we call the Emergency Support Center (we already have too many EOCs - Virginia EOC, State Area Command EOC, Department of Transportation EOC, etc.). The first step was to develop a concept of operations for this facility. We started with some basic desires:

- (1) To let the EOC representative concentrate on addressing policy, strategy, and mission tasking.
- (2) To take routine coordination and resource status and marshaling functions off the EOC representative's back.
- (3) And to make information dissemination rapid and current (we routinely put out information several times a day in hard copy to around 40 agencies).

So far, we have not had to test the strategy/policy and resource functions. However, we have used the ESC's capability to broadcast email and faxes very effectively. Previously agencies were on their own in information

gathering - after action questionnaires show we are now meeting real needs up to the level of our Cabinet Secretary.

We initially started with the assumption we needed to staff the ESC 24 hours a day, whenever the VAEOC is operational. Our experience in two recent declared states of emergency has caused us to modify this approach in two ways:

The actual operational flow of tasks and information requests is from about 0500 to 2300. We are currently staffing on this basis.

And there is a real need for information flow before the EOC is fully staffed. We actually start the ESC process as soon as there is a potential threat.

In the evolution of this function, we looked at the available facilities in our office space. Although floor space was available, it was not configured as operations management space. As a result, we identified floor space in a storage area and built a room specifically for the ESC. While we are not yet to the point of furnishing the room due to pending staff moves, our requirements may be of interest:

- ... adequate work space for 5 or 6 persons for a maximum intensity event,
- ... including adequate work station surface - nominally 3 feet by 5 feet per person.
- ... two computers, one dedicated to communications (email, fax, paging, and commercial weather data) and one to EIS.
- ... two phones (one with a mutable speaker).
- ... cable television feed.
- ... NOAA weather radio.
- ... local emergency medical service VHF radio and antenna leads and an operating position for amateur radio, including packet.
- ... state map and a map display board that can be used for area and inundation maps.
- ... resource and situation visual status boards.
- ... storage space for forms, response records, and plan and resource library.
- ... emergency lighting.

... emergency generator.

By locating in our normal administrative office building, we gain a number of important benefits:

- ... the facility is known to the operators and to other players - it is easy to find with easy access from two Interstates. It is close to restaurants and motels.
- ... plenty of parking.
- ... normal office equipment support, a full local area computer network with multiple printers, three copiers, including a high speed, high volume machine, multiple phones, etc.
- ... kitchen.
- ... two sets of bathrooms.
- ... easy access to a large stock of office supplies.
- ... expansion space, including large and small conference rooms.
- ... easy access to records of some 670 emergency medical services agencies, with 2700 plus vehicles, and 40,000 providers, allowing rapid verification of capabilities and credentials.

Our ESF-8 Emergency Support Center continues to evolve in both operational concept and facilities. Our current challenge is to complete the package. We have identified professional staff, who normally have other management and administrative duties, to serve as staff for the ESC and have started holding monthly training sessions. We are rotating these managers through the VAEOC in actual disasters and in exercises to give them operational experience.

A second key element is procedures. We have focussed on developing a series of standard operating procedures (SOP) for the ESC and to give our VAEOC representative a ready reference. Our philosophy is to develop a series of one page, single topic SOPs. This format lets users rapidly find appropriate procedures and all standard reference data. In addition, we have developed (and try to keep up to date) a statewide ESF-8 emergency telephone and fax directory.

A third component is a fly-away kit. All procedures, a copy of key reference plans, telephone directories, mini-status boards, and a lap top computer loaded with the current EIS database are packaged as a kit. This

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allows us to deploy a team to any desired location to support emergency operations if needed.

The physical facility has actually proved to be the least vital component in building this capability. In the last hurricane response we operated effectively from one manager's office. Therefore, we are taking the time needed to select and obtain the right furniture for the job and to get the right type of display boards. Our objective is to have the complete facility up and running for next year's hurricane season.

Our experience is that the ESC concept works and fulfills significant operational needs. It requires significant discipline on the part of both the EOC and ESC to ensure the information and tasking flow works. However, it increases the ability to manage resources and disseminate and collect information by a very significant amount.

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## INCIDENT COMMAND SYSTEMS

### A Perspective on Strategic and Tactical Applications

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#### ABSTRACT

The Incident Command System (ICS), originally developed as a result of large forest fires in Southern California in 1970, served as a basis for the development and application of the all hazards approach to emergency management/response planning is presented in this paper. The ICS has been adapted to apply to the industrial setting, where the affected entities' management structure and response structure have seldom been integrated into a cohesive organization. The industrial setting evokes a need to provide an Enhanced Incident Command System (EICS), addressing expanded emergency management/response functions and roles associated with industrial incidents. EICS is a flexible system designed to facilitate an integrated response to a variety of postulated incidents. EICS allows for a full range of activities, from planning through response, mitigation and recovery activities.

Traditionally, the focus has been on the Response Activities. This focus is changing. Management roles are being identified. Public demand for management accountability has increased. Personnel responsible for response are demanding more management interface and support. Management is impelled to provide more support and play an integral role in the overall response to an incident.

Although each organization is unique, the all hazards approach will generally consist of the following key elements:

- All Hazards Emergency Management Plan
- Emergency Plan Implementing Procedures
- Emergency Management/Response Organization (Enhanced Incident Command System)
- Emergency Management/Response Training and Retraining
- Emergency Management/Response Facilities and Equipment
- Drills and Exercises
- Coordination with Off-Site Emergency Plans
- Evacuation Time Studies
- Hazards Assessment and Analysis

The remainder of this paper discusses the application of tactical and strategic Incident Command Systems in the industrial setting.

## INTRODUCTION

Adopting an Incident Command System (ICS) for your company is a decision that should be carefully considered. While there is a wealth of literature available today describing incident command system structure and employment, the industrial sector needs to carefully analyze and choose how it will structure its incident command system. Even more important is how this structure and its functions are communicated to external audiences.

It has become clear in my experience that two people using the same incident command system terminology can be talking about two totally different applications. Each will be correct in their meaning and application. However, each will be 180° from each other as they attempt to apply their version or understanding of incident command. In order to identify the differences and hopefully bring the two applications to some common ground, I will refer to tactical and strategic applications of incident command system concepts. Tactical incident command and strategic incident command both embrace the central tenants of the incident command system as prescribed by National Inter-Agency Incident Management System (NIIMS). That is:

Common terminology  
Modular organization

- Integrated communications
- Unified command structure
- Consolidated action plans
- Manageable span of control
- Predesignated incident facilities
- Comprehensive resource management

What is needed when applying the Incident Command System to the industrial setting is:

- Template for doing things right
- Organization and Focus on strategic, as well as, tactical applications
- Optimization of time management in employment of the ICS
- Creating superior information flow
- Creating a management structure that can manage upward and downward
- Maximization of resource throughput
- Creating a seamless vertical and horizontal structure that enhances communications throughout the system

Let's look at the initial response to an incident:

A problem is discovered. An initial response is undertaken. Initially all functions of the ICS system must be performed by this person. Detection, Initial Response, Notification/Communication, Direction and Control all must be performed by the initial responder - they are the entire ICS.

The goal, therefore, of initial response should be to maximize the resources brought to bear on the problem, thereby minimizing the time it takes to delegate the responsibilities for performing various functions within the ICS.

For our purposes, the tactical application of incident command system terminology and functions is defined, based, and focused on the proven fireground tactics applied by most, if not all, fire fighting agencies and industrial fire brigades. Tactical incident command generally will focus on operations of short duration. Please note, short duration as used herein, does not necessarily equate to a time value, rather it relates more to a perception of the extent of the incident. Few would argue that the Exxon Valdez spill was a incident of short duration. Yet, even today Exxon is reacting to the

crisis aspects of the incident. I will provide more detail on this later. Based on the focus of short duration, we can subdivide tactical incident command into the following components:

- Command - Consisting of the Incident Commander and staff. This may include Planning, Operations, Logistics and Finance.
- Sectors - Consisting of sections, branches, divisions, groups, units.
- Staging - Consisting of uncommitted resources and support.
- Safety - Consisting of a Safety Officer responsible for incident scene safety operations.
- Medical - Consisting of emergency medical services.
- Suppression - Consisting of the response portion of the system, focused on response and mitigation operations.

The strategic application of incident command system terminology and functions is defined based and focused not on fire tactics, but on application of incident command system methodology focusing on a crisis situation. Again, using the Exxon Valdez as an example, the crisis portion of the incident was of longer duration (some might offer that Exxon is still in the crisis phase today) and, involved a broader spectrum of resources. That is, a combination of management and response functions applied to longer term operations versus the short duration situations where tactical incident command is focused. Strategic incident command can be subdivided into the following components:

- Command - Generally a Multi-Agency unified command structure consisting of management, external agency representatives and a variety of support personnel.
- Planning - Consisting of personnel focused on longer term issues, such as, natural resource damage assessment, waste management and response strategy development, company image and resource management.

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- Operations - Consisting of field operations encompassing the tactical incident command application and the necessity to focus on greater span of control concerns.
- Logistics - Consisting of specialists in purchasing, administration, communications, documentation, transportation, security and human resource services.
- Finance - Consisting of specialists in accounting, claims administration and financial management services.

Ten factors need to be considered when determining the application of strategic or tactical incident command systems. These are:

Determine the Planning Premises:

The basis upon which you will base your decision to employ incident command generally will center around, but should not be limited to:

- Hazard Analysis
- Resource Availability (internal/external)
- Geographic issues
- Environmental, Health and Safety impacts

Select a Time Horizon:

Once the planning premises have been established, you need to select a time horizon. This generally will encompass the following:

- Planning materials completion
- Crisis/Emergency Organization training
- Determining resource accessibility
- Ability to implement the plan in a timely manner

Take a Hard Look at the Past:

As this point indicates, you should carefully review past events and analyze how the response was handled. There's no sense in preparing an elaborate plan or adopting an incident command system that cannot be implemented.

State Assumptions:

Based on the above analyses of hazards, past event responses, and selected time horizons, you need to develop a list of assumptions and plan for each one.

Determine Key Variables:

As the above items are being accomplished, you will want to determine all of the variables that could impact the incident command system structure. This should include as many non-operational items as possible.

Determine Plausible Ranges for the Variables:

We can all develop a list of worst case scenarios. The challenge will be to develop a plausible range of most probable case scenarios and plan for them.

Build Scenarios:

Once the range of variables is determined, build working scenarios for each variable.

Develop Strategies for Each Scenario:

The strategies you develop can be refined into implementing procedures for the plan and for the members of the Multi-Agency management/response team to use during an incident.

Check Effectiveness for Each Strategy in Each Scenario:

In other words, train, drill, exercise - validate the plan and your concept of operations.

Select and Develop an Optimum Response Strategy:

Consistency of implementation is a key in overcoming the effects of an incident in a timely manner. You must be able to transition from normal operations to emergency operations to recovery operations in a non-disruptive well connected manner.

### **THE DECISION: TACTICAL, STRATEGIC OR COMBINED**

The decision to choose a tactical, strategic or combined incident command system approach really is not a difficult one. This is in part due to the various environmental, safety and health regulatory compliance requirements promulgated by federal, state and local authorities. You may also find that by conducting a comprehensive hazard analysis, your decision on an incident command system. In fact, once you determine the spectrum of events you may be faced with, the decision to opt for a combination of strategic/tactical incident command.

I have discussed this application in previous papers and have applied it with various clients. Termed the Enhanced Incident Command System (EICS), it combines manage functions and response functions into an organized structure that embraces the tenants of the incident command system.

It is important to understand the application, as the industrial setting and government/community setting differ dramatically from the setting found in fire/hazmat response organizations. It is also important to note that the combined system allows for the same flexibility as the NIIMS based system.

### **INCIDENT ASSESSMENT: A KEY FACTOR**

Initial assessment of an incident is critical. Properly assessing the potential magnitude of an incident provides a basis for implementation of the EICS. Also of paramount importance, is the communication of the assessment to the

involved parties in a manner that is easily understood and acted upon in a timely way. It is, therefore, imperative to train personnel, who are initial responders, to properly assess the incident. This means that a broader preview of potential impacts is needed. One can no longer opt for a narrowly focused assessment based upon an analysis of limited factors.

Seven key issues/factors have come to the forefront as essential to determining the full impact of an incident. In order to effectively implement a coordinated response, you must consider these factors. They are:

- Safety - Consisting of injury, fatality and protective action considerations.
- Environmental - Consisting of establishing and assessing potential impacts to the environment (air, land, water).
- Operational - Consisting of assessing operational considerations, such as, facility status, continuity of operations, reentry and recovery issues.
- Geographic - Consisting of assessing population and infrastructure issues, such as, population groups, modes of transportation and regional geography.
- Commodity - Consisting of identification of the material involved, quantity, toxicity and other characteristics
- Meteorological - Consisting of assessing short term and long term conditions.
- Response Capability - Consisting of an assessment of management/response capabilities, including human resources and equipment resources. This category also should consist of evaluating response strategies.

Personnel need to embrace this broader assessment perspective in order to effectively implement an effective response and manage the impact of an

incident. These seven items can be applied in a multi-tiered classification system to address four levels:

- Unusual Event.
- Alert.
- Site Area Emergency.
- General Emergency.

### **MANAGEMENT/RESPONSE: COMMUNICATING EFFECTIVENESS**

The way we have employed the incident command system has been in the traditional fire/hazmat manner. That is, a tactical approach based on fire ground command and control techniques. While extremely effective for the vast majority of incidents occurring within a facility, this approach is limited when employed as the primary response system for a large scale incident requiring a Multi-Agency response or a crisis situation.

These types of incidents require that we employ a strategic incident command system. This system, referred to as the Enhanced Incident Command System (EICS) is structured along the recognized incident command system structure as previously discussed herein.

The EICS combines the tactical and strategic approach into an effective, highly flexible and responsive structure required to deal with a long term event, such as an oil spill.

The organizational structure needed to employ the EICS consists of management and response personnel, combined to effectively address management/response functions. The Emergency Management/Response Organization is critical to the successful mitigation of any large scale, long term, high impact incident. This includes not only oil spills but a variety of incidents and situations in which a purely tactical incident command system approach is either not practical, applicable or adequate to handle the situation at hand.

### **CONCLUSION**

Management, at all levels, is never put more strongly to the test than in a crisis situation. The objectives are immediate and so are the results. What

you and those around you do or don't do will have long lasting implications. That is why it is essential to develop an incident command system flexible enough to embrace the tactical, as well as, the strategic elements necessary for effective response.

The objectives for establishing a flexible incident command system format (Enhanced Incident Command) include:

- Effective coordination of activities among the organizations having a role.
- Early warning and clear instructions to the general public in the affected area if an incident occurs.
- Continued assessment of actual or potential consequences both onsite and offsite.
- Seamless structure (horizontal and vertical) within the Multi-Agency team.

In almost every instance of successful response to a crisis, management and response activities consisting of sound operating execution coupled with superior communication predominate. Tactical incident command is essential. It is the one that saves lives, property and other assets. The ability to coordinate the variety of skills necessary to mitigate a crisis requires a strategic incident command system. The strategic incident command system is no less important. It's the one that saves the continuity of the business operation and the community in which the business operates.

## QUALITATIVE VALIDATION OF EMERGENCY RESPONSE PROCEDURES

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This manuscript has been authorized by a contractor of the U.S. Government under contract number DE-AC08-94NV11432.

### **PREFACE**

Emergency managers have come to recognize that there is a quintessential style of emergency response procedure development that must be guarded against. This style allows the definition of objectives to be decided upon apart from the problems posed by their implementation, and then permits the brushing aside of such obstacles as mere tactical problems to be dealt with once goals have been clarified. If permitted to pervade emergency management policy-making, this can-do spirit will grow steadily more confused and complex each step of the way. Instead of plowing bravely ahead in the confident belief that a formidable array of talent and resources will overcome any obstacle, intuitive managers periodically pause and take inventory of accumulated liabilities and difficulties associated with their emergency response procedures.

This work suggests use of the extreme value analysis principle in conjunction with time/loss analysis as the inventory tool to gauge the effectiveness of procedures in the response phase, or amelioration process, of an incident.

## INTRODUCTION

Every authority having jurisdiction<sup>1</sup> requires that emergency response procedures be reviewed on some periodic basis. Such procedures are usually reviewed after an incident involving a major loss. To be sure, this is a necessary and sound management practice. However, such reviews are expensive in both time and money and sometimes are of questionable objective benefit.

Procedure review requirements are generally very vague; i.e., "This procedure will be reviewed annually and reissued with a new signature date whether revised or not," or "In addition to an annual review, this procedure shall receive a documented review if the procedure fails during an emergency." Fails is of course not defined, and objective review criteria are not identified.

If resources of the organization charged with the periodic review are already being taxed, such a requirement may result in only a cursory review and reissue of the procedure to make the dates match the requirements. As such, the review would be nothing more than a meaningless administrative action.

In the second instance where the review is initiated because the procedure was perceived to have failed, there is an implied threat. Possible finger pointing or efforts to avoid a liability issue will surely limit an objective effort.

As the operations of emergency response organizations become more varied and budgets become tighter, there is a need for objective analytical techniques to assist the authorities having jurisdiction to most effectively allocate limited personnel and material resources.

Extreme value analysis is a technique originally developed by E. J. Gumbel to predict the frequency of natural events. Initial uses of the process included predictions of river flows, highest winds, etc. In addition, extreme value analysis was an effective tool to determine the adequacy of dams and flood control efforts and wind resistance requirements of tall buildings.

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<sup>1</sup> As used in this document, "authority having jurisdiction" is the organization, office, or individual responsible for establishing the acceptable level of risk within the constraints of codes, standards, and regulations, and approving emergency response procedures.

This technique is also recognized as a tool for accident investigators to determine event causal factors. Depending upon the type of extreme value graph paper used (linear or logarithmic y-axis), the evaluator can determine if the prevention of large losses are under control.

Time/loss analysis (T/LA) is also an analytical tool of the accident investigator. The principle of T/LA enables one to determine the loss incurred after a response has been activated. Essentially, T/LA addresses the level of loss after intervenors (emergency responders) come into play. We eliminate from the total loss of an incident that upstream portion which was sustained prior to emergency responder intervention, and include in our extreme value analysis only that portion of the loss upon which emergency responders had a direct impact.

## **PURPOSE**

The purpose of this paper is to discuss the use of extreme value plotting in conjunction with T/LA as a quantitative determinant of the effectiveness of response procedures which are, in essence, the heart of a modern-day emergency response.

Extreme value plotting of incident loss values developed through T/LA will allow the reviewer(s) of emergency response procedures to (a) better understand what range and frequency of losses they should expect and (b) determine what further evaluation is called for in specific areas of the loss protection program under review. Application of these analytical tools to the procedure review effort will respond to the nagging question of objectivity and the very real concern of whether a procedure review/revision materially contributes to a strengthened procedure or is just a paper exercise which produces the same set of instructions with a new signature date.

## **EXTREME VALUE ANALYSIS**

As an analytical tool for evaluating the effectiveness of emergency response procedures, the use of extreme value analysis assumes that the authority having jurisdiction has established an acceptable level of risk within the constraints of codes, standards, and regulations. Within this context, extreme value analysis can be used to predict the frequency of maximum cost incidents.

Extreme value plotting is a predictive and analytical method which uses a small quantity of readily available data and is self-testing as to applicability. Extreme value plotting allows us to estimate the average time between recurrences (return period of an event with a given value such as a \$1,000,000 fire loss). For instance, if the return period for a \$1,000,000 fire-loss incident is two years, there is a 50-50 chance that a fire loss of \$1,000,000 or more will occur during the next two years.

G. J. Briscoe provides a very clear discussion of the concept of extreme value analysis which is understandable by the nonstatistician. That approach is used here to give the reader a better grasp of the basic concept.

The maximum events taken from each of a large number of time intervals form a special frequency-severity relationship which is somewhat similar to the log-normal distribution pattern. The scale on the extreme value graph paper converts this skewed, bell-shaped curve to a straight line on the x-axis. Also on the x-axis opposite the frequency (cumulative probability) scale, is a scale which converts the frequency to return periods. Return periods are in the same time units as the time intervals from which the maximum events were taken. The y-axis represents the severity or cost. The average time between events (return period) can be read directly from the graph paper for maximum events of any given severity or cost. The value lies in the ability to extrapolate or extend the straight line to include longer time periods, and thus predict the occurrence of very large loss incidents.

There are two kinds of extreme value graph paper. On one paper, the severity or cost scale is linear; on the other, the severity or cost scale is logarithmic (see Figures 1 and 2). The severity or cost scale is depicted two different ways since the cost increases linearly with respect to the cumulative probability scale for events resulting from multiple independent causes. For those events resulting from multiple interdependent causes, the cost increases exponentially or logarithmically. This indicates a possibility of a common cause, such as some factor in the management systems, leading to the several causes of the large loss incident.

The extreme value equation is an empirical derivation of the frequency and severity of maximum events represented on the upper tail of the log-normal curve. The basic difference between extreme value and log-normal analysis

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is that all events are used in log-normal analysis, but only the maximum events are used in extreme value analysis.

Data points are calculated as follows:

1. Select a time increment or period.
2. Select the maximum loss incident for each time period, and rank the selected events in order of increasing cost.
3. Select a vertical scale which will permit extrapolation to desired

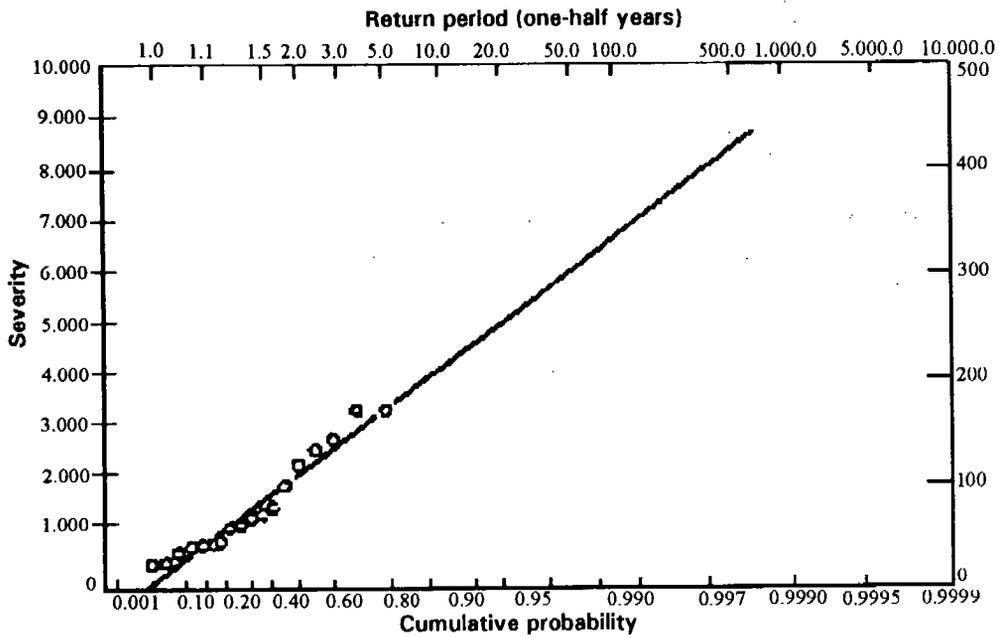


Figure 1. Loss data plotted on linear scale extreme value paper. consequence levels (generally two or three times maximum value).

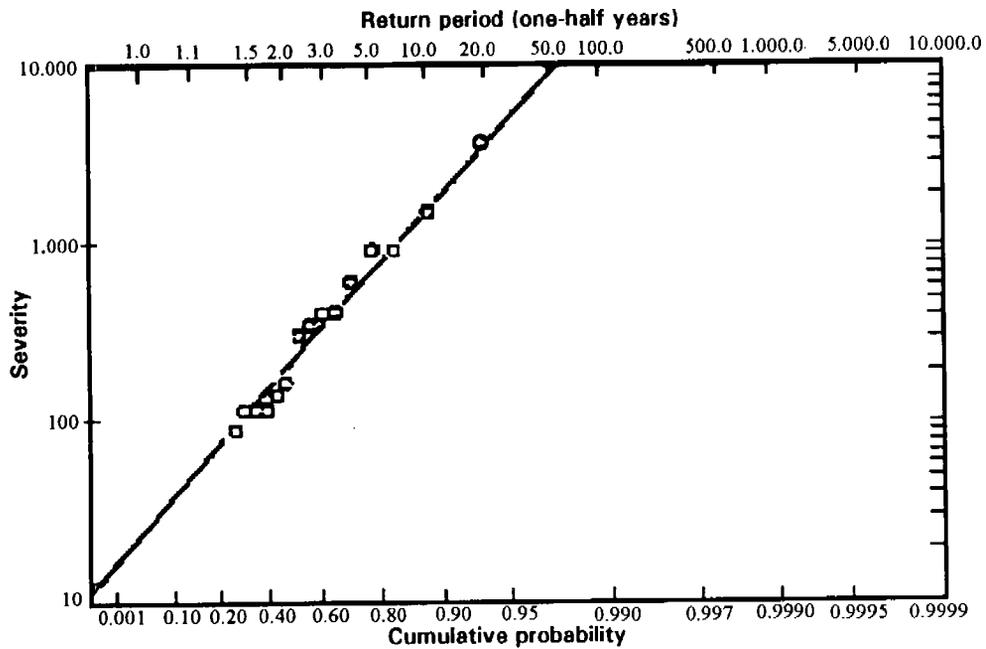


Figure 2. Loss data plotted on logarithmic scale extreme value paper.

4. Calculate the cumulative probability by dividing  $N_i$  by  $N + 1$ .
5. Plot the data on both logarithmic and linear extreme value papers, and use the paper that gives the best straight-line fit. If a straight-line relationship does not occur in either case, some type of change has likely occurred; analyze the data for homogeneity.

If the plot approximates a straight line on the graph paper with a linear cost scale, the losses are likely to be independent, and the prevention of extremely large losses is well under control. If the plot approximates a straight line on the graph paper with a logarithmic cost scale, the multiple causes can usually be traced back to a common source, or one cause may influence another. Since a strong systems control program would eliminate common causes, review of the control system may be in order. This is especially true if the slope of the logarithmic curve is steep so that the return period for a large loss is short.

If only a small portion of the more recent data fit the straight-line distribution and examination of the data reveals that the dollar value of property protected, as well as the losses, grew at a high rate during the period under study, this is an indication that the situation changed rapidly. This suggests that loss ratios (cents loss per dollar amount of property protected) be used on the y-axis. If the loss ratio figures are plotted on extreme value paper, it may be seen that the required linear relationship is achieved and the expected most probable maximum loss ratios, over any period of observation, may be obtained from the return period scale on the top of the extreme value paper.

### **TIME/LOSS ANALYSIS**

The concept of T/LA isolates that portion of the total cost of an incident which is directly impacted by emergency responders. T/LA suggests that the only losses that can be controlled after arrival of responders are those which have not yet occurred. Intervention should change the course of events and natural outcome of an incident. Ideally, intervention will reduce the losses that would have occurred naturally, and each intervenor will contribute some net reduction to the loss.

T/LA further suggests that during an emergency, each intervenor's goal should be to reduce the losses or time duration of the emergency. If intervenors

do not change the natural course of events, or if they increase the net losses, intervention practices or assumptions, safeguards, and procedures must be re-examined to find ways to improve the operation's effectiveness and emergency outcomes.

### APPLICATION

To use the extreme value T/LA concept as an analytical tool in the emergency response procedure review process, loss data for the organization(s) operating under the provisions of the procedures being reviewed must first be normalized. Cost must be adjusted to reflect only that amount of loss incurred after the responders have arrived.

For example, a natural gas fired furnace in a commercial building malfunctions and an explosion occurs. When responders arrive on the scene, the building is fully involved, but the fire has not yet extended to adjacent exposed structures. If responders are successful and contain the fire to the involved building, the incremental loss incurred after arrival should be within expected limits. However, if exposures become involved after responders arrive on the scene and begin suppression operations, losses will increase and may be beyond the acceptable limits.

The following is an actual application of extreme value analysis to the fire-loss experience of a rural jurisdiction, adjusted by use of T/LA, to reflect only that portion of the loss incurred after responders arrived on the scene. Table 1 reflects the greatest loss in each year under study.

**Table 1. Maximum loss in T/LA generated data of each year.  
1980 - 1984**

YEAR	LOST
1980	\$20,000
1981	2,053
1982	4,625
1983	29,600
1984	95,089

The most attractive aspect of T/LA is that only the largest loss in each of the five years is necessary for the required extreme value plot.

Table 2 depicts the cumulative probability of each event.

**Table 2. Cumulative probability using T/LA generated data.**

COST	$N_i$	$(N_i/N + 1) \times 100$
\$2,053.00	1	16.7
\$4,625.00	2	33.3
\$20,000.00	3	50.0
\$29,600.00	4	66.7
\$95,089.00	5	83.3

An extreme value plot of this data on logarithmic paper (see Figure 3) approximates a straight line. As noted earlier, this straight-line plot indicates that the fire loss experience was the result of multiple causes which can usually be traced back to a common control source, or one cause influencing another. Applicable response procedures are probably inadequate, and we can conclude that a review of those procedures should be conducted.

Extreme value analysis alone does not indicate if the cause is upstream to the incident (facility design, method of operation, etc.) or in the response phase of the incident. Had the data for this plot not been arrived at through T/LA, it would have represented the total loss at each plot point, and we would only know that there is the possibility of a common cause. However, since the data represents the loss incurred after responders had arrived on the scene, we can objectively conclude that a review of the applicable response procedures is in order.

The qualitative emergency response procedure validation technique is also useful for evaluating emergency response procedures involving multiple disciplines; e.g., a response procedure providing for a fire and medical

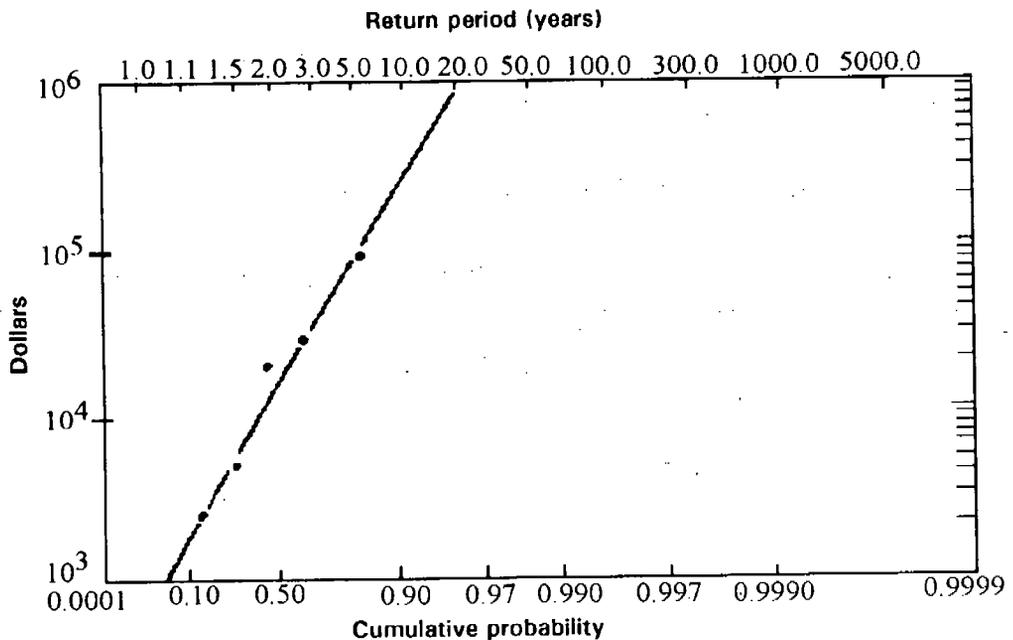


Figure 3. Logarithmic extreme value plot of fire loss.

response. Historical data for losses experienced for that particular response would be gathered and tabulated as either fire loss or medical loss. On separate graph papers, the highest loss would be plotted against the computed cumulative probability as discussed above.

### CONCLUSION

Frequency-severity distributions as an analytical evaluation tool require use of all data generated by the entity being studied ranging from low-frequency, severe-consequence to high-frequency, low-consequence levels. Since these data may be distributed in a number of ways, sophisticated statistical analysis may be required. This leads to a number of difficulties involved in processing large quantities of data; a lack of low severity data as a result of reporting thresholds; the fact that the great mass of the data will ordinarily lie in the low severity range; and the care that must be exercised in selecting, using, and testing statistical distribution functions in order to avoid invalid conclusions.

Extreme value plotting is a predictive and analytical method which uses a small quantity of readily available data and is self-testing as to applicability. The use of extreme value plotting in conjunction with T/LA as an analytical tool can greatly increase the objectivity of answers to post-incident questions such as the following:

- Was there adequate emergency action to prevent a second incident from occurring?
- Were emergency response procedures executed adequately?
- Were emergency response procedures adequately designed?

Obviously, an application of this technique in the pre-incident review can work to validate procedures based upon historical data and the acceptable level of risk within the constraints of codes, standards, and regulations established by the authority having jurisdiction. Using this technique also provides qualitative, objective material for inclusion in the procedure review documentation package.

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## IV. RECOVERY

### WHERE DID EVERYONE GO?

*By*

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On a sweltering July 5, 1994 at 4:40 p.m., a powerful tornado with 220 mph winds roared through the rural Town of Cooperstown in northwestern Manitowoc County, Wisconsin. Witnesses reported that the tornado dropped out of the sky without warning, leaving a three mile swath of destruction. Thankfully no one was seriously injured and there were no deaths. However, the storm completely changed the lives of 32 families as well as the community.

An estimated \$1.9 million in damage occurred to homes, crops, farm buildings, equipment, automobiles, livestock, pets, landscaping, tree lots, utilities, and road systems. The heaviest damage in this predominantly agricultural community occurred on Carol Lane, a small residential subdivision on a cul-de-sac, where three homes were completely destroyed and two others were severely damaged. No estimates of damage could be placed on the emotional trauma suffered by the victims of the tornado!

Volunteer firefighters were the first to notify the Manitowoc County Sheriff's Dispatch Center that the tornado had struck. The twister wasn't tracked by National Weather Service radar so warnings could not be issued. Within minutes of touchdown, the Maribel Fire Department and Viking Ambulance Service personnel raced to the scene to find out whether people were injured or needed help.

For five days following the tornado, the affected area teemed with people from governmental and volunteer response groups. The Emergency Government Office moved the County's mobile command vehicle into the area to a location familiar to Cooperstown residents. The Town Chairman, his Supervisor and Town Constable coordinated response activities from the

vehicle; dazed tornado victims came to the vehicle when they needed help or additional information.

The American Red Cross and Salvation Army played a major role in seeing to it that emergency workers and victims were continuously fortified with food and beverages, particularly fresh drinking water. Citizen volunteers, as well as neighbors and friends of tornado victims, worked tirelessly removing debris and gathering scattered possessions. The media maintained a constant presence throughout the first five days of the recovery phase telling the story over and over again to Wisconsin readers, listeners, and viewers. On July 10 it was obvious governmental and volunteer emergency responders had done as much as they could from the scene to return the area to a state of normalcy. Now the painstaking task began that only the victims could handle...negotiating with insurance companies, making decisions on whether to repair or rebuild their homes and support buildings, how to replace vehicles and household contents. So, the volunteers said good-bye, emergency responders resumed regular duties, the media packed their equipment and left, and the command post was put back in storage in the City of Manitowoc. With a sigh of relief and some regret, several of the tornado survivors asked, "Where did everyone go?"

Frequently, those of us who assist people who have experienced a significant tragedy mistakenly assume life will automatically return to normal for them once the physical signs of the incident have been removed. The assumption isn't usually consciously made by emergency management, it's a reflex...the result of incomplete recovery planning, inexperience, limited staff and budgets or a multitude of other reasons. Ironically, when emergency workers leave the scene of an intensive response where that erroneous assumption was made, the worker often leaves with feelings of frustration and inadequacy, often not readily pinpointed.

The Manitowoc County emergency management team chose to not assume life would automatically return to normal for the Cooperstown tornado victims just because recovery operations were underway. An intervention plan incorporating some interesting techniques was put into motion by a team of county professionals to help these people cope with the disruption in their lives. Techniques included: a community dinner one week after the tornado, unscheduled personal visits by social workers, a newsletter, scheduled discussion or support groups, a Labor Day dinner, a commercially produced

video of the Cooperstown tornado, a community debris picking day three months after the incident, and others. The effectiveness of each technique was evaluated by the survivors in a written survey six months following the tornado as part of the closure process.

One week after the tornado touchdown, a community dinner was arranged at an area restaurant for the survivors and emergency workers. The expenses for the dinner were paid for by a local bank. For many of the tornado victims it was the first time they had taken a break from the hard work of rebuilding their lives. Some had no idea until that evening that neighbors too had endured heavy losses. Many were still in shock, uncertain about the future and what would happen next. Most used the dinner as an opportunity to say thank you to those who had helped them in their darkest hour. Overall, physically being together was helpful to everyone in attendance.

Phase 2 of the recovery operation was unveiled for the tornado victims by the Emergency Management Director following the dinner. The survivors were introduced to the two social workers from the Manitowoc County Human Services Department who would be available as a resource to them for the next six months to:

- Help restore a sense of community.
- Help those affected return to normalcy.
- Help the victims stay informed on ways to find solutions to their problems.
- Help them find the means to express their frustrations as the recovery process proceeded so their feelings didn't freeze.

Although the survivors weren't told, the social workers would also watch for problems that traditionally emerge following an emergency of this magnitude and be prepared to suggest referrals.

The most important support activity government offered the tornado survivors was having the social workers visit them one-on-one throughout the six months following the tornado. These visits were intentionally informal and unscheduled. The purpose of the visits was to give emotional support, provide information, and to assess survivor needs. Initially the visits were weekly - more often if thought needed. Since they were unscheduled and

informal in style, victims had an opportunity to process their grief, search for meaning, and put their lives in balance. Surveys indicated that social worker visits were the most valuable assistance given to the victims - a higher ranking than was given to support received from family and friends.

The newsletter entitled Update Time was published by the social workers and mailed to the tornado survivors every three to four weeks. It contained information about people, suggestions to expedite insurance problems, mental health tips on how to handle stress and grief, announcements of upcoming events or meetings, and other valuable data. Surveys indicated that the newsletter was considered by the victims as a valuable tool in their recovery process. For staff, it was an excellent way to stay connected with all survivors.

Six support or discussion group sessions were held following the tornado. The Let's Talk sessions were held monthly in the Cooperstown Town Hall. Topics discussed included: what's happening in the neighborhood?, caring for children and self after a storm, impact of the storm on your income taxes, how have you changed?, getting ready for the holidays, and other subjects suggested by attendees. One of the social workers always attended the sessions acting as a facilitator. Surveys indicated the Let's Talk sessions were ranked as the third most valuable resource made available to the tornado survivors.

A video to tell the story was produced by a local cable TV company at a nominal cost to the emergency management office. Slides, photographs, newscasts, and amateur video of the tornado were used to create this eight minute presentation. Each victim of the tornado received a copy, which for some is the only photographic evidence they have of what they endured. Because time had sufficiently elapsed, most people were able to watch the video at the Labor Day dinner, recall what destruction they had lived through, and appreciate how well they had coped with the situation - the latter perhaps the greatest value of the film for the survivors.

The debris picking day three months after the incident was well attended by community volunteers as well as victims of the tornado. After the initial debris removal in July, a fairly large, moderately difficult to access area still needed to be cleaned up. When that debris was removed, the area looked more like it had before the tornado. The survey results indicated most

survivors had a greater sense of completion following the October debris picking day. The day also contributed to restoring hope for the community.

One of the best ways to determine whether service objectives have been met is to ask the recipient, or customer! Six months after the Cooperstown tornado, the lead social worker visited each of the thirty-two families to say good-bye and distribute performance survey forms. Agencies, services, and events that had been involved or offered during the response and recovery periods were listed and grouped by delivery dates. The person(s) being surveyed were asked to grade each listing on a scale of 1-10 with 1 the Least Helpful and 10 the Most Helpful. The survey indicates that the Cooperstown recipients of the County's services believe the objectives of the recovery intervention plan were met.

As expected, some agencies or events received higher marks than others. At no time did any service provider or event get criticized. We believe the non-existence of criticism of governmental services is the direct result of having maintained a recovery team in Cooperstown for six months following the incident. We also believe recovery was a smoother process for the residents of this closely knit community because of a solid recovery intervention plan.

Consumer opinions will be discussed and evaluated by the emergency management team as plans are revised and improved. In tandem with the survey, staff critiques which followed the response effort and the recovery intervention period will also be considered. There is no doubt in the minds of the Manitowoc County emergency management team that when a disaster occurs, crisis intervention must be seen as an integral part of the recovery effort.



## V. INTEGRATED EMERGENCY MANAGEMENT

### EMERGENCY PREPAREDNESS FOR OUR CITIES

#### Civil Disturbance and Urban Center Crisis Management: Comparing the Los Angeles and Atlanta Experiences

*by*

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Concerned about the possible escalation in the incidents of riots and other forms of civil unrest and about your ability to deal with it? Did the April 1992 Los Angeles civil disorders send you scurrying to develop a plan? What were the lessons learned or, in many cases, re-learned? Where did you fit in the process? Are you part of the problem or the solution? Do you have anything at stake? When all else fails, whom do you call?

Let me suggest that you are both part of the problem as well as the solution. Let me suggest that you do have a vital role in the mitigation, preparedness, response, and recovery of our cities and communities around this country. You must have a plan and be part of the plan. But no matter how many plans we have, no matter how much we pay for them or how elaborate they are, the process of planning far outweighs the plan. That is to say that it is imperative that not only the local law enforcement, fire services, security entities, public works, etc. meet and greet and plan and exercise together. It is equally important that at the local level the business community meet and greet and work together with the local community to mitigate, prepare, respond and recover from potential disastrous situations.

Much of what will be related to you will address other vertical relationships that occurred among local, state and federal interventions related specifically to the 1992 Los Angeles riots. We will share experiences from an operational perspective viewed from an Emergency Operations Center (EOC)

in Atlanta, Georgia. We will discuss the coordination process that occurs during the operation emphasizing the need to develop the process prior to the operation so that the necessary tools are available during the operation. We will focus on the concept of Integrated Emergency Management System (IEMS).

Researchers now believe that riots develop in three distinct phases. Phase one occurs when an incendiary incident or action sets off a disturbance among a small group within a well-defined area of a city. In phase two, ordinary citizens alerted by media coverage but often not overly concerned with the precipitating problem, join the crowd for the purpose of looting, and the disturbance begins to spread to other sections of the city. Phase three is set off when organized youth gangs join in the riot with planned activities directed against targets of opportunity, such as gun stores.

The solutions for successful community operations among fire, emergency medical services, law enforcement and the business and industry can be addressed in the basic tenants of emergency management; mitigation, preparedness, response, and recovery. Under each category, the issues of prioritization, communication, planning, training, command and control, operations, and community relations must be addressed.

## **MITIGATION**

When we opened, we mentioned the term "new lessons learned," and this is where we often see this deficiency. Under mitigation a strong communications infrastructure must be established among the fire department, police department, media, and community. Why I refer to this as a new lesson learned is because we've always known that we do not talk to one another enough. At the local level or on the state and federal level, this is nothing new. The new learnings I refer to here are the ways in which we can begin to communicate with one another on a day to day basis or more importantly on a business as usual basis.

Today's technology provides the tools, but it's up to us to provide the opportunities for effective and creative utilizations of these tools. We recognize the effectiveness of the media and the need for that particular resource but we must also look beyond that for the operational needs of our respective operations. We must investigate linkages to government on an

ongoing basis so that when, not if, they are needed they become business as usual.

The Kerner Commission made several recommendations regarding the media's involvement in civil unrest during the 1960s. The commission concluded that:

- "Despite instances of sensationalism, inaccuracy, and distortion, newspapers, radio, and television tried, on a whole, to give a balanced, factual account of the 1967 disorders.
- "Elements of the news media failed to portray accurately the scale and character of the violence that occurred last summer (1967). The overall effect was, we believe, an exaggeration of both mood and event.
- "Important segments of the media failed to report adequately on the causes and consequences of civil disorders and on the underlying problems of race relations. They have not communicated to the majority of their audience-- which is white--a sense of degradation, misery, and hopelessness of the life in the ghetto."

Since the publication of the Kerner Commission Report over twenty-five years ago, the media has adopted a new and less patronizing approach to covering civil disorders. They have adopted a more balanced account of the causes and results of civil disturbances. The media and police and fire departments have developed guidelines by which to work cooperatively during civil disturbances. The creation of the post of Public Information Officer (PIO) is the key to improving relations among police, fire, and emergency medical services departments and the media.

Communicating with the community was the other new learning, not only by cultural diversity training but by establishing relationships with the community.

When we consider the primary aim of mitigation of reducing risk through anticipating actions; community relations may prove to be the most valuable mitigation effort in the prevention of civil unrest. Community activities should include:

- Preparing land-use and development plans for hazardous areas
- Educating decision makers and community representatives about the risk of civil unrest and circumstances that can cause civil unrest.

## PREPAREDNESS

Local government must maintain close liaison with local agencies and private entities to prepare for civil unrest. These preparations include mutual aid agreements with other agencies, plans for easy access to utilities (electricity, gas, and water companies), and contracts for services of various kinds.

Prepare and present a plan to the city administrators for administrative and financial consideration. At this juncture, questions as to who will finance the plan and where to procure the hardware should be answered. Again, an opportunity for some creative approaches through the planning process and the relationships established with the business community.

Communication raises its head in this phase as well, technology as we mentioned has progressed faster than any other type of scientific advance in this century. Today, it is not unusual to hear about floating holograms, "head-up" displays that project images on nearby surfaces, computers integrated into the dashboards of vehicles, patrol cars carrying optical laser disks capable of storing millions of pages of information, voice-activated systems and video monitors that allow callers to see the person on the other end of the telephone. In the words of Rodney King, "Why can't we all just get along? Why can't local government, state and federal government, public and private agencies "just get along." I submit that we could if we did more in the preparedness phase.

What is the role of the Federal agencies in civil unrest? Initial riot control responsibility in the U.S. falls on local civil law enforcement and is based on the necessary minimum force concept. The primary backup to civil police forces is the National Guard, trained and equipped by the U.S. Army and under command of the state Governor. If extra reinforcements are needed, the Guard is federalized and placed under command of the regular Armed Forces. This is what happened in Los Angeles in April and May 1992.

The regular Army has historically been reluctant to being called in at the onset of major rioting. It prefers that the more politically palatable citizen-soldiers of the National Guard be used, initially, in any major civil unrest operation.

In 1932, in the midst of the Great Depression, a national movement, largely made up a ragtag army of 22,000 jobless and desperate World War I veterans, formed what the press called the Bonus Army. They encamped in Washington, D.C., where unsuccessful pleas were made to Congress for prepayment of a veterans' bonus scheduled for 1945. Government demands that the Bonus marchers disperse were resisted. Fearing incipient revolution, President Hoover ordered Army Chief of Staff Douglas MacArthur to clear the capital. This was done using tanks, and infantry. There were numerous casualties and one child was killed by tear gas. Consequently, the Army received adverse publicity, and there were political repercussions in Congress, on which the military was dependent for future appropriations. This incident has been a continuing, contributing factor to the low priority given military riot-control training, guidelines, research, and funding for nonlethal weapons procurement. In turn, the National Guard's ability to more effectively back-up civil law enforcement in major domestic disturbances is directly affected. Recent incidents (i.e., the Los Angeles riots) point to the need for a domestic force that is properly trained and equipped.

## **RESPONSE**

Successful riot control depends on a quick and decisive show of force, built on a foundation of careful and thorough preparation. Successful response depends on a quick and decisive show of force and authority. This can only be effective by putting into operation a sophisticated ICS - well-equipped, efficiently staffed, and appropriately trained professionals - with clearly defined job tasks. This includes the important task of historian or information tracking system to accurately document events for future reference.

Carefully planned and executed lines of command and control between the field and the EOC eliminate the need for a bureaucratic chain of command. What is needed during these crucial times is a highly disciplined, organized machinery to execute rapid response and containment.

## **RECOVERY**

When it is all over, healing (by rebuilding relationships in the community) and cleaning up should be the first priority. This process will have an important psychological effect, limiting the chances of renewed flare-ups.

All local government personnel should meet to discuss their activities and identify areas for improvement. These findings should be shared with the community and feedback encouraged.

## **THE ROLE OF THE NATIONAL GUARD IN THE LOS ANGELES RIOTS**

The National Guard battalion in Inglewood was mobilized to help quell the Los Angeles riots. The battalion tactical operations center, which included the S2 section, was operational within thirty minutes of the mobilization order. Officers immediately began to gather information, using radio and television reports. Early in the riots, telephone lines were often unavailable because of the heavy volume of calls throughout the area. Even cellular and pager circuits, later a primary means of communication, were too congested for use. FM communication was almost useless in this urban environment. Finally, an armed liaison party was sent to the Inglewood police headquarters to get what local information was available. During the early stages, it was impossible to prepare a modified combined obstacles overlay because all of Los Angeles was a "go" area for gangs and rioters. Because of the nature of the operations and the tactical situation, it was not possible to prepare event templates, doctrinal templates, or decision support templates, nor a synchronization matrix. However, a situation overlay and collection plan were completed.

The situation overlay allowed the battalion to plot the location of hundreds of fires, lootings, and shootings as they occurred. As the operation developed and more information came in, the overlay showed curfew areas, appropriate police jurisdictional boundaries, and roads and freeways closed or declared danger areas. The battalion focused on company areas of operations and shooting incidents, especially those involving the guard.

In Atlanta the National Guard was also put on alert. However, since Atlanta is the State Capital additional resources were available without activating them into the city. Additionally the impacted area was not as large and with the assistance of the normal mutual aid forces Atlanta was able to launch its response efforts.

The National Guard in Los Angeles suggested some thought for their operation to be more effective. If possible, they said, operational and

intelligence staffs of the respective military and law enforcement units should anticipate use of military force early and maintain frequent liaison. They should develop workbooks documenting local gang characteristics--organization and structure, territories, tactics, and weapons by type and frequency used. Integrate multiple intelligence sources to identify a systematic documentation for anticipated operations and trouble spots.

## **INTERVENTION**

The FBI report on the "Prevention and Control of Civil Disturbance" describes three levels of intervention in controlling civil disturbances: local, state, and federal (FBI 1992).

**Local Intervention.** The local jurisdiction should be the first responder, since it is familiar with area, people, and environment. Agencies would be most effective acting alone, since personnel are trained in laws and ordinances applying to arrest and other administrative procedures. If a situation is beyond the capabilities of the local jurisdiction, it should implement its mutual aid agreements with cooperating jurisdictions. Generally, the officer in charge at the requesting agency would be officer in charge of the incident.

**State Intervention.** There are several alternatives available to local jurisdictions if they are unable to control a situation, even with the implementation of the mutual aid agreement. In most states, the highway patrol (state police), as was used in Atlanta, may be called on if public danger exists (as defined by state law or ordinance). The highway patrol would supplement, not replace, local authorities. The mayor, city manager, chief of police, chief executive of local government, or sheriff must request this aid.

The governor can authorize the state National Guard to assist in situations where there is imminent danger that is beyond the control of local authorities operating at capacity.

**Federal intervention.** The U.S. Armed Forces also may assist to quell a civil unrest, if the situation is beyond the capabilities of local and state agencies. Each state has criteria for requesting this assistance, and the local jurisdiction should be well informed of these regulations.

Calling up the National Guard and other federal agencies has an important psychological effect on how quickly order is restored in a civil unrest situation. However, without proper planning and coordination in riot control tactics, and without an update in administrative and tactical procedures, federal agencies will be under utilized in civil unrest emergencies.

In conclusion, you fit into all aspects of the problem as well as the solution. As we design emergency preparedness for our communities, whether its from a functional basis or event specific it is incumbent upon us a professional emergency planners to explore to entire gambit of potential hazards. We too often recall Santana when we said that "...those who forget the past are destined to repeat it..." Let us be assertive in examining the lessons of our past events and help direct/coordinate a solution for the future. Let us put mitigation to another level in our operation, on top.

## CLOSING THE COMMUNICATIONS GAP

Integrating the Actions of Government and Industry

By  
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### ABSTRACT

Industry and Government Incident Management Systems are never put more strongly to the test than in a crisis situation. If those systems are not operating in unison the outcome can be catastrophic. What industry and government response agencies do or don't do in the critical first hours of an incident will have long lasting implications. This paper presents an approach to reducing the barriers to effective industry and government response during an incident. Cooperation by individuals responsible for the management of industry and those responsible for the protection of the public and management of governmental agencies must deal effectively with increasingly complex issues or face the consequences.

This paper addresses a key question industry and government must answer, "What is a crisis?" For the purposes of this paper, the following definition will be used:

A crisis can be defined as any unplanned event, occurrence, or sequence of events that has a specific undesirable consequence.

The above definition indicates the need for the development of viable Industry/Government Crisis Management Programs - all hazards programs.

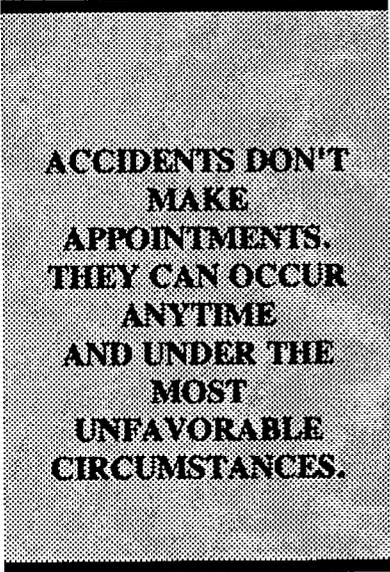
Failure to have integrated, workable Industry/Government Crisis Management Programs is akin to playing Russian Roulette with an automatic pistol. You don't have the luxury of pulling the trigger on an empty chamber.

The paper discusses four critical areas for cooperation:

- Planning/Preparedness
- Resource Management
- Training
- Information Management

Although no two Crisis Management Programs will be exactly alike, these are the critical aspects of any Crisis Management Program. The paper discusses each of these aspects and their differences. Design and development of a responsive, flexible Industry/Government structure that reflects immediate and long term capabilities can be accomplished. Key factors for the development of this cooperative process are presented.

Few crises will be as dramatic as Three Mile Island or the Valdez ... unless it is your own.



ACCIDENTS DON'T  
MAKE  
APPOINTMENTS.  
THEY CAN OCCUR  
ANYTIME  
AND UNDER THE  
MOST  
UNFAVORABLE  
CIRCUMSTANCES.

**Crisis!** The mere mention of the word evokes visions of unspeakable affliction and suffering. Yet, by developing and implementing a well defined crisis management program, government and business leaders can mitigate the potentially disastrous effects of an incident. It seems that you can't pick up a newspaper any more, without reading about a crisis somewhere. On May 17, 1995, The Chicago Tribune ran an Associated Press story about a man who had been arrested for allegedly obtaining bubonic plague bacteria through the mail. The man worked for a food testing lab. Bubonic Plague killed one fourth of the population of Europe in the Middle Ages. A crisis? Perhaps; we may never know.

Government and Business management, at all levels, is never put more strongly to the test than in a crisis situation. The objectives are immediate and so are the results. What you and those around you do or don't do will have long lasting implications. Today, individuals responsible for the management of businesses and public agencies must deal effectively with increasingly complex laws and issues or face the consequences.

What if...? You came to your office for the beginning of your work week and because of some unforeseen event there were no employees, no working telephones, no functioning computers, no utilities. You're in charge. What would you do? Where would you start? Unquestionably this is a crisis. Remember, you have access to almost none of your regular business tools. If this had been an actual incident; such as many businesses experienced during the Chicago flood in April 1992, it would already have been too late to concern yourself with developing a Crisis Management Program! You've got to have a program in place to ensure continuity of operations. But, what kind of Crisis Management Program?

You might ask yourself, "What is a crisis for my firm or agency?" For our purposes, the following definition will be used:

A crisis can be defined as any unplanned event, occurrence of sequence of events that has a specific undesirable consequence.

As depicted in Figure 1, natural disasters, financial manipulation, societal disruption, pollution and terrorism and stringent government regulations are but a few examples of potential crisis situations with potential ramifications to the public, as well as, affected industry. The reasons for focusing on these issues may result from a commitment to protect the public, the employees of the enterprise, to comply with government regulations or to protect the entity from possible liabilities and litigation. The consequences for not focusing on these issues can be disastrous.

**TYPICAL HAZARDS AND ISSUES FACED BY COMPANIES and MULTI-AGENCY TEAMS**

<b>Manufacturing Process Hazards</b>	<b>Product Related Hazards</b>	<b>Governmental Regulations</b>
<ul style="list-style-type: none"> <li>Process Failures</li> <li>● Explosions</li> <li>● Fires</li> <li>● Materials Spills/Releases</li> <li>Utility Supply Disruption</li> <li>● Electric</li> <li>● Water</li> <li>Feedstock Supply Disruption</li> <li>● Due to Accidents</li> <li>● Due to Market Forces</li> <li>Chronic Environmental Contamination</li> </ul>	<ul style="list-style-type: none"> <li>● Product Contamination</li> <li>● Product Liability</li> <li>● Product Defect</li> <li>● Market Share Loss</li> </ul> <p><b>Employee Related Hazards</b></p> <ul style="list-style-type: none"> <li>● Labor Strife</li> <li>● Operator Error</li> <li>● Employee Sabotage</li> <li>● Hostage/Violent Acts</li> <li>● Contractor Actions</li> <li>● Litigation</li> <li>● Employee Drug Use</li> <li>● Maintenance Oversight</li> </ul> <p><b>Societal Hazards</b></p> <ul style="list-style-type: none"> <li>● Political Instability/Civil Disorder</li> <li>● International Conflicts</li> <li>● Hostage/Terrorist Acts</li> <li>● Executive Kidnaping</li> <li>● Consumer Protests/Boycotts</li> <li>● Product Tampering</li> </ul>	<ul style="list-style-type: none"> <li>● Manufacturing Process</li> <li>● Product-Related</li> <li>● Work-Place (Health/Safety)</li> <li>● Environmental</li> </ul> <p><b>Financial Hazards</b></p> <ul style="list-style-type: none"> <li>● Hostile Takeover/Buyout</li> <li>● Stock Market/Price Collapse</li> <li>● Embezzlement</li> <li>● Executive Misconduct/Fraud</li> </ul> <p><b>Natural Disasters</b></p> <ul style="list-style-type: none"> <li>● Floods</li> <li>● Hurricanes</li> <li>● Tornadoes</li> <li>● Earthquakes</li> </ul> <p><b>Miscellaneous Hazards</b></p> <ul style="list-style-type: none"> <li>● Executive Succession</li> <li>● Computer Failure/Virus</li> </ul> <p><b>External Hazards</b></p> <ul style="list-style-type: none"> <li>● Neighboring Sites</li> </ul>

Figure 1

The above sampling indicates the need for a viable Crisis Management Program - an all hazards program, fully integrated, by both government and industry. Failure to have a workable Crisis Management Program is akin to playing Russian Roulette with an automatic pistol. You don't have the luxury of pulling the trigger on an empty chamber.

You may think that its too difficult and time consuming to develop a cohesive Crisis Management Program. However, when broken down into its basic elements, a comprehensive program really consists of only four parts. These are:

- Compliance.
- Preparedness.
- Training.
- Information Management.

Although no two Crisis Management Programs will be exactly alike, these are the critical aspects of any Crisis Management Program. We will discuss each of these aspects briefly. However, before we delve into the four aspects, let's look at some basic objectives. Ask yourself why do we need an integrated Crisis Management Program with an all hazards approach?

Simply, the purpose in establishing an all hazards Crisis Management Program allows you to provide for:

- Effective coordination of activities among the organizations having a management/response role (Internal & External).
- Early warning and clear instructions to all concerned if a crisis occurs (Internal & External).
- Continued assessment of actual and potential consequences of the crisis (Information Management & Sharing).
- Continuity of government and business operations during and immediately after the crisis

(Communicating horizontally and vertically in a seamless manner).

A brief synopsis of the common weaknesses in Crisis Management planning may prove helpful. As you read the discussion on the four basic elements, keep these weaknesses in mind. You may also want to assess your current Crisis Management Program against these weaknesses.

Briefly, the most common weaknesses in Crisis Management planning are:

- No systematic collection of planning information. This includes such aspects as hazard analysis, organizational information, regulatory guidance, policies, procedures and area/location specific data.
- No systematic dissemination of planning information. You've assembled a wealth of information (or lack of) and have not shared it with the potentially impacted population - those who's responsibility it is to implement the plan!
- Failure to identify and establish a workable and integrated incident command structure (Unified Command). This is a common pitfall as many planners try to fit their organization into a standard incident command system not designed around their particular needs.
- No, or minimal, coordination with effected entities. Poor communications with the community, neighboring industries, identified support entities (fire, police, hospitals, etc.) can lead to confusion and chaos during an emergency. A simple issue such as who is the primary contact for offsite agencies during an emergency can cause major disruption during an incident.
- Lack of or poorly defined Organizational Responsibilities. Failure to provide clear, concise procedures defining a person's functions, duties and tasks upon assuming their emergency organization position. This weakness can lead to finger pointing - "It's not my responsibility!" - "I though it was yours!"

- Once developed the program is not or is, at best, poorly maintained. Your program was developed to meet a regulatory requirement. Heck, you never intended to test it. Why should you? You're not planning on having any accidents! There is no provision for continued evaluation and periodic update of the material. Frequently, changed material, such as telephone numbers are buried in various paragraphs throughout the plan.
- The material you developed is not user-friendly. Your plan contains information - lots of it. Unfortunately, the user has to be a brain surgeon to figure out his/her role in its implementation. You did not provide simple, easy-to-use supplemental materials that can be used as a quick reference guide during an emergency. Worse yet, you didn't train anyone on the plan and their role in its implementation.
- You didn't disseminate the plan to the proper authorities. Failure to include appropriate parties on the distribution list most often leads to failure on their part to respond in the manner you had hoped for.

## COMPLIANCE

How do you reduce the vulnerability posed by potential crises? A system that will advise you of the initiatives to be addressed is needed. This will allow you to act in a responsible manner to fulfill the purpose and intent of existing legislation. It can also provide a framework for anticipating future legislation. An effective system for compliance can be developed only if you know what laws and regulations pertain to your operation. In order to accomplish this task, a survey of all operations should be undertaken.

The survey should include:

- General administrative information.
- Management awareness and control programs.
- Identification of hazards/potential crises.
- Characterization of affected entities.

The ultimate benefits to be gained from this type of survey are in terms of identifying areas in need of attention, establishing a list of potential crisis situations, determining what commitments you are comfortable with and documenting current efforts. Once the survey program has been developed and implemented, it must be evaluated and kept up-to-date. This can be accomplished by reviewing actual responses and by conducting a detailed audit of each element of the business.

The survey program is the initial step, toward reducing vulnerability. Next, you must organize the operation. The management chain is critical to this process. You must ensure that all levels of management become part of the program.

This can be achieved in several ways:

- For business; make a senior manager directly responsible to top management and the board of directors. The formal assignment of a senior manager to the position of Director - Crisis Management Programs, or some other appropriate title, can accomplish the initial portion of this item. For government; make a the position of Emergency Management Agency Director or Civil Defense Director mean something, not just a title for a position with no authority or responsibility. Additionally, you will want to establish within the individual's job description some measurement standard to evaluate performance. This goes both ways. Upper management has to take responsibility for developing measurable and attainable goals for the Program Director to achieve.
- Set aside specific time for reports on crisis management preparedness issues. This can be accomplished by preparing an agenda for meetings that includes a discussion of crisis management preparedness as a mandatory item. You have to give it more than lip service though. Also, you must make the discussion substantive. Provide more than the dull and tiring statistics on reportable accidents, etc. Include all levels of personnel in the presentation process. This can be very effective and it gets the message out to all

personnel that your organization is serious about crisis management preparedness.

- Make crisis management planning issues part of the strategic planning process. In one aspect, government regulations, are defining strategic implications for companies. Additionally, for public agencies it is necessary to keep plans integrated and up to date with those of the business community to which you may have to respond in a crisis situation.
- Communicate compliance through all levels of the organization through policy and procedures. This can be accomplished through formal adoption of policy at the highest levels of the organization. For business this generally, requires the approval of the Board of Directors. It is essential, however, that companies and government organizations become more aware of their responsibilities in these areas - and this is one way to build the awareness.

This discussion is limited by the space available to a brief highlight of some approaches that can be undertaken. Therefore, an in-depth analysis of your operating environment should be undertaken before developing a program or attempting to address the above items.

## **PREPAREDNESS**

Preparedness used in the broadest context means any and all measures taken to prevent, prepare for, respond, mitigate and recover from a crisis. It's with this perspective that we begin to breakdown the aspect of Preparedness. Preparedness consists of four critical aspects:

- Preparation and Prevention
- Detection and Classification
- Response and Mitigation
- Reentry and Recovery

**Preparation and Prevention:** Any set of activities that prevent a crisis, reduce the chance of a crisis happening, or reduce the damaging effects of a crisis.

Preparation and Prevention activities include, but are not limited to:

- Development and implementation of the Crisis Management Program.
- Development and implementation of the Crisis Management Plan and Implementing Procedures.
- Development and implementation of Crisis Management/Response Training.

**Detection and Incident Classification:** Actions taken to identify, assess and classify the severity of a crisis. Detection and Classification activities include, but are not limited to:

- Activation of Crisis Management Systems.
- Activation of Crisis Management Plan Implementing Procedures.
- Activation of the Crisis Management/Response Organization.

**Response and Mitigation:** Actions taken to save lives, prevent further damage and reduce the effects of the crisis. Response and Mitigation activities include, but are not limited to:

- Crisis Management/Response Organization operations.
- Affiliated Crisis Management/Response Organizations' operations.
- Continuity of business operations.

**Reentry and Recovery:** Actions taken to return to a normal or an even safer situation following the crisis. Reentry and Recovery activities include, but are not limited to:

- Activation of the Reentry and Recovery Organization.
- Coordination with Affiliated Recovery Organizations.
- Activation of the Reentry and Recovery Plan.

EMERGENCY MANAGEMENT and RESPONSE  
CRITICAL ASPECTS

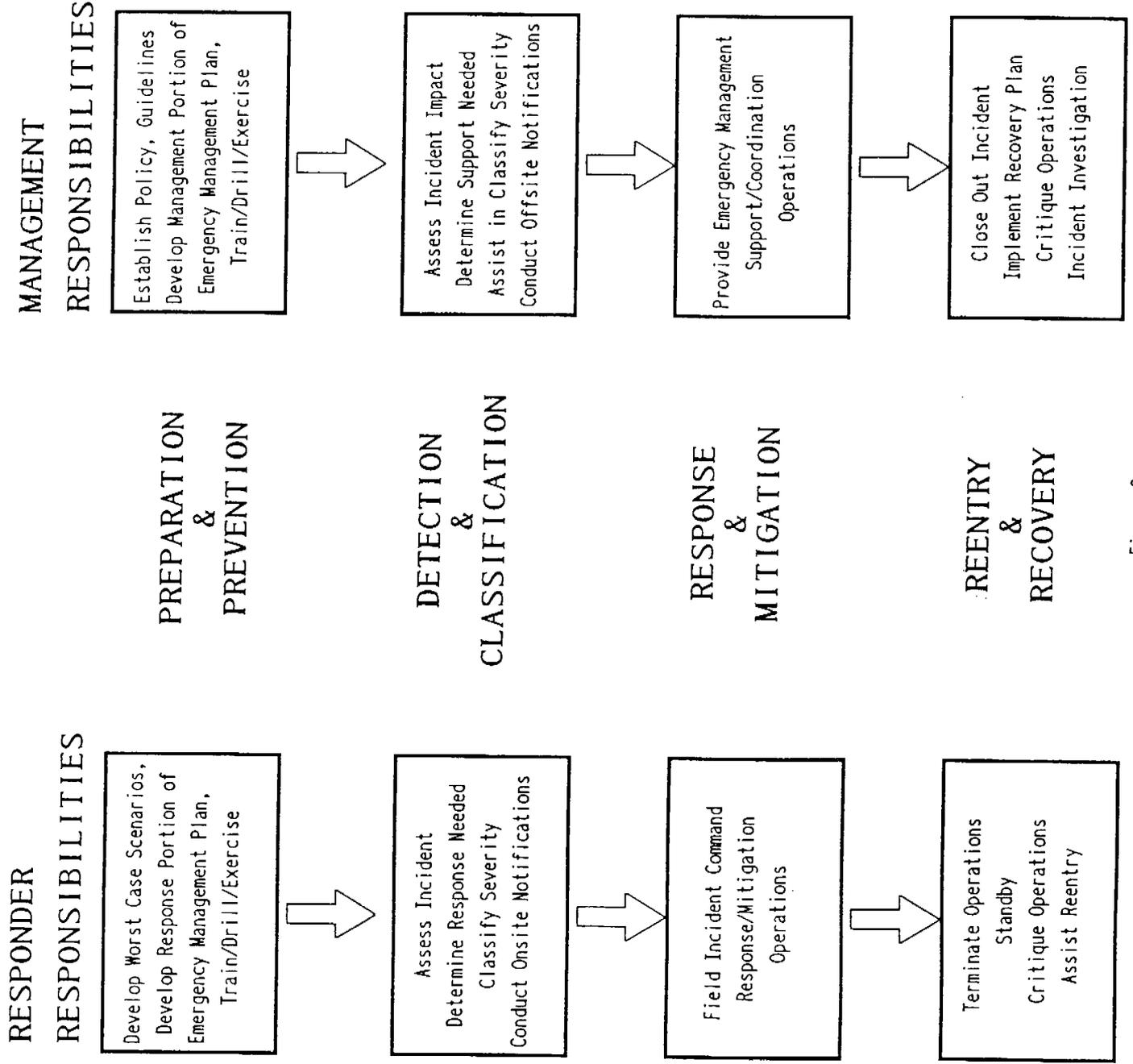


Figure 2

## TRAINING AND RETRAINING

Training of all personnel with a role in the plan, is the third component of an all hazards approach. The training of the Crisis Management/Response Organization is one of the critical success factors that must be addressed if an adequate response is to be achieved. The development of the compliance program, involvement of all levels of management and establishing preparedness is only part of the overall process. To ensure an adequate response, a trained organization is required.

A systems approach to preparing effective training programs should consist of:

**Task Analysis:** When designing an integrated training program, first determine the skills, knowledge and procedures required for satisfactory performance of each task.

**Lesson Development:** Learning objectives are defined from the skills, knowledge and procedures developed during task analysis. Instructional plans are then prepared to support the learning objectives.

**Instruction:** Lessons are systematically presented using appropriate instructional methods. Instruction may include lecture, self-paced or group-paced mediated instruction, simulation and team training.

**Evaluation:** Performance standards and evaluation criteria are developed from the learning objectives. Each trainee's performance is evaluated during the course and during field performance testing.

In addition to the formal training program, a program of proficiency demonstration is also needed. This can be accomplished by establishing a program that supplements the training with drills and exercises. The drill and exercise program can vary in degree of complexity.

## INFORMATION MANAGEMENT

*The further away from the incident, the greater the need for concise, timely, accurate information to aid the decision-making process -*

*Geary W. Sikich, 1994*

The need to establish and maintain an ongoing dynamic Crisis Management Program is essential. The crisis management process doesn't end just because you finished the crisis management plan, are in compliance, involved management and trained the staff. In order to facilitate planning requirements, a record of all initiatives should be retained. These records serve to document the accomplishments, requirements, commitments and reports relating to various program requirements. The identification of commitments in the areas of compliance, emergency preparedness and training is vital. The establishment of a defined information management system structure will ensure that documentation will be available when needed.

Senior management at all levels of business and government must be kept well informed. Information is a corporate asset. Information is expensive. It must be shared and managed effectively. Information management is also critical during a crisis. The need for active systems to provide information on materials, personnel, capabilities information on materials, personnel, capabilities and processes is essential. It is extremely important to have a system (and adequate back-up systems) in place that serves to identify, catalog, set priorities and track issues and commitments relating to crisis management and response activities.

## FUNCTION VS. STRUCTURE

Design and development of a responsive, flexible Management/Response structure that reflects immediate and long term capabilities is critical for effective implementation of activities under crisis conditions. Figure 2 depicts the cycle of activities associated with response and management in each of the four phases; Preparation and Prevention, Detection and Classification, Response and Mitigation, Reentry and Recovery.

Several considerations must be addressed to ensure an appropriate system is developed and deployed.

These factors include, but are not necessarily limited to:

- Identified incident scenarios/risk acceptance.
- Scale or magnitude of severity of the incident.
- Time factors.
- Normal organizational structure.
- Physical location.
- Intended function vs. structure of the management/response organization.
- Continuity of business operations.

Each of these factors must be considered in order to develop a Unified Incident Command System structure (Multi-Agency) that can be effective when mobilized for response.

However, when assessed from a global perspective six (6) major activity groupings appear for almost every conceivable incident. These are:

- Crisis Management.
- Crisis Management Support (Command).
- Continuity of Business Operations.
- Source Control/Mitigation Operations.
- Mitigation Operations (Response).
- Clean-Up Operations (Post-Incident Project Management).

Each of these activity groupings requires a thorough assessment in order to establish a baseline from which the degree of involvement by the Multi-Agency Team can be determined. Each time the Multi-Agency Team is pressed into service, an analysis of the situation (incident), its immediate and long-term impacts, both perceived and actual, the requirements for functional expertise and current capabilities must be accomplished. In the early phases of an incident there may be few resources from which to draw upon. Therefore, initial responders will have to shoulder the burden of response, as well as, management. Decisions made at the early stages of a crisis must not be second guessed. As we all know, the benefit of hindsight allows anyone the opportunity to exhibit a startling degree of expertise.

Multi-Agency emergency management/response structure should be based upon varying scales of incident severity and/or local capability. It should be noted that the six (6) major activity groupings cited earlier in this

paper will have a significant impact on the Multi-Agency structure. Therefore, any textbook structure cannot be considered prescriptive, but rather should serve as an example of an approach based on an analysis of capabilities, types/categories of incidents and their impacts, time factors (response time, incident duration, mitigation, clean-up), resources, physical location, community impacts and continuity of business operations considerations.

### **DEVELOPING A SEAMLESS MANAGEMENT/RESPONSE STRUCTURE**

OSHA 1910.120 (q) discusses the use of an Incident Command System (ICS) structure. Effective management of any incident entails more than mere response. An effective Multi-Agency Management and Response Organization is necessary to carry out effective operations during an emergency.

The goal in establishing a Multi-Agency incident command system structure is to transition from normal operations to emergency response operations to recovery operations in the shortest possible time.

The Incident Command System (ICS), serves as a basis for the development and application of the all hazards approach for the Multi-Agency approach to crisis management/response planning. In order for the traditional ICS to apply to the Multi-Agency setting, where the government and the affected entities' management structures and response structures have seldom been integrated into a cohesive organization, modifications are necessary. The Multi-Agency setting requires an Enhanced Incident Command System (EICS), addressing expanded crisis management/response functions and roles associated with crisis situations.

EICS is a flexible system designed to facilitate an integrated response to a variety of postulated incidents. EICS allows for a full range of activities, from planning through response, mitigation and recovery activities.

Traditionally, the focus of the Incident Command System has been on Response Activities. This focus is changing. Management roles are being identified. Public demand for management accountability has increased. Personnel responsible for response operations are demanding more management interface and support.

Management is impelled to provide more support and play an integral role in the overall response to an incident. It should be noted, while not all of the positions listed on the organization chart may be filled for every incident, the functions for each position need to be addressed by the Multi-Agency team.

The operating requirements for the EICS, as with the traditional ICS, dictate a readily adaptable organizational structure. This structure must be accepted by all organizations with an identified role in the Crisis Management Plan. Implementation should minimize disruption to existing systems and it must be simple enough to have low operational maintenance costs. In order for the structure to be effective it is imperative to establish a quality communications system between all agencies with a role in potential crisis situations.

To accomplish this, the EICS and ICS were created with certain concepts. These are:

- Common terminology
- Modular organization.
- Integrated communications.
- Unified command structure.
- Consolidated action plans.
- Manageable span of control.
- Predesignated incident facilities.
- Comprehensive resource management.

An ICS organization is built around five sections. These are the Command Section, the Operations Section, the Planning Section, the Logistics Section, and the Finance Section. In the EICS, some variations in the structure of the sections exists in comparison to the standard ICS format. These variations exist as a result of the necessity to focus on Multi-Agency operations and the need to address affected and non-affected operations. The focus should be on applying the Enhanced Incident Command System (EICS) to the various Multi-Agency settings within which it will operate.

The objectives for establishing a standard format for Multi-Agency Crisis Management (Enhanced Incident Command) include:

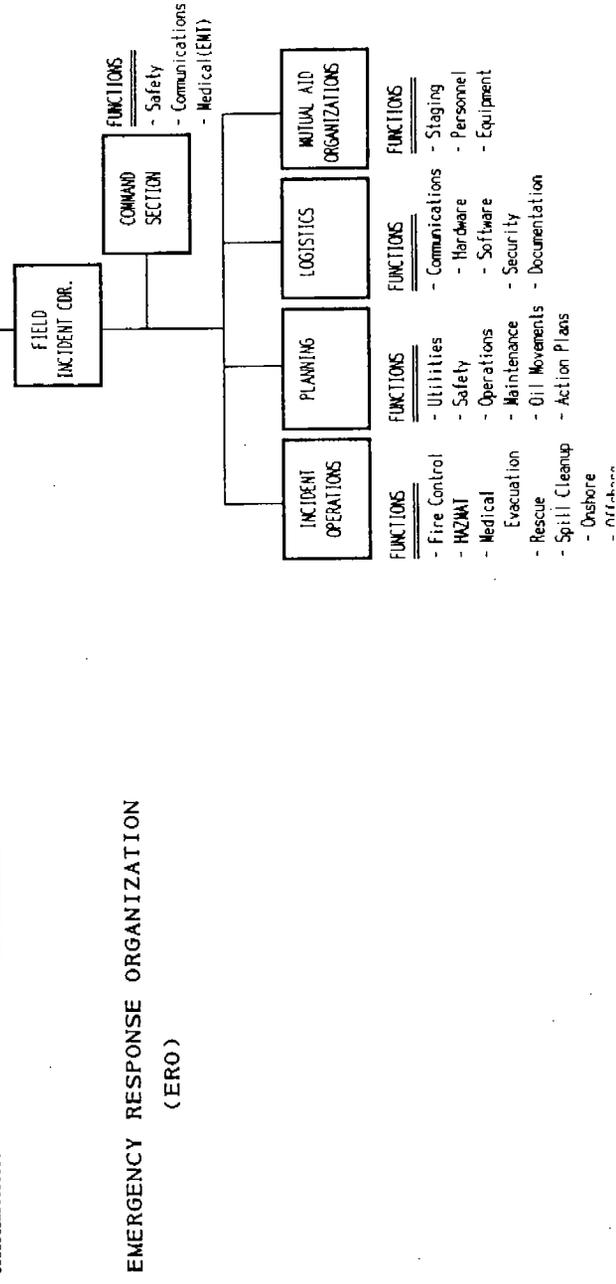
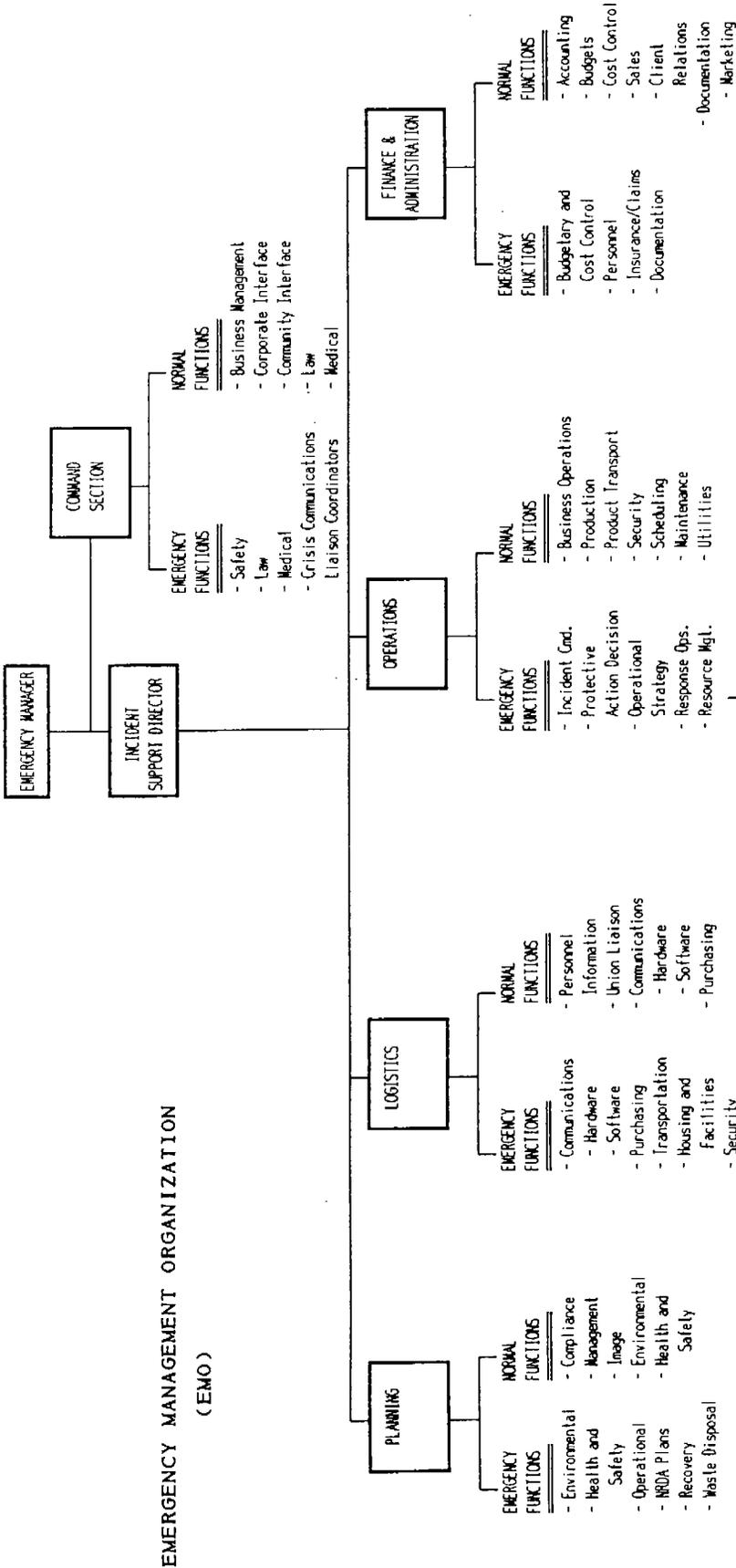
## ASPEP Journal 1995

- Effective coordination of activities among the organizations having a role.
- Early warning and clear instructions to the general public in the affected area if an incident occurs.
- Continued assessment of actual or potential consequences both onsite and offsite.
- Seamless structure (horizontal and vertical) within the Multi-Agency team.

The structure of the Enhanced Incident Command System and supporting materials (Crisis Management Plans) should be flexible, yet provide consistency from entity to entity. The EICS allows for a full range of organizational response activities dealing with the planning function through the response, mitigation and recovery phases.

During an incident, command and control is very critical to effective overall emergency management. Effective leadership, coordination and unified on-scene command of emergency response organizations is required for thorough, timely mitigation of an incident.

EMERGENCY MANAGEMENT/RESPONSE ORGANIZATION (EMRO) FUNCTIONAL STRUCTURE



## INCIDENT ASSESSMENT: A KEY FACTOR

Initial assessment of an incident is critical. Properly assessing the potential magnitude of an incident provides a basis for implementation of the EICS. It is, therefore, imperative to train personnel, who are initial responders, to properly assess the incident. This means that a broader preview of potential impacts is needed. One can no longer opt for a narrowly focused assessment based upon an analysis of limited factors.

Seven key issues/factors have come to the forefront as essential to determining the full impact of an incident. In order to effectively implement a coordinated response, you must consider these factors. They are:

- |                       |   |
|-----------------------|---|
| Safety -              | Consisting of injury, fatality and protective action considerations.  |
| Environmental -       | Consisting of establishing and assessing potential impacts to the environment (air, land, water).   |
| Operational -         | Consisting of assessing operational considerations, such as, facility status, continuity of operations, reentry and recovery issues.      |
| Geographic -          | Consisting of assessing population and infrastructure issues, such as, population groups, modes of transportation and regional geography. |
| Commodity -           | Consisting of identification of the material involved, quantity, toxicity and other characteristics                                       |
| Meteorological -      | Consisting of assessing short term and long term conditions.  |
| Response Capability - | Consisting of an assessment of all available management/response capabilities, including human resources                                  |

and equipment resources. This category also should consist of evaluating Multi-Agency response strategies.

Personnel need to embrace this broader assessment perspective in order to effectively implement an effective response and manage the impact of an incident. Today, more and more incidents require that we employ a strategic incident command system designed around a Multi-Agency response.

## CONCLUSION

As stated at the beginning of this paper, management, at all levels, is never put more strongly to the test than in a crisis situation. The objectives are immediate and so are the results. What you and those around you do or don't do will have long lasting implications. That is why it is essential for government and industry to close the communications gap and take an active role in the process of crisis preparedness planning. Representatives of all agencies with a management and response role must participate and communicate their assumptions, expectations and desires to each other in order for there to be a successful conclusion to any incident.

In almost every instance of successful response to a crisis, management and response activities consisting of sound operating execution coupled with superior communication predominate. Operational response is essential. It is the one that saves lives, property and other assets. The ability to communicate is no less important. It's the one that saves the community.

The simple fact is: perception is reality. Public perception of the Multi-Agency team's reaction to a crisis is as important as the team's operating response. Lessons learned in crises ranging from Three Mile Island to the Exxon Valdez validate the need for a dynamic crisis management program.

Trust and confidence in the abilities of all levels of management, either in industry or in the government, must be established. "How well have my people prepared?" This question can only be answered satisfactorily, if you have established a level of trust and confidence, can communicate risk and are willing to allow these managers to practice upward management, that is to delegate up. They must have the ability to recognize needs

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and have a process in place that allows them to delegate up without fear of repercussions.

Few crises will be as dramatic as Three Mile Island or the Valdez ... unless it is your own. When your crisis occurs, the hardest part of dealing with it can involve answering the public call for information - a call personified by a television correspondent or newspaper reporter who shows up at your doorstep or on your telephone line to get the story. How well you respond depends on how well you are prepared.



## VI. ORGANIZATIONAL ISSUES

### REINVENTING THE NATIONAL COORDINATING COUNCIL ON EMERGENCY MANAGEMENT

*By*  
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In today's world, we are reinventing government, business, industry, organizations, and society. The reinvention of our institutions and organizations has come about due to a trend of the day that emphasizes the need to do things in a more cost effective, expedient, and visionary manner as a means of survival institutionally and economically in a changing world. Thus we have coined the word "reinvent" and its various forms to indicate that we are doing things in a different way to revitalize and reshape old institutions and programs.

The National Coordinating Council on Emergency Management (NCCEM) developed recommendations based on a study of global trends through the 2010 Task Force to ensure NCCEM's viability into the twenty-first century as the organization for emergency management professionals and interests. This paper will present arguments and suggestions for the reinvention of NCCEM and its organizational structure that support the 2010 Task Force Report Recommendations and the organization's expressed desire to accommodate the needs of and provide services to the broader emergency management community now and in the future.

The National Coordinating Council on Emergency Management has an admirable history. NCCEM was originally established as an organization for the civil defense community, primarily the local civil defense director. The organization is 43 years old and is structured similarly to the local, state, regional, and federal government levels that the Federal Emergency Management Agency (FEMA) and other federal agencies use. The pyramid structure was ideal in the beginning since it mirrored the parent agency of the day, the Defense Civil Preparedness Agency (DCPA), and its military background. As the all-hazards emergency management concept evolved, NCCEM's structure remained intact because the local, state, region, and federal levels were still the operational levels utilized by FEMA.

However, the old structure of NCCEM is now obsolete. The hierarchal or pyramid delineation patterned after the governmental civil defense/emergency management concept is inadequate to accomplish the purpose and goals of today's peer group association. Emergency management professionals are presently working in business, industry, and the military as well as in the various levels of government. A good proportion of the Certified Emergency Managers (CEMs) thus far are emergency managers from other disciplines. The breakdown of NCCEM membership further supports the argument that emergency managers are no longer found solely at the local government level. Therefore, the peer group association must consider its structure, officer requirements, and membership categories in light of the global emergency management profession if it is to serve its expanding constituency.

One of NCCEM's acknowledged goals is the desire to serve as a clearinghouse for emergency management issues and concerns. The organization's history and credibility make it the logical association for this purpose. However, its present structure limits the perspective of issues and concerns. The majority of NCCEM's energy and dialogue in meetings, committees, presentations, and the monthly newsletter focuses on the traditional governmental emergency management viewpoint. There is little in program agendas, updates, or news that relates to the broader emergency management professional. Some attention is given to business, industrial, and military needs at the annual conference in concurrent tracks but plenary sessions and keynote speakers are primarily geared to the conventional subjects, i.e., FEMA-related programs and functions. NCCEM must take a much broader look at what is going on in the business and be far more flexible and diverse in what it offers to its membership to serve as a clearinghouse on emergency management. The makeup of the membership reflects a much broader emergency management base than the organization truly serves at the moment. The problem is not that the management and leadership do not realize the need - the problem is that the structure is not presently in place organizationally or functionally to adequately bridge the gaps in communication to and between all disciplines, and disseminate information needed by the broader membership.

A meaningful dialogue and information exchange that addresses the needs of the broader NCCEM constituency will require an organizational structure that solicits input on needs and activities among all disciplines.

Provisions for cross-discipline networking and sharing of information demand something more than the established annual and mid-year meetings and a newsletter. Budgetary restraints will not allow a massive new way of communicating with and networking among the membership in the immediate future. However, something as simple as committees and working groups can be established to facilitate a forum and interface between governmental, business, industrial, and military interests. This or some other mechanism must be designated to establish an organizational means of enhancing inter-discipline relationships and opening up the association. Bottom line, it is critical that some vehicle be established to create more dialog and integration of the entire membership and thus a better balance of programs and services.

To better serve the membership of the organization, NCCEM must provide membership services and benefits that allow participation beyond the traditional conferences as a means of communicating and accessing timely and vital information to address discipline-specific and common community needs. Again, financial limitations will not permit an overnight technological remedy for this problem. NCCEM and other organizations or agencies are on the brink of entering the telecommunications revolution. As more and more people acquire hardware and software capabilities and access the Internet, NCCEM must be part of that process and expand its membership services accordingly.

The recent growth in NCCEM membership clearly represents the changes in and broader interests of the emergency management profession but the present membership categories do not provide for equal representation and participation of all emergency management professionals. The greatest percentage of growth in members the last few years is in the Professional-Technical category. For many years, the Delegate category was the largest percentage of the overall membership. The reason for the decline in the Delegate category is quite evident; as emergency managers from other disciplines join NCCEM, they cannot meet the requirements of the Delegate membership criteria and, by default, fall into the Professional-Technical category. The current bylaws of the organization allow the Professional-Technical members to vote, serve on committees, and hold all offices but that of the President of NCCEM. That privilege is exclusively the Delegate member's right. This limits the professional growth and interest of some members as well as the growth and benefits of the organization because it is such a narrow perspective for an organization that wants to be the clearinghouse for emergency management issues and

concerns, and the association representing the emergency management profession. Truthfully, the benefit of NCCEM's certification program is the strongest reason for the business, industrial or military emergency management practitioner/advocate to be affiliated with NCCEM as long as the structure and membership criteria are so narrowly defined. The organization has opened its membership to the broader emergency management profession but is still closed as far as its overall philosophy of who, what, and where its membership is and why they should join and support NCCEM.

The overall purpose and intent of an emergency management program, in this country and abroad, are the same whether working in local, state, or the federal government, in business or industry, or in the military. Yes, there are some differences in terminology but many, if not all, can be overcome in a professional integration of disciplines that enables everyone to work more closely together. A comprehensive approach to the program encourages the utilization of all resources to develop an all-hazards emergency management program to accomplish the common goal of preparedness. And yet, NCCEM is not taking the same approach in regard to its membership and structure. The organization's potential is limited because every member cannot participate in a leadership role if so desired. The concept and perspective of the emergency management profession is limited by the traditional emphasis on the local/state/federal government viewpoint with little professional consideration and embracing of the CEMs and other members who work in other areas. Vision of the expanding field is limited by hanging on to the past instead of finding new ways to proactively strengthen and promote the emergency management program and profession.

With the challenge of a 43-year history and a natural resistance to change, are there solutions that will enable NCCEM to better meet the needs of its membership? The NCCEM Board of Directors took a very positive step forward last fall by approving the NCCEM Past Presidents Council as a visionary group to work on implementation of the NCCEM 2010 Task Force Recommendations. This year, the Past Presidents Council drafted an Information Management Strategy Plan to assist the organization in communicating and networking with and among its membership. At the same time, the Bylaws Committee is working on revising the organization's bylaws; this is underway with consideration of the 2010 Task Force Report Recommendations and input from the Past Presidents Council. By working together, bylaws will be developed to guide the organization into

the future without the patchwork effect of an annual vote on isolated revisions of certain portions of the bylaws.

Part of the bylaws consideration must be the membership categories. To serve the diverse makeup of NCCEM and to give fair representation to all members, there are only two categories of membership necessary - an Active (or some similar name) and an Affiliate member. If NCCEM's membership dues were raised more in line with other organizations' annual fees, an argument could be made for having only the Active membership category. The Active category should give everyone the same rights and benefits. The Active member would be limited only by his/her desire to participate and network within the NCCEM organization.

The NCCEM organizational structure based on the ten FEMA regions must also be revisited and reinvented. With shrinking budgets, regional organizations are generally ineffective and meetings are poorly attended in most cases. Regions that saw attendance of 300 to 400 members at an annual conference a few years ago now do well to host 30 to 40 people. Some regions no longer attempt to hold a conference because of the lack of interest, poor attendance, or the time and cost of such an effort. The concept of regional and state representation is good but rarely works due to the lack of ongoing communications between the regional and state representatives and the local level members of the state emergency management associations. NCCEM has done a poor job in relating to state associations in that there are few local emergency managers who are members of both their state association and NCCEM. However, the greatest argument against the present pyramid structure is that the broader NCCEM constituency is not generally represented within this structure as part of the regional or state organizations. One exception is the state of Louisiana; their state emergency management association has accomplished a highly successful forum for all emergency management interests. Its success should serve as an example for NCCEM and other state and local emergency management organizations.

Furthermore, the regional concept combined with the requirements of the Delegate membership category as the exception for holding the office of NCCEM President does not equally represent all emergency management interests. The Delegate membership category has outlived its purpose in light of the broader membership base. The President of NCCEM or any organization must be the leader and spokesperson for all interests. One argument against changing the Delegate category is that the NCCEM

President has traditionally testified before congressional committees on behalf of the FEMA Emergency Management Assistance (EMA) funding and other FEMA/State/Local programmatic interests. This is not sufficient defense for closing the organization to the perspectives and talents of other members. From personal experience with congressional testimony and repeated observations of the process, the NCCEM testimony on behalf of EMA programs can be handled more efficiently and productively by committee and appointment. The tradition of the NCCEM President assuming this job does little for the organization as a rule. The testimony is only as good as the one who delivers it. The newness of the situation due to the annual turnover of the position and the nervousness that may accompany an appearance before a congressional committee or subcommittee can be handicaps. Those who have taken on this responsibility and had the opportunity to go back two or three years in a row know the advantages of having the opportunity to build a case for the EMA program each year due to the continuity of the situation and the confidence and comfort level built by being there several times. The best thing NCCEM can do for their members with interests in EMA funding and other FEMA related programs and issues is to establish a professional representative speaker year after year with a supporting committee or task force to develop the congressional testimony on an annual basis. More importantly, sufficient numbers of members directly involved in FEMA related programs and funding must voice their needs to their respective congressional representatives so NCCEM's written and oral testimony reinforces the "grass roots" local position and effort.

To accommodate the need for interface between all emergency management interests and to ensure that conferences, speakers, projects, communications, and networking provide a balance for all parties will take commitment, energy, and vision. This will require reinventing the original framework for leadership. The NCCEM Board of Directors, or whatever the leadership body may be called in the future, must be composed of members who represent all the membership. The number of representatives, how they are chosen, the responsibilities and deliverables assigned to each representative, and the accountability of the representatives to the membership must all be determined. This will be a major change in organization structure but one fact is a given---the present structure of elected Regional Presidents based on the old membership categories and eligibility requirements must go! It is important to have representatives of the various disciplines selected as leaders and give them a forum for communicating and sharing with individual members and the NCCEM body

as a whole. The goal of a new leadership structure should be to give every member a voice and a vested interest in the activities and growth of the organization and the profession.

The organization of NCCEM may require specific interest groups or sections that are designed as forums for presenting interest-specific issues, concerns, and requests to the entire membership. To assist in accomplishing this, NCCEM may wish to consider establishing a guidance group or steering committee composed of hand-selected members that represent the diversity of the membership. Their responsibility would be to analyze the needs of the organization in terms of short-term goals such as planning for conferences or teleconferences and establishing working committees with deliverables and timeframes. Long-term goals would come from consensus reached by various task forces and working groups designed to identify global issues of interest to the membership and its welfare. Long-term goals might include promotion of standardized terminology and operational/implementation procedures, provision of a state or community model for interfacing with all entities, or developing a marketing strategy that promotes corporate level support of NCCEM and the emergency management profession.

NCCEM's work is currently accomplished by contracted management staff and the volunteer efforts of members who are willing to give their time and have financial and management support that allows them to participate. The management staff are primarily involved with administrative functions of the organization. Officers and committees are responsible for other activities. This is a commendable way to accomplish NCCEM goals in theory. However, the volunteer role is the weakest link in the organizational chain. Best laid plans, good intentions, and best efforts given do not guarantee a job well done. Most committee chairs do well to get minimal feedback and delivery on tasks from committee members. The final report may sound like the committee really worked on a given project or charge to the group. In fact, the committee chair is usually responsible for the major part of the work and the committee's success or failure. The President and other officers of NCCEM, the regional Presidents, State Representatives, and committee chairs come and go in the organization. Because of the organizational structure and lack of criteria for the selection process, members accept that the organization will not have the same level of performance year to year in any role. There are variables with each person whether it be time to give, support from management, abilities, or opportunities. Perhaps the membership should be

more concerned and demand measurable performance indicators because the impact of lost opportunities for whatever reason may be detrimental to the entire organization. This is particularly important at a time when emergency management is still seeking a clear identity in governmental circles and is so anxious about funding in all areas. For these reasons, it is suggested that NCCEM would be wise to consider additional professional staff to take over many of the responsibilities normally assumed by officers, committee chairs, and ad hoc groups to ensure sufficient time, attention, and formal deliverables in areas that directly impact the well-being of the profession and the credibility of the organization.

The membership of NCCEM is made up of good people and more are coming into the organization continually. NCCEM has taken a giant step toward survivability and viability as an organization with the vision shown in the 2010 Task Force Report. Implementation of the recommendations from the report will not be easily accomplished because of the number of changes required and the diligence required to make them. NCCEM will not be reshaped overnight but it is important for everyone involved and interested in the organization to look at the association in an open, objective manner. To guarantee the stated goals and mission of NCCEM, the leadership and membership must push ahead with wisdom, vision, and courage to reinvent the organization to serve the new emergency management profession.

## VII. AUTHOR BIOGRAPHIES

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Joe Ashby served as a Disaster Preparedness Specialist with the Colorado Division of Disaster Emergency Services during the formation of the Colorado Natural Hazards Mitigation Council. He co-chaired the Wildfire Mitigation Committee, Earthquake Mitigation Committee, and assisted in coordination of the initial Colorado Natural Hazards Mitigation Conference.

He is currently a Disaster Assistance Employee for FEMA Region VIII and a disaster volunteer for Douglas County, Colorado. He is the former emergency preparedness coordinator for Douglas County, President of the Colorado Emergency Management Association (CEMA), President of the National Coordinating Council on Emergency Management (NCCEM) for Region VIII, and continues as a practicing researcher and writer.

Ashby is a Certified Emergency Manager (CEM), and a Certified Disaster Recovery Planner (CDRP), a volunteer fire fighter and active in emergency management issues locally, nationally and internationally. He is married, the father of three daughters, a graduate of the University of Colorado, and lives with his wife Judy in Perry Park, Colorado.

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Major James T. Born's involvement with emergency services began in 1963 when he enlisted into the US Naval Reserve. In 1965 he went on active duty and in 1967 found himself in the Mekong Delta region of Vietnam, with SEAL Team One, where he received twenty-three of his thirty-one decorations. Following his return from active duty he again joined the naval reserve and continued his military career with the Navy for twelve years until he transferred into the U.S. Army Reserve, where he retired in 1986. Mr. Born, while in the Army Reserve, served as an advisor to President Ronald Reagan as a member of his Rapid Deployment Force (RDF-1), where he was frequently called to San Francisco Presides for world crisis management. Mr. Born then joined the Nevada National

Guard Reserve as the State Training Officer, where Governor Bob Miller appointed him as a Captain. Concurrently while serving his thirty-two years in the military service, Mr. Born served as a police officer with several agencies. His law enforcement career saw him as a police officer and deputy sheriff, through the years as a sergeant and finally as a sheriff's captain. Mr. Born received the highest law enforcement medal that is nationally awarded to a police officer, the Son's of the American Revolution Law Enforcement Commendation Medal. On October 23, 1993, Major Born was recognized by the Congress of the United States, for his thirty years of military service. In addition to a special congressional certificate being awarded to Major Born, an American flag was ordered by Congress to be flown over the United States Capitol building in his recognition. Currently he is a licensed private investigator in the states of California and Nevada and serves as Chief Investigator for the Nevada State Board of Veterinary Medical Examiners. He has completed 3100 formal hours of law enforcement training and teaches law enforcement tactics for the Commission on Peace Officer Standards and Training for the State of Nevada. He has in his spare time completed six years of college education with a major in criminal justice. Recently Mr. Born was asked by the Republican Party to run for Nevada State Assemblyman.

Mr. Born has recently completed the FEMA Professional Development Series for Emergency Managers and is a candidate for Certified Emergency Manager.

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Born in New York City, Mrs. Rosemarie Chisholm-Cohen has spent her entire life in New Jersey. She graduated from Scotch Plains-Fanwood High School in 1966. In addition, Mrs. Chisholm-Cohen has attended classes at Rutgers University and Ocean County College. She was one of the first recipients to earn the Certification as an Emergency Manager (CEM) from the National Coordinating Council on Emergency Management.

In the past, Mrs. Chisholm-Cohen worked with law enforcement agencies in both South Toms River and Beachwood as an auxiliary police officer. For five years Mrs. Chisholm-Cohen served as President of the Fraternal Order of Police, Associate Membership, Lodge 10 in Ocean County. Past employment also includes serving as Deputy Coordinator of Emergency Management in Beachwood, New Jersey and three years as a security officer at Six Flags Great Adventure in Jackson, New Jersey.

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Mrs. Chisholm-Cohen first became involved in Civil Defense-Disaster Control in Ocean County in 1971 as a volunteer. Her primary duties were in training and she served as Director of the Ocean County Auxiliary Police School until its closing in 1987. Mrs. Chisholm-Cohen completed the Career Development Program for Emergency Management Coordinators in 1982.

In 1984, Mrs. Chisholm-Cohen was hired as a full time employee of the Ocean County Department of Emergency Services to serve as Training Coordinator for emergency management, fire, first aid and law enforcement personnel.

In 1987, Mrs. Chisholm-Cohen was appointed to the position of Deputy Emergency Management Coordinator for Ocean County and she continues in that position today, with the Ocean County Sheriff's Department.

In the past, Mrs. Chisholm-Cohen has served as President of the National Coordinating Council on Emergency Management, Region II; as Chairperson of the Training and Education Committee and as Chairperson of the Administrative Committee for the Development of Professional Standards for Emergency Management. She served as the National President of NCEM. in 1994.

Currently Mrs. Chisholm-Cohen is serving for a second year on the Federal Emergency Management Agency Advisory Board and was appointed by the FEMA Director, James Lee Witt. She is currently serving as the Vice President of ASPEP. Mrs. Chisholm-Cohen is also an Honorary Member of the United Kingdom Emergency Planning Society.

Mrs. Chisholm-Cohen resides in Beachwood with her husband of twenty-nine years. They have three sons.

### **JOHN J. CLINE**

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Recently selected for the position of Director of the Idaho Bureau of Disaster Services, John has been involved with military and civilian emergency management since 1973. As the Navy's first commissioned military police officer, he was instrumental in the design and operation of Navy Emergency Operations Centers for response to natural and man-caused disasters throughout the Caribbean, Persian Gulf, and Southwestern Region of the United States. Using his experience as an amateur radio operator, he has designed and engineered communications systems to enhance the process by which information is received and handled both in the field and in the Emergency Operations Center.

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Russell Coile, PhD., CEM, Co-Chairman of the Tri-County Community Disaster Preparedness Committee and on the Board of Directors of the Northern California Disaster Preparedness Network.

Education: SB, SM and EE degrees in Electrical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts; and PhD in Information Science, The City University, London, England.

Professional Certification/Registration: Certified Emergency Manager, Professional Engineer (District of Columbia and Pennsylvania).

Professional Society Memberships: National Coordinating Council for Emergency Management, California Emergency Services Association, U.K. Emergency Planning Society, and Fellow, U.K. Institute of Civil Defence and Disaster Studies.

Experience: Disaster Coordinator, Pacific Grove Fire Department, Jan 1990 to present. Responsible for disaster preparedness for the City of Pacific Grove. Duties include: initiating emergency preparedness programs, revising and updating the City's Multi-Hazard Emergency Plan, designing the City's Emergency Operating Center, writing Emergency Operating Center Standard Operating Procedures, planning and conducting the City's exercises such as the participation in the annual statewide earthquake exercise each April, conducting public education programs, writing the City's Radio Amateur Civil Emergency Service Plan, organizing local amateur radio operators in the City's RACES group, and training Volunteers in Preparedness - the City's neighborhood emergency response teams.

Operations Research Analyst, Office of Naval Research funded Operations Evaluation Group at the University of Rochester; Franklin Institute; and Massachusetts Institute of Technology. Military operations research experience working for several universities which had Office of Naval Research grants to design and evaluate nuclear attack and chemical warfare exercises for the Navy, Marine Corps and Army. Attended nuclear weapon, nuclear defense and chemical/biological weapons schools. Assisted in research on the design of emergency operating centers and participated in training exercises afloat aboard the U.S.S. Northampton, and at various Air Force and Navy headquarters in the United States, Japan and England. (The August 10, 1992 issue of TIME magazine had an article on some of the research I participated in while associated with the development of national emergency operating centers.)

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**Military Experience:** Reserve Officer training in high school and college. Commissioned as a Second Lieutenant in the U.S. Army Signal Corps Reserve upon graduation from college. Now, Colonel, U.S. Air Force (Retired).

**Earthquake Research:** Two years of experience at a geophysical observatory at Huancayo, Peru conducting research on earthquakes, lightning, and radio propagation through the ionosphere. (Carnegie Institution of Washington, Washington, D.C.)

**Broadcast Station Engineering:** Two years of experience working for a consulting engineering firm designing AM and FM radio broadcast stations and appearing as an Expert Witness in Federal Communications Commission hearings. (Colton & Foss, Washington, D.C.)

**Amateur Radio:** Amateur radio operator participating in emergency communications during disasters at my amateur stations: K6FVH; W3EJK; W1ILE; and KC6TUW. Current FCC-assigned amateur call is KO6IA.

### **DAVID T. CREWS, CEM**

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David Crews is the Director of Emergency Management for Reno County, a position he has held since 1993. Reno County is the second largest county in Kansas by area with a population of over 62,000. He also provides fire administration and organizes emergency services, local resources and trains volunteers to meet community needs.

He has over 27 years of government service. He is the former Mayor for the City of Clearwater, Kansas, former Chair of the Sedgwick County Rural Mayors Association, and a retired Air Force Officer. Before coming to Reno County his public service background includes experience in management, electronics, photo mapping, command and control, communications, aircraft maintenance, logistics plans, and public administration. As a logistics planner for the Air Force he is qualified in the Joint Operations Planning System (JOPS). He also served as a Logistics Chief on the NORAD/ADCOM Battle Support Staff and was responsible for the coordination and movement of logistics in the defense of the North American Continent. Other Air Force duties included preparation of fiscal budgets, manpower, public speaking, technical writing, daily scheduling, inspection, operations, training, equipping, wartime mobility, safety, supply, support, facility management and security.

Mr. Crews graduated from Kansas State University in 1966. He has attended Air Force technical schools in electronics for a total of 19 months. He is a graduate

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of the primary, secondary and senior Armed Forces Staff Courses. He has eighteen hours of graduate level courses in education and industrial psychology from Chapman College and nine hours of public administration from Wichita State University. He has received continuing education certificates from Wichita State in supervision and computer applications. He is a Certified Emergency Manager (CEM) and has completed the FEMA Professional Development Series (PDS) with over 300 hours of emergency management training, which include Computer Aided Management of Emergency Operations (CAMEO) and Emergency Information Systems (EIS). He is a licensed radio amateur. He has attended the Integrated Emergency Management System (IEMS) and the Telecommunications and Warning Courses at the FEMA Emergency Management Institute.

He is a member of the National Coordinating Council on Emergency Management (NECCM), the Kansas Emergency Management Association (KEPA), the Kansas Emergency Management Support Association (KEMSA), the International Association of Fire Chiefs, the Association of Public-Safety Communications (APCO), The American Radio Relay League (ARRL), on the Board of Directors for Emergency Medical Services in Reno County, the administrator for the Local Emergency Planning Committee (LEPC), Explorer Post Advisor for Post 396 and Commander of the local Civil Air Patrol Squadron.

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Aaron A. (Art) Francis is a Certified Emergency Manager and a member of the American Society of Professional Emergency Planners. Art is employed as a Senior Planning Coordinator in the Waste Operations Department of Reynolds Electrical & Engineering Co., a Prime Contractor of the U.S. Department of Energy at the Nevada Test Site.

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Art holds a BS from the University of Nevada - Las Vegas, and has an extensive background in occupational safety, fire protection, and emergency management. His emergency management introduction began with shipboard damage control on an aircraft carrier during the Vietnam War. This career has continued as a civilian through the fire service, mine rescue, and for a National Emergency Response Organization as a responder, exercise planner, controller, and evaluator.

Today Art has emergency management responsibility for two low level radioactive waste management sites, a low level liquid waste treatment facility currently in design, and a hazardous materials storage unit. He is a DOE Certified Accident Investigator, and a state of Nevada Certified Firefighter. Art has taught in the University of Nevada Community College System, and is active in the Boy Scouts of America as a safety and emergency preparedness merit badge counselor. Art also participates in the Southern Nevada C.A.R.E. Group and is an active supporter of the Clark County Local Emergency Planning Committee.

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### **WALTER G. GREEN III, CEM**

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Walter Green is the Disaster Program Manager for the Virginia Department of Health, lead state planner for Emergency Support Function 8, and manager of the state ESF-8 Emergency Support Center. He also he serves as the Communications Electronics Officer of the Virginia Defense Force. He holds Masters degrees in Public Administration and Business Administration and is currently completing his Doctoral dissertation. His wife Lindsey and his three Springer Spaniels, Cherokee, Snickers, and Rocky, are enthusiastic supporters of emergency management as a way of life.

### **J. ROBERT JOHNSON**

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Robert Johnson's involvement with emergency services began in 1962. Experience includes law enforcement, emergency medical services, and emergency management. Bob has worked both in the private and government sectors. He has spoken throughout Michigan, in Canada, and at the Emergency Management Institute in Emmitsburg, Maryland. Bob has developed and initiated cost effective programs in the field of emergency management.

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He is educated in areas of interpersonal dynamics, theology, and emergency management. Bob is employed by the City of Sterling Heights and coordinates all major emergencies occurring within the city. His memberships include: National Coordinating Council on Emergency Management, chairing the Family Protection Task Force; International Critical Incident Stress Foundation; Michigan Emergency Managers Association, serving on their Board; and an invited member of the American Society of Professional Emergency Planners. He was chosen Coordinator of the Year in 1993 by the Michigan Emergency Managers Association. Bob earned his Certified Emergency Manager recognition and Professional Emergency Manager status from the Michigan State Police Emergency Management Division in 1993.

The city's Family Protection program is recognized throughout the state and country, as well as being selected to be the example for distribution within the State of Michigan.

### **AVAGENE MOORE, CEM**

#### **Contractor**

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Avagene Moore is a Certified Emergency Manager (CEM) and is currently a private contractor in the field of emergency management. Prior to going out on her own, Avagene was an Emergency Management Project Manager in the Emergency Management Laboratory managed by the Oak Ridge Institute for Science and Education (ORISE) for the U. S. Department of Energy (DOE) in Oak Ridge, Tennessee (June 1991 - September 1995). Her duties included research and development of training courses for federal agencies, writing plans and implementing procedures for DOE contractor sites, and the management and coordination of a 200-member occupational safety committee.

Avagene worked with the Emergency Management Agency in Lawrenceburg, Tennessee from 1975 through 1990. She was active in her state emergency management association as well as the National Coordinating Council on Emergency Management (NCCEM) where she was involved as an officer in the regional and national levels from 1984 through 1990. As a Past President of NCCEM, she served as a member of the NCCEM 2010 Task Force and was among the first emergency management professionals to receive the CEM designation in 1993. Avagene was the 1994 President of the American Society of Professional Emergency Planners (ASPEP).

**WILLIAM E. REYNOLDS, CEM**

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Bill Reynolds began his emergency management career as the part-time Assistant Civil Defense Director for the City of Elmhurst, Illinois, in 1970. He graduated from the Career Development Program for Civil Defense Directors at Staff College in Battle Creek, Michigan, in June of 1972. He was a founding member of the American Society of Professional Emergency Planners also in June of 1972.

When he became involved in emergency management, his full-time occupation was that of a professional firefighter for the City of Elmhurst, Illinois, where he attained the rank of Lieutenant. He holds an Associate of Arts Degree in Fire Science from the College of DuPage, Glen Ellyn, Illinois, and a Bachelor of Arts Degree in Fire Administration from Western Illinois University, Macomb, Illinois.

In September of 1989 he retired from the Elmhurst Fire Department with 28 years of service. He then became the first full-time Coordinator of the City of Naperville Emergency Management Agency.

In April of 1993, he received his certificate of completion for the Professional Development series from FEMA. In November of 1993, he became a Certified Emergency Manager.

He has served as President of the International Fire Photographers Association (1979-1988), President of the Northeast Illinois Emergency Management Council (1992-1993) and is currently the 1995 President of the Illinois Emergency Services Management Association.

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**Principal**

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Mr. Geary W. Sikich is the author of It Can't Happen Here: All Hazards Crisis Management Planning published by PennWell Books 1993. Mr. Sikich's most recent article, "All Hazards: Crisis Management Planning" appeared in The International Review For Chief Executive Officers, published by Sterling Publications, London, April 1994. He is also the author of The Emergency Management Planning Handbook currently scheduled for publication by McGraw Hill in early 1995.

A principal of Logical Management Systems, Corp., based in Chesterton, Indiana, near Chicago, Illinois, Mr. Sikich has over twenty years of consulting experience. He is the author of two books and numerous articles on the subjects of crisis management and emergency preparedness. He has designed and implemented crisis management programs for private industry worldwide and for agencies in the public sector. He consults on a regular basis with companies worldwide on crisis management, safety, environmental and general business issues.

Mr. Sikich has developed All Hazards Emergency Management Systems, workpaper programs for the assessment of emergency preparedness, regulatory compliance and commitment tracking systems for clients. He has also developed training, drill and exercise programs for: emergency management, environmental, safety and time management. His clients represent all facets of government, manufacturing, transportation, utilities, petrochemical, industrial gas, oil and public relations companies.

He is a frequent speaker on emergency management issues and conducts seminars and workshops on emergency management, safety and environmental issues worldwide. He holds a masters degree in Counseling and Guidance from the University of Texas - El Paso.

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Ellis Stanley is currently the Director of Emergency Management for Atlant-Fulton County, Georgia. He has served on the Board of Visitors for the National Emergency Training Center's Emergency Management Institute where also serves as an adjunct instructor. He has served on many emergency management advisory boards and committees including the NCCEM CEM Commission. He is a Past President of NCCEM and current President of ASPEP. Mr. Stanley is a graduate of the University of North Carolina at Chapel Hill.

**WILLIAM D. WAGONER, PEM, CEM**  
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William D. Wagoner is a career public servant with over a quater century of service and experience at the local, state, and federal levels of government. Currently Bill is the Director of Planning for Livingston County, Michigan. The Planning Department is composed opf three divisions, Planning and Research, Emergency Management, and Solid Waste Management.

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Dr. Wagoner earned graduate degrees in Public Administration and Urban Planning and undergraduate degrees in emergency/disaster management (human services), education (political science), liberal studies, and liberal arts.

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This 2022 reprint is compiled  
by: DisasterCom World Press  
P.O. Box 336364  
Greensboro NC 27403  
[www.disastercom.org](http://www.disastercom.org)

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