Developing a More Effective Emergency Operations Center
Staffing and Field Interface Model for the City of Franklin

Executive Analysis of Fire Service Operations in Emergency Management

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ABSTRACT

Over the past several years, the City of Franklin has experienced a series of emergencies caused by Hurricanes Bonnie, Dennis, and Floyd. During the fall of 1999, Franklin experienced a devastating disaster. Hurricane Floyd made its way across Southeastern Virginia just east of Franklin. Floyd dumped over 21 inches of rain across an already saturated area. The Blackwater River overflowed its banks and flooded over 100 homes and 182 businesses with 6-7 feet of floodwaters. In addition to businesses and homeowners, the City Hall, the Public Safety Building (EOC, Fire, EMS, and Police), and the Wastewater Treatment Plant were inundated by floodwaters.

The City of Franklin emergency operations center (EOC) staff experienced an enormous amount of problems with coordinating the emergency event. The EOC staff had problems such as coordination between agencies, unclear incident strategy and objectives, and poor understanding of the incident command system (ICS).

The City of Franklin staffs its emergency operations center (EOC) in a traditional format whereby each city department head assumes their agency's lead role to coordinate resources. The problem is that the traditional EOC staffing model and interface with field operations has proven to be an ineffective method for the city to coordinate emergency operations.

The purpose of this research paper was to analyze the current EOC staffing model and the field interface and to develop a revised model that is more effective. Using the action research methodology, supported by descriptive and evaluative research, the following research questions were answered:
1. What is the current EOC staffing model and field operations interface system used by the City of Franklin?
2. Which components of the current model need improvement?
3. What are other recognized EOC staffing models and how do they interface with the field operations?
4. How do other like-sized localities in Virginia staff their EOCs and how do they interface with the field operations?
5. What elements of other identified EOC staffing models/interface methods could be adopted by the City of Franklin to improve noted deficiencies in our current system?

The research revealed that there were two basic EOC models: the “agency leader” model and the Incident Command System (ICS) model. The research also found that there were advantages and disadvantages associated with either model. Surveyed localities that use either model were generally satisfied. However, the research found that the ICS model provided better field coordination and that extensive training and regular use of the ICS is important to the successful use of the system. Therefore, it was recommended that the City of Franklin re-organize its EOC to an ICS format and provide EOC staff initial and on-going training in the use of the ICS. It was further recommended that the city departments use the ICS on a regular basis to help instill the system’s concepts.
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INTRODUCTION

In order to ensure that effective coordination takes place during a natural or manmade disaster, a well-organized, structured system must be established. The emergency operations center (EOC) staff must work closely in a team environment with other EOC personnel, elected officials, and outside agencies.

The City of Franklin staffs its emergency operations center (EOC) in a traditional format whereby each city department head assumes their agency’s lead role to coordinate resources. This EOC model and field interface is based on a traditional “agency leader” format provided by the Virginia Department of Emergency Management (VDEM). The VDEM model is used extensively throughout the Commonwealth of Virginia as well as other localities throughout the United States.

The problem is that the traditional EOC staffing model and field interface has proven to be an ineffective method for the city to coordinate emergency operations. The purpose of this research paper is to analyze the current EOC staffing model and the field interface and to develop a revised model that is more effective.

The following research questions were addressed in this study:

1. What is the current EOC staffing model and field operations interface system used by the City of Franklin?
2. Which components of the current model need improvement?
3. What are other recognized EOC staffing models and how do they interface with the field operations?
4. How do other like-sized localities in Virginia staff their EOCs and how do they interface with the field operations?
5. What elements of other identified EOC staffing models/interface methods could be adopted by the City of Franklin to improve noted deficiencies in our current system?

**BACKGROUND AND SIGNIFICANCE**

The City of Franklin is located in the western tidewater region of Virginia with a 2000 census population of approximately 8,300 people. The City of Franklin is organized under a council/manager form of government. The City Manager oversees the daily operations of the city with a full time staff of 175.

To prepare the community for possible man-made or natural disasters and in accordance with the Virginia Emergency Services Disaster Law, Title 44 (1973), the City of Franklin emergency management staff developed and maintains an emergency operations plan (EOP). The EOP was jointly developed by the city staff and approved by Franklin City Council. The EOP outlines staff responsibilities and includes suggested organizational structures to coordinate field operations from the emergency operations center (EOC).

During large-scale emergency operations, the city uses the department head staff to help coordinate the efforts. For field operations, the city uses the fire and rescue department (9 career/100 volunteer), the police department (37 full time officers), public works (65 full time staff), and the municipal electric (30 full time staff). The remaining administrative staff helps with answering phones, taking messages, and supporting other EOC functions.

The City of Franklin Fire and Rescue department uses the Incident Command System (ICS) in daily operations. The remainder of the city staff, including the police
department, follows the administrative chain of command to manage all incidents. During large-scale incidents involving several city departments, operations are somewhat decentralized. That is, departments operate independently.

The City of Franklin has been fortunate relative to its history of disasters. Not including minor snowstorms and flash floods, the city had not experienced a major disaster since the flood of August 1940. According to an article in the August 1940 Tidewater News, the flood was caused by a week of severe rains which caused the Blackwater River to overflow its banks. Downtown Franklin was flooded with eight inches of water on Main Street (1940).

The background of this research project began with two local disasters that occurred during the past 3 years. In August 1998 and September 1999, local emergencies were declared based on the perceived threat of hurricanes Bonnie and Dennis. In both incidents, the EOC was activated and staffed by city personnel. Although the damage incurred by Bonnie and Dennis was minimal, the EOC staff struggled with coordinating services. The staff had problems with duplication of services in the field, units dispatching themselves without notifying the EOC, and poor communications between the field personnel. In addition, some of the EOC staff had to leave their positions in the EOC to reorganize the dysfunctional field staff.

On Thursday, September 16, 1999, Hurricane Floyd made its way across Southeastern Virginia just east of Franklin. Floyd carried enormous amounts of rain, which fell in an area already saturated with rains from previous storms. The Blackwater River overflowed its banks and made its way to the downtown portion of the city and northern residential areas. Over 100 homes and 182 businesses were totally
destroyed by 6-7 feet of floodwaters. In addition to the businesses and homeowners, the City Hall, the Public Safety Building (EOC, Fire, EMS, and Police), and the Wastewater Treatment Plant were inundated by floodwaters.

The EOC staff experienced an enormous amount of problems with coordinating field operations during the event caused by Hurricane Floyd. The problems were exacerbated with the influx of regional, state, and federal personnel. After the incident was in operation for 2 days, the Coordinator of Emergency Services, in conjunction with the Virginia Department of Forestry, attempted to organize the event by developing an incident command structure and an incident action plan for the EOC staff. However, the organizational structure and incident action plans did not significantly help to organize the event. Due to the extended event and lack of proper coordination, many of the city staff became frustrated with the ineffectiveness. Tempers flared and some fell ill.

During a post incident analysis of the flooding event caused by Hurricane Floyd, the EOC staff recognized that the city must research and adopt a different model to coordinate emergency operations. The EOC staff is concerned that because of the limited staff, the city will have difficulty with a structured EOC/ICS organization similar to that adopted by larger jurisdictions. However, all staff agrees that changes must be made to better manage future emergency events.

Through exposure to the “Executive Analysis of Fire Service Operations in Emergency Management”, the author has embarked on a research project to address the problem. The problem is that the traditional EOC staffing model and field interface has proven to be an ineffective method for the city to coordinate emergency operations.
LITERATURE REVIEW

City of Franklin’s current EOC staffing model

The City of Franklin’s emergency operations plan (EOP) version 2.0 has two emergency operations center (EOC) staffing models (2000). The first model is referred to as the “skeletal staffing” model and the second is referred to as the “full staffing” model.

The skeletal staffing model is used to coordinate minor emergencies or to prepare for an impending threat. The skeletal staffing model is comprised of the Coordinator of Emergency Services, Deputy Fire Chief, Public Information Officer (PIO), Police Chief, Message Clerk, Phone Operator, and Radio Amateur Civil Emergency Service (RACES) Operator. The skeletal staffing model and field interface are illustrated in Figure 1.

Figure 1 – EOC Skeletal Staffing Model
In the skeletal staffing model, the Coordinator of Emergency Services is responsible for directing and controlling all emergency operations and to prepare staff for an impending event. In the case of an actual event, the phone operator will receive a request from the Emergency Communications Center (ECC) and then pass the request to the Coordinator of Emergency Services. The Coordinator of Emergency Services will review the request and pass along the request to the respective EOC operational staff (i.e. – Deputy Fire Chief or Police Chief) for appropriate action. The EOC operational staff determines the appropriate action and directs respective field personnel from the EOC.

The fire and rescue department currently uses the incident command system (ICS) on a daily basis as well as during large-scale emergencies. During EOC operations, the Deputy Fire Chief communicates to an Incident Commander (IC) in the field. In cases where multiple fire/rescue incidents are occurring, each IC reports in to the Deputy Fire Chief in the EOC.

The police department does not use the ICS in a formal manner; rather, the Police Chief communicates to a field Sergeant who in turn coordinates field operations. However, the direct line of communications is not always to the field Sergeant. The Police Chief may communicate directly to an officer at an incident.

If events were to escalate or the city was to experience a sudden major disaster, the EOC would be staffed according to the full staffing model. The full staffing model is comprised of Director of Emergency Services (City Manager), Coordinator of Emergency Services, Deputy Fire Chief, Police Chief, Superintendent of Schools, Health Department representative, Social Services representative, Red Cross
representative, (2) Message Clerks, Public Information Officer (PIO), Director of Electric Department, Director of Public Works, City Attorney, and RACES Operator. The full staffing model is illustrated in Figure 2.

Figure 2 – EOC Full staffing model

In the full staffing model, the phone operator will receive a request from the emergency communications center and pass the request to the Coordinator of Emergency Services. The Coordinator of Emergency Services will review the request and delegate to the respective EOC operational staff (i.e. Deputy Fire Chief, Police Chief, Director of Electric Department, etc.). The Director of Emergency services (i.e. City manager) is available to confer with the Coordinator of Emergency Services on matters if requested. In addition, the Director of Emergency Services is responsible for making policy decisions and informing City Council on the details of the emergency.
In the full staffing EOC model, the Deputy Fire Chief and the Police Chief communicate to their respective field staff in the same manner as described in the skeletal staffing model. As in the case with the Police Chief, the Director of Public Works Department, Director of Electric Department, Director of Social Services, and Building Official communicates to their respective field supervisors who in turn communicate with their crews. The field staff communicates to their respective EOC counterpart in reverse order.

In the event that field staff is working on the same incident, each department supervisor reports to their respective supervisor in the EOC independently and without coordinating with incident field supervisors from other departments. In addition, each agency operates independently on their own radio frequency even though all city radios are programmed to allow the user to communicate with any department agency. Often due to lack of field coordination, duplicate resources are requested from the EOC.

**Weaknesses in the current EOC model**

The City of Franklin’s EOC staff experienced an enormous amount of problems with coordinating field operations during the 1999 flooding event caused by Hurricane Floyd. To help identify and correct the problems experienced, the EOC staff conducted a post incident analysis on December 7, 1999. As a result of the analysis, the EOC staff believed that the following items inhibited the proper coordination of efforts:

A. Lack of coordination between departments and between city and outside agencies.

B. Unclear incident strategy and objectives.

C. Poor understanding of the ICS.
Prior research in emergency management operations confirms the problems identified by the Franklin EOC staff. The Emergency Management Institute (EMI) found that poor communications, inadequate training, lack of resources, poor operating procedures, and lack of personnel were the top identified problems relating to emergency incident management (Emergency Management Institute, 1993).

As illustrated in Figure 2, the current EOC model and field interface is not structured to provide interagency coordination. Even though various agencies operate together on the scene of an incident, they still take direction and rely upon their department coordinator at the EOC. EOC messages reviewed from the 1999-flooding event showed that there were many problems associated with this lack of field coordination such as duplication of services, lack of resources, and lack of direction.

Wenger notes that many in the emergency management field believe that integration of non-fire agencies and non-government organizations into a common organizational structure (e.g. ICS) is a major target for improvement (1990). The National Fire Protection Association also recognizes the need for interagency incident command coordination and has developed Standard 1561: Fire Department Incident Management System (NFPA, 2000). The NFPA places the responsibility on the fire department to establish an integrated incident management system. In addition, NFPA Standard 1600: Disaster Management (NFPA ,1999) states that an agency’s response program shall utilize an incident management system (e.g.-ICS). While many emergency management professionals have restructured EOCs after the ICS, many have experienced problems related to the environmental and human attributes of a command and control type structure (Dilling, 1995). Some believe that the command
and control type structure is not a viable option when coordinating emergency operations (Drabek and Hoetmer, 1991). In addition, research by Wenger shows that the ICS system was particularly weak when dealing with integrating the activities of relief agencies and volunteers (1990).

Franklin’s EOP does not currently address how the EOC communicates the incident strategy and objectives to the field. The plan states that when the response phase is implemented, the “EOC shall direct and control the field operations,” but does not identify who is responsible for developing and communicating the incident strategy and objectives (City of Franklin, 2000). As stated by Drabek and Hoetmer, if the EOC is to organize the ICS organizational structure, then it is the responsibility of the incident commander to communicate the incident strategy and objectives through the incident action plan.

Other coordination problems experienced by City of Franklin’s EOC were due to the fact that several of the EOC staff left the EOC and set up operations in the field. This led to a decentralized operation and contributed to the unclear strategy and objectives, lack of coordination, poor communication, and duplication of services. During the post incident analysis, it was believed that many of the coordination problems could be avoided if the EOC staff remained in the EOC.

One day into the 1999-flooding event, the coordinator of Emergency Services organized the event and established the ICS as the organizational structure. However, many of the staff lacked the knowledge of the ICS and, therefore, did not follow the assigned tasks and responsibilities. Henry states that unless training in the ICS is
offered periodically, emergency service personnel will not understand the system and will attempt to act based on their perceived knowledge (1999).

The City of Franklin is not the only locality struggling to implement the ICS. An analysis of the emergency operations during the 1998 wild fires in Florida found that some EOCs experienced problems using the ICS to coordinate field activities (White, 1998). While some blame parts of the ICS for the poor incident coordination, most coordination problems in an ICS are related to inadequate training rather than the flaws in the system (Cole, 2000).

In summary, the Franklin EOC staff believes that the current system of field coordination needs to be examined and redesigned. It was also noted that the EOC staff or designee must remain in the EOC to effectively coordinate the EOC activities. If the ICS is adopted as the organizational structure, the staff feel that they will need extensive training and practice.

Other recognized EOC staffing models and field interfaces

The EOC staffing models and field interfaces utilized depends significantly on the size of the locality's staff (Drabek and Hoetmer, 1991). Generally and regardless of size, the policy and coordination functions are completed in the EOC, while the operations and operator tasks are completed in the field (Emergency Management Institute, 1993).

This research has found that there are two basic EOC and field interface structures. The first structure is similar to the one currently used by the City of Franklin. This structure staffs the EOC with agency department leaders such as the fire chief, law enforcement chief, public works director, utilities director, etc. In this structure, each
department leader is responsible for coordinating their department activities in the field. Some departments such as fire, rescue, EMS, and law enforcement may form a unified team to coordinate emergency operations in the field. In essence, the EOC structure is setup to allow department leaders to coordinate their department field activities from the EOC.

The second type of EOC model staffs the EOC in a similar fashion to the ICS. The EOC positions include an incident commander, operations chief, logistics chief, planning chief, and finance chief. In this ICS style model, each section chief supports an incident section chief in the field. Many localities have restructured their EOC organizations to that of an ICS, but many have done so without regard to the consideration of environment/human characteristics. Many localities have not adapted well to the command and control structure of the ICS. Command and control management structure works well when the problem is well defined and everyone is trained to the same level (Dilling, 1995). Dilling further states that the ICS EOC model works better in an organization with formal rules and standard operating procedures to help guide decisions. Wenger, however, found that people often prefer the ICS EOC model because they assume that the emergency would be well managed with a single person in charge (1990).

Illustrated below in Figure 3 is an example of an EOC organizational chart from the EMI ICS/EOC Interface Workshop manual (1993). This model is a hybrid of the "agency leader" and "ICS" style EOC models. In this example, the emergency management director is in charge of the overall coordination of the emergency. The
executive director and a policy group are in place to confer with the emergency management director on large issues that impact the local government.

The model in Figure 3 shows that the EOC staff is structured in various branches to support the field operations. In this example, the branches are human services, public information, emergency services, infrastructure, and damage assessment. Each branch is responsible for coordinating various field personnel assigned to the branch.

Figure 3 - Example EOC Organizational Chart

Figure 4 is an example EOC model for a city from the EMI ICS/EOC Interface Workshop participant handbook (1993). In this example, the EOC is structured in the ICS format with a unified command structure. The city commissioner is the highest elected official on-hand in the EOC. His or her responsibility is to be the liaison to the city council and other elected officials. A unified command team coordinates the
incident. The team is comprised of the city manager, fire chief (team leader), police chief, general manager for utilities, disaster preparation coordinator, and city attorney. A joint information center is formed to handle all public information in and out of the EOC. The field interface in this example is handled by the standard ICS general staff positions: operations, planning, logistics, and finance. Each section chief is responsible for coordinating the requests from their field counterparts. In the event of multiple incidents, each section chief may coordinate requests from several field section chiefs.

Figure 4 - Example EOC Organizational Chart with Unified Command preparedness

Overall, the literature reviewed provided documentation which supported the need for the City of Franklin to revise its current EOC model and field interface. It appears that there is no "boiler plate" design. However, the research does support the practice of a centralized coordination (e.g. - staffing the EOC with agency decision-
makers). This will support the City of Franklin's initiative to keep the department heads in the EOC and to maintain proper coordination and communications.

While some literature supported the ICS structure for EOCs, other literature warned about the conflicts inherent with a command and control type organization. In addition, most of the literature appeared to be written for localities with a full time emergency manager and full time public safety staff (e.g. fire, EMS, and law enforcement), but lacked sufficient information applicable to small localities such as the City of Franklin.

**PROCEDURES**

**Definition of Terms**

**Coordinator of Emergency Services** - Person having the responsibility for every day functions of emergency management. This person is also responsible for coordinating emergency operation center activities.

**Director of Emergency Services** - Highest appointed local government official (City Manager or County Administrator). Responsible for policy group in the emergency operations center.

**EOC** - Emergency Operations Center. A physical location that houses the emergency management staff that is tasked with coordinating emergency operations.

**Local Emergency** - a condition declared by a locality when there is a perceived or actual threat of an emergency or disaster.

**PIO** - Public Information Officer. The person responsible for release of information to the public and media.
RACES - Radio Amateur Civil Emergency Service. Amateur radio operators assigned to the emergency operations center for backup communications.

**Research Methodology**

This applied research paper employed the action research methodology, and was supported by descriptive and evaluative research. The procedures used to conduct this research were derived from a literature review of emergency management and fire service journals, magazine and newspaper articles, and textbooks. The current EOC staffing model/interface methods used by the City of Franklin was evaluated in order to identify components that need improvement. In addition, a survey was conducted of like-sized localities in the state of Virginia.

The literature review was conducted at the National Fire Academy's Learning Resource Center (LRC), Franklin Fire and Rescue's library, the City of Franklin's library and records, and the author's personal library. The literature review concentrated on information about various emergency management operations and field interfaces. Information was researched to address the particular problems associated with the City of Franklin's EOC staffing model and field interface.

**Instrumentation**

An eight question survey was developed for distribution to selected Virginia localities. The survey was sent to the Coordinator of Emergency Services of each locality. Some of the recipients required a follow up phone call in order to complete the survey. A copy of the survey and results is contained in Appendix A. In addition to the survey, the Virginia Directory of Government Officials (2000) was used to ascertain
information about the coordinators position (full or part-time) and the makeup of the fire and EMS providers (volunteer, combination volunteer and career, or all-career).

Questions 1 and 2 of the survey were used to ascertain if a locality has declared a local emergency and activated their EOC, and if they have, what date was the event? This question was designed to find out if the locality has actively participated in coordinating an emergency event.

Questions 3 and 4 were used to ascertain the localities EOC structure and field interface. The participants were provided with a supplementary attachment to the survey that allowed them to choose between the "VDEM model/Department leader" structure or the "ICS" structure. The participants were directed to alter the model if necessary to match their localities' EOC model and field operations interface.

Questions 5 and 6 were used to ascertain if a locality's departments were familiar with ICS and if they used ICS on a regular basis to coordinate events.

Question 7 was used to show how localities gauge their effectiveness of the EOC staffing model and field interface.

Question 8 was used for the participants to provide any further comments and to provide information on ideas they have to improve their current system.

**Population**

The author selected eighteen localities in the Commonwealth of Virginia. The selection was made based on the following criteria:

1. Virginia localities were selected because the Virginia Department of Emergency Management (VDEM) requires that cities and counties design their emergency
operations plan and procedures according to the state format. The standard VDEM format provides uniformity among all localities.

2. The eighteen localities were selected based on similar populations to the City of Franklin. The City of Franklin's population based on the 2000 census data is 8,346. The author selected localities with populations +/- 3,000 (5,346-11,346). This selection provided a sample that closely matches the attributes of the City of Franklin. The population information and associated data for each locality is listed in Appendix A.

Assumptions and Limitations

The first limitation was discovered during the literature review. Other than course manuals and several publications from the Emergency Management Institute, little information was found that addressed EOC field interfaces, especially relating to small to medium localities.

The second limitation was the survey population. Even though the participants were extremely knowledgeable and seemed to provide honest answers, the survey results may not be representative of localities throughout the United States.
RESULTS

All of the 18 surveys that were distributed were completed. Some of the recipients required a follow up phone call to complete the survey. The complete participation provides sufficient data to determine the trends in Virginia localities that are in similar size to the City of Franklin.

1. What is the current EOC staffing model and field operations interface system used by the City of Franklin?

The City of Franklin uses a scalable model that can grow in size to accommodate the event. The full staffing model is comprised of the Director of Emergency Services, Coordinator of Emergency Services, Deputy Fire Chief, Police Chief, Superintendent of Schools, Health Department representative, Social Services representative, Red Cross representative, (2) Message Clerks, Public Information Officer (PIO), Director of Electric Department, Director of Public Works, Building Official, City Attorney, Phone Operators, and RACES Operator. The current model used by the City of Franklin is the "generic" department leader model provided by the Virginia Department of Emergency Management (VDEM) in their emergency operations plan (EOP) template. The full staffing model is illustrated in Figure 5.
2. Which components of the current model need improvement?

Based on the results from the post incident analysis on December 7, 1999, the Franklin EOC staff outlined the following problems:

A. Lack of coordination between departments and between city and outside agencies.

B. Unclear incident strategy and objectives.

C. Poor understanding of the ICS.

These problems can be contributed to a number of reasons. However, the survey results showed that 11 out of 18 localities said that they needed additional staffing or resources in the EOC to help coordinate field activities. Many of the localities noted that a single person might fill multiple roles in the EOC. None of the surveyed
localities noted that a lack of resources was responsible for the lack of incident coordination or unclear incident strategy and objectives. Resource problems appeared not to be related to the size of the locality. That is, it appeared that even the largest of the localities suffered problems with lack of resources including staffing.

Although the City of Franklin experienced difficulty with coordination between departments, the majority of localities surveyed found their generic VDEM EOC model to be efficient when used to coordinate efforts. Of the localities that use the generic VDEM EOC model, 13 out of 15 rated its effectiveness average or above.

3. What are other recognized EOC staffing models and how do they interface with the field?

The literature review reveals that in addition to models similar to the VDEM EOC model, many localities throughout the United States are adopting the ICS model for EOCs. The City of Franklin started with the VDEM model and then switched to an ICS model during the flood of 1999, but some of the EOC staff did not understand the ICS.

Table 1 compares the relationship of the surveyed localities' understanding of the ICS to the actual use of ICS on a regular basis. The upper part of Table 1 applies to localities that use the VDEM EOC model. The table shows that the fire department is the largest user of the ICS followed by the EMS department. However, only 5 out of the 8 fire departments that are familiar with the ICS actually use the ICS on a regular basis, and only 2 out of the 8 EMS departments use the ICS on a regular basis. The table also shows that the law enforcement agencies in 4 localities are familiar with the ICS, but none of the law enforcement agencies use the ICS on a regular basis.
Table 1 - Familiarity and use of the ICS

<table>
<thead>
<tr>
<th>Localities that use the VDEM EOC Model (16 total localities)</th>
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<tbody>
<tr>
<td>ICS Use</td>
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<tr>
<td>----------------</td>
</tr>
<tr>
<td>Familiar with ICS</td>
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<tr>
<td>Use ICS on a regular basis</td>
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<table>
<thead>
<tr>
<th>Localities that use the ICS or Modified ICS EOC Model (2 total localities)</th>
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</thead>
<tbody>
<tr>
<td>ICS Use</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Familiar with ICS</td>
</tr>
<tr>
<td>Use ICS on a regular basis</td>
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</tbody>
</table>

The bottom portion of Table 1 compares the relationship of the surveyed localities' understanding of the ICS to the use of ICS on a regular basis. The bottom portion applies to localities that use the ICS or a modified ICS EOC model. The table shows that the fire, EMS, and law enforcement agencies are familiar with ICS and use ICS on a regular basis. Oddly, the table indicates the localities have adopted the use of the ICS, however, public works, city administration, and department of social services are not familiar with the ICS.

4. How do other like-sized localities in Virginia staff their EOCs and how do they interface with the field operations?

The survey result found that Virginia localities that are similar in size to the City of Franklin use two basic EOC staffing models. The first model is the generic VDEM EOC model and the second model is the ICS EOC model. As illustrated in Table 2, 16 out of
18 localities use the generic VDEM EOC model. Only 2 of the localities surveyed use the ICS EOC model.

Table 2 - EOC Models and Ratings

<table>
<thead>
<tr>
<th>Types of EOC models and field interface</th>
<th>Localities that have declared an emergency</th>
<th>Rating of EOC model and field interface of localities that have declared an emergency (5 = highest rating, 1 = lowest rating)</th>
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<tbody>
<tr>
<td>Generic VDEM</td>
<td>16</td>
<td>2 3 8 2 0</td>
</tr>
<tr>
<td>ICS or Modified ICS</td>
<td>2</td>
<td>0 2 0 0 0</td>
</tr>
</tbody>
</table>

The VDEM EOC model that is illustrated Figure 6 is a scalable model that can grow in size to accommodate the event. Based on the staffing available to localities, the model may be staffed with the Director of Emergency Services, Coordinator of Emergency Services, Fire Chief, Police Chief/Sheriff, Superintendent of Schools, and a Social Services representative.

Figure 6 - VDEM EOC model
In the VDEM EOC model, the department heads communicate to their respective staff in the field. Coordination between staff occurs at the EOC level. The model does not address field coordination.

The ICS EOC model of the two localities (Falls Church City and Manassas Park City) is illustrated in Figure 7. A unified command structure is created to help coordinate the event. Based on the type of event, the team leader may be any one of the department heads. The EOC creates the ICS section chiefs and staffs the chiefs in the EOC. Each section chief coordinates requests from their field counterparts. In the event of multiple incidents, each section chief may coordinate requests from several field section chiefs.

**Figure 7 - ICS EOC Model**
5. What elements of other identified EOC staffing models/interface methods could be adopted by the City of Franklin to improve noted deficiencies in our current system?

Coordination among agencies and lack of clear incident objectives were two of the main problems with the City of Franklin's EOC model and field interface. Two of the localities (Falls Church City and Manassas Park City) used the ICS EOC model. In their model, a unified command was established among the department leaders. This allowed the EOC to develop clear objectives for the incident in a collaborative manner. In the ICS model, the field personnel are organized under the ICS. They communicate back to their counterparts in the EOC. Both localities rate their effectiveness as being above average. The fire, EMS, and law enforcement agencies in both localities use the ICS on a regular basis and therefore, are familiar with the system.

Based on input from those localities that use the ICS for their EOC model, it would be advantageous for the City of Franklin to adopt the ICS or modified ICS EOC model. All of Franklin's departments that staff the EOC are familiar with ICS and have expressed an interest to use ICS on a regular basis. As Wenger noted, some EOC staff objects to the ICS because of fear of loss of a command presence (1990). To lessen this fear, a unified command ICS EOC structure is recommended. An illustration of a modified EOC structure for the City of Franklin is included in Appendix B.

The research among similar sized localities in Virginia produced some interesting results. Most of the localities surveyed adopted the generic VDEM EOC model. Only two of the localities surveyed modified the model to their localities needs. Most of the people surveyed have used their EOC model in actual emergencies and are pleased on average with their effectiveness. However, most agree that additional
resources would help improve the operations. Although it was not intended to be part of this research, many of the localities’ emergency coordinators are part-time and must share emergency management functions with other assigned duties. Some interviewed stated that they believe that the emergency management position should be full time position, but most localities that are similar in size to the City of Franklin lack the financial resources to employ a full time emergency manager.

**DISCUSSION**

The problems that were identified by the City of Franklin post flood analysis matches closely to the Emergency Management Institute (EMI) research relating to managing emergencies. That is, problems relating to poor communications, inadequate training, lack of resources, poor operating procedures, and lack of personnel (Emergency Management Institute, 1993). Out of the 18 Virginia localities that were surveyed, 16 localities used the same EOC VDEM model that the City of Franklin initially used to manage the 1999 flood event. In addition, 13 out of 15 of the localities that used this model were satisfied with their effectiveness. According to the EMI ICS/EOC Interface Workshop manual (1993), EOC models similar to the VDEM EOC model are nationally recognized and used throughout the United States. Even though many localities use this model, it did not work well for the City of Franklin.

The difference in the City of Franklin's evaluation and the surveyed localities' evaluation of the VDEM EOC model may have a simple answer. The localities surveyed have not managed a major disaster similar in magnitude to the 1999 Franklin flood event. Therefore, the deficiencies in the VDEM EOC model may not have yet been discovered.
Traditionally, emergency management organizations have been highly centralized and directive with control placed in the hands of only a few individuals (Dilling, 1995). In fact, Dilling found that small jurisdictions with limited resources find a centralized system similar to the ICS more ideal. The research found that the Virginia localities surveyed do not reflect Dilling's findings. Out of 18 localities surveyed, 16 used the decentralized VDEM EOC model. However, Dilling also noted that the ICS EOC model works well in organizations with formal rules and standard operating procedures to help guide decisions. The ICS structure is found in localities with full time fire, EMS, and police departments. Most of the localities surveyed operate with volunteer fire and EMS agencies and with limited full time law enforcement agencies.

It appears that the City of Franklin's current EOC model and field interface is widely accepted in the emergency management field. Although the model has worked in the past on small incidents, the model did not work well during the 1999-flooding event. The ICS EOC model would be more advantageous to the City of Franklin operations. Since the 1999 flooding event, the Franklin EOC staff has worked to establish standard operating procedures and guidelines to support the EOC operations. The development of the procedures and guidelines has led to a more structured EOC. Dilling found that the ICS works better in a structured environment (1995). Wenger found some departments claim to use ICS, but during actual emergency or disaster operations, the plan is either ignored or is used in a very limited fashion (1990). The success of the any EOC model relies on the discipline to follow the procedures.

A unified command appears to be the best fit for the City of Franklin. Most communities think ICS is a fire department model and thus people think if they use ICS,
the fire department will always be in charge (Wenger, 1990). With a unified command at the EOC, department leaders share the decision making at the command level. However, research by Wenger found that a unified command was rarely used properly and the ICS system was particularly weak when dealing with integrating the activities of relief agencies and volunteers (1990). Training is an important task that must not be overlooked by the City of Franklin.

The ICS with a unified command is designed to assist in the coordination between various agencies. Rubin found that the first step is to separate egos from operations and then a “lead” agency is identified to be the commander and the representatives fit together in a comprehensive functioning team (1997). These issues must be addressed if the City of Franklin adopts the ICS EOC model. Initial and ongoing training must be established in order for the system to work. In research conducted by Henry, some command staff officers in the Montgomery County Fire and Rescue Department misunderstood the use of the ICS and thus did not properly use the system. Periodic ICS training was setup to help solve the problem (1999). Ullman also found the same to be true among law enforcement agencies. Training and frequent use of the ICS is a must to help guarantee that it will be used properly (1998).

Dilling warns that there is no guarantee that one EOC model that works well for one jurisdiction will work well for another jurisdiction (1995). ICS must have standard operating procedures that clearly define responsibilities. Lack of clear EOC staff roles and responsibilities will lead to frustrated staff and inefficiencies (Drabek and Hoetmer, 1991)
The City of Franklin EOC staff must be flexible when adopting any EOC model. Changes must be made to accommodate the mission of the EOC. As stated by Wenger, the question should not be “who is in charge” but “how is coordination to be maximized?”

RECOMMENDATIONS

The City of Franklin suffered many difficulties during the 1999-flooding event. Lack of coordination between agencies, unclear incident strategy and objectives, and poor understanding of the ICS were some of the problems identified.

To help solve future problems relating to managing emergencies, the City of Franklin should adopt the ICS EOC model. Since the 1999 flooding event, the EOC staff has worked to improve procedures and guidelines. Some of the staff have attended courses offered by the Virginia Department of Emergency Management (VDEM) on EOC operations and concepts of ICS. Therefore, there is a general effort among the EOC staff to improve the system through creating a more structured environment.

However, the EOC and city staff must follow through with additional training. The staff should take advantage of ICS courses offered by the Virginia Department of Emergency Management, Emergency Management Institute, and National Fire Academy. In addition to the EOC staff, all fire, EMS, police, public works, and electrical department staff should attend ICS courses and use the ICS on a daily basis. Of the localities that use the ICS EOC model in the original research, the fire, EMS, and law enforcement agencies use the ICS on a regular basis.
Resources were also found to be an issue, especially among small localities. The City of Franklin should seek to establish a partnership with surrounding localities to create an ICS overhead team. This overhead team could be used to staff the operations, planning, logistics, and finance positions in the EOC. In fact, further study should be done to find out if a regional EOC would be advantageous to the surrounding communities of Franklin, Southampton, and Isle of Wight.

Additional research is needed to address the emergency management needs of smaller localities. Most of the research found addressed localities larger than the City of Franklin. Some of the information found was also "theory" and had not been used in an actual large-scale emergency. More research is needed on practical applications especially relating to the EOC to field interface.
REFERENCES


Dilling, J.D. Command vs. coordination; optimal systems for EOC management ASEP Journal, 45-64 1995.


APPENDIX A- Survey

1. Have you ever declared a local emergency or activated your EOC?

2. If the answer to question one is yes, when was the date of your most recent local emergency or EOC activation?

3. How does your locality staff its EOC and how do they interface with the incident command system (compare your EOC and field interface model with the attached model and select the model that matches your localities)?

4. Do you use the incident command system in the to help manage resources from the EOC?

5. Which of the following departments are familiar on the use of the incident command system?
   - Fire
   - EMS
   - Law Enforcement
   - Public Works
   - City Administration
   - Department of Social Services

6. Which of the following departments uses the ICS on a regular basis
   - Fire
   - EMS
   - Law Enforcement
   - Public Works
   - City Administration
   - Department of Social Services

7. On a scale 1 – 5 (5 being the best, 1 being the worst), gauge the effectiveness of your EOC staffing model and field interface?

8. What elements of your EOC staffing model and field interface could be changed to improve deficiencies in your current system?
Addendum to Question #8 - EOC Models - Choose the model that matches your localities EOC and field interface model. Make changes to the chart to accurately reflect your localities EOC model and field interface.

**Example 1 - VDEM Model**

**Example 2 - ICS Model**
### Summary of Survey Results

<table>
<thead>
<tr>
<th>Locality</th>
<th>Cord. Position</th>
<th>Fire/EMS Services</th>
<th>Question Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emporia Cty.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>3</td>
</tr>
<tr>
<td>Bedford Cty.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>4</td>
</tr>
<tr>
<td>Covington Cty.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>3</td>
</tr>
<tr>
<td>Buena Vista Cty.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>3</td>
</tr>
<tr>
<td>King &amp; Queen Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>4</td>
</tr>
<tr>
<td>Surry Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>5</td>
</tr>
<tr>
<td>Galax Cty.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>2</td>
</tr>
<tr>
<td>Lexington Cty.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>3</td>
</tr>
<tr>
<td>Bland Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>2</td>
</tr>
<tr>
<td>Charles City Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>3</td>
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<tr>
<td>Rappahannock Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>3</td>
</tr>
<tr>
<td>Richmond Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
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<tr>
<td>Cumberland Co.</td>
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<td>Volunteer</td>
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</tr>
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<td>Mathews Co.</td>
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</tr>
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<td>Middlesex Co.</td>
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<tr>
<td>Essex Co.</td>
<td>Part-time</td>
<td>Volunteer</td>
<td>4</td>
</tr>
<tr>
<td>Manassas Park Cty.</td>
<td>Part-time</td>
<td>Comb.</td>
<td>3</td>
</tr>
<tr>
<td>Falls Church Cty.</td>
<td>Part-time</td>
<td>Comb.</td>
<td>3</td>
</tr>
</tbody>
</table>
**Survey Summary**

1. Have you ever declared a local emergency or activated your EOC?
   - Yes 17
   - No 1

2. If the answer to question one is yes, when was the date of your most recent local emergency or EOC activation?
   - < 1 years = 2
   - < 3 years = 3
   - < 5 years = 10
   - < 10 years = 2
   - None = 1

3. How does your locality staff its EOC and how do they interface with the incident command system?
   - VDEM model = 16
   - ICS model = 2

4. Do you use the incident command system in the to help manage resources from the EOC?
   - Yes 4
   - No 14

5. Which of the following departments are familiar on the use of the incident command system?
   - **Fire**
     - (Yes 4, No 14)
   - **Public Works**
     - (Yes 0, No 18)
   - **EMS**
     - (Yes 4, No 14)
   - **City Administration**
     - (Yes 1, No 17)
   - **Law Enforcement**
     - (Yes 3, No 15)
   - **Department of Social Services**
     - (Yes 0, No 18)
6. Which of the following departments uses the ICS on a regular basis

- **Fire** (Yes 4, No 14)
- **EMS** (Yes 3, No 115)
- **Law Enforcement** (Yes 2, No 16)
- **Public Works** (Yes 0, No 18)
- **City Administration** (Yes 0, No 17)
- **Department of Social Services** (Yes 0, No 18)

7. On a scale 1 – 5 (5 being the best, 1 being the worst), gauge the effectiveness of your EOC staffing model and field interface?

- 5 = 2
- 4 = 3
- 3 = 11
- 2 = 2
- 1 = 0

8. What elements of your EOC staffing model and field interface could be changed to improve deficiencies in your current system?

- More personnel/resources = 9
- None = 5
- More accountable or involved people = 2
- Needs changing, not sure what parts = 2
Localities Surveyed

(Franklin City added for population comparison)

<table>
<thead>
<tr>
<th>#</th>
<th>Locality</th>
<th>Population</th>
</tr>
</thead>
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<td>Bedford city</td>
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<td>3</td>
<td>Covington city</td>
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<td>4</td>
<td>Buena Vista city</td>
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<td>King and Queen Co.</td>
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<td>Middlesex Co.</td>
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<td>Essex Co.</td>
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<td>18</td>
<td>Manassas Park city</td>
<td>10,290</td>
</tr>
<tr>
<td>19</td>
<td>Falls Church city</td>
<td>10,377</td>
</tr>
</tbody>
</table>
APPENDIX B - RECOMMENDED EOC AND FIELD INTERFACE MODEL

EOC Staffing

Unified Command

City Manager
EM Coordinator (Team Leader)
Police Chief
Public Information Officer
Public Works
Electric Department
City Attorney
Deputy Fire Chief

Operations Section
Planning Section
Logistics Section
Finance Section

Field Staff

Fire/Rescue/EMS
Law Enforcement
Engineering
Utilities

Situation Status
Resource Status
Legal

Technical/
Personnel
Human Services

Cost
Time
Claims