

MASS GATHERING PRE-INCIDENT PLANNING.

Executive Analysis of Fire Service Operations in Emergency Management

Mass Gathering Venues: Identifying Key Components to a Pre-Incident Plan to address the new

Dallas Cowboys Stadium.

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Abstract

The Arlington Fire Department (AFD) has not developed a Pre-Incident Plan (PIP) to deal with a large scale incidents involving mass gathering venues. Descriptive research was used to identify department/industry standards and recommendations regarding key components. This was accomplished through literary reviews of standards, articles, interviews, and a feedback instrument.

The research questions asked for information regarding pre-incident planning as it relates to historic events in mass gathering venues, essential components of a PIP, a comparison of other departments with mass gathering venues, NFL policy regarding emergency service delivery and, current AFD policy. The results did provide recommendations for the development of a plan to address incidents in mass gathering venues.

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Introduction

The Arlington Fire Department (AFD) has always done an excellent job of providing the organization with clear guidelines that address administrative and tactical considerations. The problem is that the AFD has not developed a pre-incident plan (PIP) to deal with a large scale incidents involving mass gathering venues. The lack of a plan could be putting the department at risk for being unprepared for the new Dallas Cowboys Football Stadium. The purpose of this research is to identify key components associated with an emergency response and mitigation plan to address mass gathering venues that will also provide a foundation for the development of a pre-incident plan (PIP).

Descriptive research was used to “describe a current situation and to study current policies and procedures to develop a recommendation for change in the future” (National Fire Academy [NFA], 2004, p. 4-17).

This applied research project will address the following questions:

- a) What information has history provided the fire service in the area of Pre-Incident Planning associated with mass gathering incidents?
- b) What components are essential in developing a mass gathering Pre-Incident Plan?
- c) What do departments with similar venues do to plan for mass gathering incidents?
- d) What guidelines does the NFL have in developing an Pre-Incident Plan to respond to an NFL sponsored event?
- e) What policy does the Arlington Fire Department currently have in place to address pre-incident planning involving mass gathering venues?

Background & Significance

The City of Arlington is an urban community located in the heart of the metroplex between Dallas and Fort Worth in North Central Texas. Arlington is the home of the Texas Rangers baseball club, Six Flags over Texas and, Hurricane Harbor Water Park. In 2001, the city entertained over 6.8 million visitors at those and many other attractions (City of Arlington [COA], 2005, p. 11). Estimates show that in 2006, the city occupied over 100 square miles and has a population over 364,000. (North Texas Council of Governments [NTCOG], 2006).

The AFD is a career department with 498 members staffing 16 fire stations utilizing a 24/48-shift schedule. The department provides fire protection, emergency medical, hazardous material, technical rescue, swift water, explosive ordinance disposal (EOD) and fire prevention services within the city limits and mutual aid to six cities that borders its city limits. In 2006 the department responded to over 35,000 calls for service.

In May of 2005, voters overwhelmingly approved a sales tax hike that would pave the way for the new Dallas Cowboys stadium to be built in Arlington. Construction began in January of 2006 with the Cowboys slated to play their 2009 regular season in the new stadium. The projected cost of the stadium is one-billion with another one-billion being spent in economic development around the stadium. In May of 2007, the NFL owners awarded Super Bowl forty-five to the Dallas Cowboys franchise and the city of Arlington. That game will be played in February of 2011.

The new stadium will have a capacity of one-hundred thousand and will provide an outdoor and indoor experience through a retractable dome. The development around the stadium will house other entertainment venues including a retail shopping complex that will join the Rangers Ball Park in Arlington with the new Dallas Cowboys stadium. The city has already

dubbed the area around the stadiums the “entertainment district” and has included this area in several master planning grants to enhance safety and security. Once in operation, this stadium will be the largest in NFL history.

Although the city has enjoyed the Texas Rangers Baseball franchise since the early 1970’s, it has yet to experience the hype that a team like the Cowboys can create and the influx of people that will surely flock to the area year around. The stadium coupled with the retail shops and other entertainment venues should eventually provide the city with a huge economic boom. It will also provide an influx of visitors that will test the cities master planning capabilities. Unfortunately, it could also present the Arlington Fire Department with a challenge to keep all of those people safe and or treat them in the event of a natural or man-made emergency.

The challenge for the Arlington Fire Department will include how to deliver emergency services to one-hundred thousand or more people in the event of a mass gathering incident. While each potential situation will be hard to predict and even harder to communicate in a plan, the development of an all-hazards outline using known information and a predetermined strategy that addresses the venue should provide a solid foundation from which to start.

This applied research project related to one of the United States Fire Administration (USFA) Operational Objectives “to respond appropriately in a timely manner to emerging issues” (National Fire Academy Executive Fire Officer Program Applied Research Self Study Course [NFA EFOP ARSSC], 2004, p. 3-4).

Literature Review

The purpose of this literary review is to identify key components associated with a pre-incident plan to address mass gathering venues which in turn can provide a foundation for the

development of a plan for the new stadium. The review includes the findings of other researchers in the fire service, public and private sectors along with industry standards. The literature provided information pertaining to all facets of mass gathering pre-incident planning. The literary review was organized around five specific research questions that were developed to help facilitate answers about the research topic. Those questions included: a) What information has history provided the fire service in the area of Pre-Incident Plans associated with mass gathering incidents? b) What components are essential in developing a mass gathering Pre-Incident Plan? c) What do departments with similar venues do to plan for mass gathering incidents? d) What guidelines does the NFL have in developing an Pre-Incident Plan to respond to an NFL sponsored event? e) What policy does the Arlington Fire Department currently have in place to address pre-incident planning involving mass gathering venues?

a) What information has history provided the fire service in the area of Pre-Incident Plans associated with mass gathering incidents?

Research found that on July 20, 1993, a fire broke out at the Atlanta Fulton County Stadium in Atlanta Georgia in a food service warmer and spread to other press and private luxury suites. Again on October 13, 1993, another fire broke out in an older section of luxury suites at Texas Stadium in Irving Texas. Both fires occurred when the stadiums were largely unoccupied and no one was injured but, research found that significant challenges awaited firefighters as they worked to contain the fires.

This author discovered that both fire departments identified “room contents, furnishings, and interior finishes provided a significant fuel load that can support a substantial fire” (Isner, 1994, p. 54). It was also determined that “the fires burned for an undermined amount of time before they were discovered, allowing them to become quite large” (p. 54). Research also found

that according to the National Fire Protection Association [NFPA] (1993) and their report, *Two Stadium Fires*, they established:

Most of the factors that contributed to these fires can be mitigated if the new stadiums designers, builders, and local jurisdictions follow the requirements of current codes, such as the 1992 edition of NFPA 102, *Standards for Assembly Seating, Tents, and Membrane Structures* (p. 14).

The report also stressed the importance of tactical plans created to address potential problems in advance of an incident. In both stadium fires the NFPA found “other factors that fire departments might consider in their tactical plans for stadium suite areas is the physical arrangement of the stadium and the accessibility that fire fighters have to a potential fire area” (p. 14). The report indicated that in the Texas Stadium fire, fire fighters were able to easily attack the fire from the field, which was not the case in the Fulton County Stadium fire. The NFPA also stressed “fire fighters should pre-plan ways to minimize setup time” (p. 14).

These findings led this author to Assistant Chief Rusty Wilson from the Irving Fire Department for more details about the incident. Research found that Chief Wilson indicated that there really was no historical information regarding the fire. Chief Wilson stated “there was no post incident analysis done after the fire” (personal communication, June 14, 2007). He went on to say that “most of the information pertaining to the incident was sheltered from the public”.

Research uncovered information pertaining to the 1993 bombing of the World Trade Center from, *The World Trade Center Bombing: Report and Analysis USFA-TR-076*. In that document research indicates that the NYC*EMS had a MCI pre-plan in place with its stated goal “to identify and develop response plans for MCIs at locations with above-average potential for their occurrence, such as transportation hubs, high-occupancy locations, and hazardous-materials

storage sites” (United States Fire Administration [USFA], 1993, p.68). It also pointed out that “Our Emergency Medical Action (disaster) Plan is activated when an incident produces more than five patients or exceeds the capabilities of a two-ambulance response” (p. 68). The report stresses the importance of using the incident command structure early in an incident as it “allows it to be readily integrated with the unified interagency command structure at any type of emergency” (p. 71). The lessons learned section provided an extensive list of items that is significant to this research (Appendix A). That section also pointed out:

Through the use of a well-exercised ICS; written and practiced operational and mutual-aid plans; site-specific plans for sensitive locations such as shopping malls, sports arenas, and transportation hubs; and plans for massive casualty distribution, the impact of a terrorist event on any community and its emergency response forces will be significantly reduced (pp 76-77).

This author discovered that in the report, *Alfred P. Murrah Federal Building Bombing – After Action Report*, The Oklahoma Department of Civil Emergency Management determined that “the Integrated Emergency Management System (IEMS) and the Incident Command System (ICS) were weakened early in the event due to the immediate response of numerous local, state and federal agencies” (The Oklahoma Department of Civil Emergency Management, n.d. p. 40). This finding was similar to the recommendation identified by FEMA in the report *Responding to Incidents of National Consequence FA 282*. Research found that FEMA (2004) identified a recommendation under the initial response section calling on departments to consider “developing a policy to control requested and non-requested resources and eliminate freelancing of public safety resources” (p. 19).

Research into the terrorist attacks of September 11, 2001 found the importance of pre-incident planning in the recommendation section from the FA 282 report. In reference to the events of 911, the report determined that Arlington County Fire Department [ACFD] “did not have detailed structural drawings of the Pentagon available or access to any building engineers” (p. 31). The fact that this information was not available is identified as a major factor in the mitigation of that incident. The recommendations section of the report would conclude that “departments should have building details with hazards pre-identified and site drawings available at the incident to provide responders with critical and accurate information” (p. 32). FA 282 also provided a list of nine issues and corresponding recommendations in response to the terrorist attacks of September 11, 2001 in the area of awareness, prevention and preparedness (Appendix B).

b) What components are essential in developing a mass gathering Pre-Incident Plan?

Research found that NFPA 1620, *Recommended Practice for Pre-incident Planning*, defines a pre-incident plan as “a document developed by gathering general and detailed data used by responding personnel to determine the resources and actions necessary to mitigate anticipated emergencies at a specific facility” (National Fire Protection Association [NFPA], 2003, p. 1620-6). It was also discovered that under the administrative section it stresses “pre-incident planning in an assembly occupancy should involve not only the emergency responders, but should also administrators, event supervisors, and other staff members” (p. 1620-15). This author also found a list of items that the NFPA considers as “factors that should be evaluated when assessing the potential situations that could affect a facility during emergency conditions” (p. 1620-7). The NFPA’s list includes:

- Construction

- Occupant characteristics
- Protection systems
- Capabilities of public or industrial responding personnel
- Availability of mutual aid
- Water supply
- Exposure factors

That finding led to the publication from the National Fire Protection Association, *Fire Officer Principles and Practice's*. The pre-incident plan section establishes “when a fire officer is assessing the potential situations that could affect a facility during emergency conditions, the following factors needs to be evaluated” (National Fire Protection Association [NFPA], 2006, p. 216). It goes on to establish a similar list of factors including:

- Construction
- Occupancy characteristics
- Fire Protection systems
- Capability of public or industrial responding personnel
- Available of mutual aid
- Water supply
- Exposure factors
- Access
- Utility cutoff locations

The chapter goes on to say “today’s pre-incident plans often include information that could apply to a variety of potential situations that could occur at the location” (p. 215). It also establishes

“since 2001, many jurisdictions and businesses have included potential terrorist activities in pre-incident planning” (p. 215).

Research also found that in his book *Fire Command*, Alan Brunacini establishes that the pre-incident plan is an important part of the situation evaluation and “is a major information-management support item during the initial and ongoing evaluation phase is the pre-incident plan” (Brunacini, 2002, p. 107). He also stresses “most fire departments perform these planning activities as part of a structured program that includes touring significant occupancies and hazards (target hazards)” (p. 107). He also concluded “pre-incident planning arms the IC and the response team with facets and details that are often almost impossible to acquire during an actual event” (p. 107). Brunacini also provides a more general list of factors that should be consider and suggests “completing the checklist also provides a standard way to determine the tactical significance of an occupancy” (p. 108). His list includes:

- Size
- Access and Arrangement
- Hazard
- Built-in Protection

Brunacini also establishes a list of pre-incident plan considerations. His list of considerations includes:

1. What factors are present?
2. What does IC need to know to be effective?
3. What factors can be seen from the command post?
4. What serious problems can be caused by the unseen factors (hazards)?

Brunacini (2002) establishes “answering these questions at the beginning of the pre-incident plan process may change the selection of the building/areas that deserve a plan” (p. 110).

Research also found that Brunacini established the importance of an incident action plan (IAP) and that the IC should remember “to create effective, quick, correct action, the Incident Commander must “cut through” a lot of confusion, uncertainty, and danger” (p. 219). He describes how the IC uses the IAP as “the incident strategy to determine the right place(s) to operate and then develops the IAP to describe the correct action that matches and takes control of the incident conditions, within the basic overall strategy” (p. 219). He goes on to explain “how the organization develops a strategic and tactical management system and then “preloads” a standard decision-making approach (philosophy) ahead of time to assist the IC and the operational/command team” (p. 221). He also establishes “having such a basic overall strategy and a matching tactical action plan that can be connected to actual incident conditions loaded into the system ahead of the event, provides a huge head start when show time is fast and dirty” (p. 219).

That research led this author to Kreis and his article *incident action plans*. In that article Kreis (1999) established “an IAP formalizes the incident action plan process” (p. 64). He went on to say “An IAP should be developed whenever command is established and it should be evaluated, reviewed, and refined throughout the incident” (p. 66). He went on to establish that “an IAP provides the IC with a clear focus of what is expected to happen before assigning units” (p. 66). He concluded “using an IAP will help the IC to maintain uniform decisions based on the strategic plan” (p. 70).

These findings led this author to writings by Bachman who stressed the importance of pre-incident intelligence and facility orientation as important steps in the pre-incident size up.

Bachman would also establish the importance of “pre-incident intelligence includes understanding how a facilities orientation will influence emergency operations and identifying natural and man-made hazards that will affect operations including access and apparatus placement” (Bachmann, 2002, p. 89). Research also discovered information from Tony Vasquez, Executive Assistant, Office of Fire Commissioner for the Chicago Fire Department. Vasquez (personal communication) states “The CFD develops plans using the latest intelligence...this critical variables can make a difference” (July 20, 2007). Research also found that Bachman establishes “it (pre-incident size-up) includes analyzing existing factors and conditions and anticipating potential situations” (p. 89).

This author also found that in the research for his EFO paper, Siarnicki (1999), found that the City of Jacksonville Florida NFL stadium complex recognized “the need to determine pre-event public safety personnel assignments” as a key point to a stadium operational plan (p. 16). Research also found that according to Leonard (2001), “at a minimum, four paramedics should be dedicated for every 10,000 attending the event” (p. 58). He went on to explain “if you expect an increase in patients above the ordinary, further assistance by backup personnel should be scheduled or easily available” (p. 58). Leonard goes on to say “forethought is the key to adequate preparation of an EMS response to a mass gathering” (p. 59). Leonard also establishes the importance of patients prior to the incident and asserts “being able to accurately estimate the number of potential patients needing treatment during an event provides the framework of emergency planning” (p. 55). He also writes “preparing for approximately 1% (of the total number attending the event) should ensure adequate staffing and supplies” (p. 55). He concludes “most potential problems can be predicted and avoided with specific knowledge of the event and patient care issues” (p. 59).

These findings led this author to research performed by De Lorenzo, Gray, Bennett and Lamparella on the effect of crowd size on expected patient volume at mass gathering events. That research established “The comparison of patient frequency for each event type indicates that the number of patients seen by on-site medical personnel is not primarily a function of event population with the range of population encountered” (De Lorenzo et al., 1988, p. 383). They went on to conclude “these findings suggest that expected crowd size should not be the sole basis for planning medical coverage, even within a single event type” (p. 383-384).

Other research found stresses the importance of EMS pre-planning in a similar fashion to a fire pre-incident survey. Krebs (2001) establishes “such planning is beneficial for any type of unusual or special event and should begin as soon as your agency is notified” (p. 16). The research went on to conclude “many jurisdictions require permits for any large gatherings....make sure your agency is on the notification list when permits are issued” (p. 16).

d) What guidelines does the NFL have in developing an Incident action plan to respond to an NFL sponsored event?

Research found information from Ben Nix, NFL Security Representative - Dallas. According to Nix (personal communication) “the NFL currently has no guideline on the type or amount of emergency service delivery equipment or personnel needed at a NFL game” (August 30, 2007). Nix went on to explain that the NFL does not care what each franchise provides for emergency service delivery that is up to the franchise.....the only time the NFL provides guidance on the type and amount of equipment is during NFL sponsored events such as the super bowl and the playoffs (B. Nix, personal communication, August 30, 2007). He also established “in those instances, that NFL only cares that those services are provided and even then does not govern how many and of what type” (B. Nix, personal communication, August 30, 2007). He

also explained, “as for the current stadium, the cowboys only require a medical team on the field, in the lower deck and one on the upper deck” (B. Nix, personal communication, August 30, 2007). He also stressed that the NFL provides no incident action plan to address emergency service delivery.

These findings led to research provided by Manny Morin, Managing Director for the new Dallas Cowboys stadium in Arlington. Morin (personal communication, August 14, 2007) stated “the Dallas Cowboys have yet to decide the amount and type of equipment or personnel needed for the new stadium on any given day”. He went on to say “in Texas Stadium, the Cowboys current venue in Irving, around four ambulances and an engine company are at every game” (M. Morin, personal communication, August 30, 2007). He went on to say that this may not be the same complement that is required at the new stadium. He did reiterate that as far as he knows, the NFL provides no mandates to each franchise on this issue (M. Morin, personal communication, August 30, 2007). He also stressed that the Cowboys do not have any pre-incident plan to address this issue.

e) What policy does the Arlington Fire Department currently have in place to address pre-incident planning involving mass gathering venues?

Research found the department currently has in place SOP 103.30 *Pre-Incident planning* (Appendix C). The purpose of the policy is said “to familiarize Fire Department personnel with the building layout, the hazards and sources of potential danger, or other unusual features in a structure or complex” (Arlington Fire Department, 1996, p. 1). The policy also states “a pre-incident plan consists of four steps: information gathering, information analysis, information dissemination, and formulation of operational plans” (p. 1). The next two pages of the policy provide information on the contents of the four steps of a pre-incident plan.

Research also found that the department also provides SOP 201.01 *Incident Command System*, which appears to provide the organization with a comprehensive policy (Appendix D). The policy establishes “Members of the Arlington Fire Department and Arlington Emergency Medical System (AEMS) shall use the Incident Command System (ICS) at every emergency medical incident and training system” (Arlington Fire Department, 2006, p. 1). The policy also mandates the creation of an incident action plan as one of the responsibilities of a relieving incident commander. It goes on to establish procedures for:

- Establishing command
- Command responsibilities and functions
- Transfer of command
- Roles and responsibilities of the command officers

Research did not uncover any existing Pre-Incident Plans or Incident action plans that addressed the Ranger Ball Park or Six Flags Over Texas.

Summary

This research papers purpose was to focus on identify key components associated with an emergency response and mitigation plan to address mass gathering venues that can provide a foundation for the development of a pre-incident plan. This author is confident that the research cited contains significant findings and has identified key components that will translate into recommendations for the development of a PIP.

Procedures

Research began at the National Fire Academy’s Learning Resource Center (LRC) in Emmitsburg Maryland on March 11, 2007. The STAR card catalog system helped this author find articles from fire and emergency service periodicals, technical references, other EFO papers,

and current fire service standards encompassing multiple topics on mass gathering venue pre-incident planning. The search included using the key words stadium fire, mass gathering venues, NFL, football, pre-incident planning, World Trade Center, Oklahoma City bombing and, pre-incident planning to produce a literature reference list. Other information was collected from Arlington Fire-Rescue documents including historical information from the department's historical archives.

This author also conducted interviews with Tony Vasquez, Executive Assistant Office of Fire Commissioner for the Chicago Fire Department on July 20, 2007, Ben Nix, NFL Security Representative – Dallas on August 30, 2007 and, Manny Morin, Managing Director for the new Dallas Cowboys stadium in Arlington on August 14, 2007. This author selected these contributors because of their expertise on the subject matter. The interview with Vasquez took place by e-mail while interviews with Nix and Morin took place over the phone and were scheduled prior to the actual interview taking place. The "Conducting Interviews" Section of the *EFOP Applied Research Self-Study Course* provided guidance when interviewing these subject matter experts. Each was asked key questions specific to their areas of knowledge.

The feedback instrument was used to solicit feedback from departments that possess similar mass gathering venues (Appendix E). The purpose of the feedback instrument was to gain information on how other departments have planned for incidents involving their mass gathering venue and to help develop a list of critical components that could be part of Arlington's pre-incident planning. The feedback instrument was developed using questions that would help this author not only address the research question but would also help to determine what others used to develop their guideline.

The sample size was determined by using demographic guidelines based on cities that possessed an NFL franchise/stadium. That criteria produced a sample framing of 34 departments. The goal was to solicit information from cities with mass gathering venues similar to the one being constructed in Arlington. The instrument was addressed to the Chief of the Department in hopes that he/she would use the appropriate resource within their department to complete it. The cover letter and feedback instrument was sent out to potential respondents on July 15, 2007.

The definition of descriptive research is “the collection of data to answer questions concerning the current status of the subject of the study” and the focus is “on determining and reporting the present status of something to clarify and report on the way things are at the present time” (National Fire Academy Executive Fire Officer Program Applied Research Self-Study Course [NFA EFOP ARSSC], 2004, p. 14).

Limitations

Limitations placed on this research included the type of mass gathering venue that was targeted for the feedback instrument. Because the main focus of the research was the new Dallas Cowboys stadium, this author felt that cities with NFL teams/stadiums should be the only ones to receive the feedback instrument.

Other limitations were imposed on the type of research cited in the literature review. There is very little research on sports mass gathering venue incidents. However, the research cited does provide useful information on the lessons learned from several significant incidents involving large numbers of people and the unique circumstances surrounding those incidents.

Results

- a. What information has history provided the fire service in the area of pre-incident planning associated with mass gathering incidents?

Research found several large incidents involving mass gathering venues that have provided the fire service with valuable insight into the problems that are unique to these venues. Although most of this historical research includes non-sports venues, the lessons learned does provide valuable findings that can be applied to this research. Those incidents include the 1993 Atlanta Fulton County stadium fire, the 1993 Texas Stadium fire, and the 1993 World Trade Center bombing, the 1996 Alfred P. Murrah Federal Building bombing, and the terrorist attacks on the World Trade Center in 2001.

The historical information associated with the two stadium fires does provide this author with findings on the challenges that faced other fire departments and what was learned because of those challenges. Although both baseball stadiums were unoccupied in 1993, it is not impossible to imagine the challenges those fire departments would have faced had they been full of fans. Research did find that the number one challenge was the lack of a pre-warning to fire fighters and that allowed the fire to rage, undetected, prior to the notification of the fire department. It also established that the lack of a pre-established plan on firefighting tactics related to the Atlanta stadium hindered fire fighting efforts.

Information gathered also determined that the creation of a tactical plan could have addressed potential problems far in advance of the incidence. The research did support the ability of fire fighters to predict the arrangement of the stadium and its accessibility as important steps in pre-incident plan process. This fact played a role in both fires and was cited as a way to minimize set up times by fire departments.

Research associated with the 1993 World Trade Center bombing established the importance of developing MCI pre-incident plans associated with occupancies having above-average potential. It established the importance of an early and aggressive unified command structure. It also supported a clear-cut plan that established benchmarks for activation based on an expanding mission. It also identified the importance of a well exercised incident command structure and the development of a all-hazards plan as a way to significantly reduce the impact of a terrorist event.

The after action report of the Alfred P. Murrah Federal Building Bombing clearly established the importance of the IEMS and the ICS as critical links to the integrity of an incident. It also established the importance of including, in any pre-incident plan, a way to control the flow of requested and non-requested resources as a critical step in the process.

The after-action report on the terrorist attacks of September 11, 2001 also established the importance of a PIP. It was established that the lack of pre-incident information was a major factor in the mitigation of the Pentagon incident. The information found did provide a list of nine items recommendations in response to issues encountered that can be considered as key components to the development of a PIP.

b. What components are essential in developing a mass gathering Pre-Incident Plan?

The research established the definition of pre-incident planning as a document developed by gathering data to determine resources and actions necessary to mitigate an incident. The importance of pre-incident intelligence to the ICS was emphasized throughout the research. It was also established that the gathering of that information should involve a wide array of people all of which possess a different level of information about the venue and that this process should start as soon as the department is notified of the event.

Research presented several lists of factors that should be evaluated when developing a PIP. Although those factors differed from author to author, the research did determine that the lists should be considered as similar in scope. It was also established that pre-plan should be applied to different situations and that terrorism should also be considered in the plan.

Research from Brunacini established the importance of the PIP as a support item during the initial and ongoing evaluation phase. It was also established that a PIP provides the response team with different details that can only be acquired prior to the incident. This research also established a list of factors that can aid in determining the tactical significance of an occupancy and a list of questions that, depending on the answers, may also alter the planning process.

Other research from Brunacini established the importance of an incident action plan (IAP). The research established that the Incident Command can use the IAP to cut through the confusion and uncertainty of an incident. It also stresses the importance of using the IAP to match the correct action and pre-exist building information with the incident conditions to provide a huge head start of the incident.

More research found on IAP's established the importance of a dynamic IAP during an incident. It was also stressed that an IAP will help the Incident Commander make uniform decisions based on the strategic plan. Other research also established the importance of pre-incident intelligence as a tool used in the IAP.

Other research established the importance of the number of personnel at a mass gathering event. It was established that 4 paramedics per 10,000 attendees is considered as a starting point. On top of personnel it was also established that a plan should consider potential patients during development. Although there was research that indicated a number of 1% of the total number of

people attending as a good starting point of predicting potential patients, there was also research that established there was no good way to predict patient volume.

c. What do departments with similar venues do to plan for mass gathering incidents?

A sample framing of 34 feedback instruments were sent out for completion. The sample framing produced a sample size of 16 or 47% return over a six-week period. It was determined through the feedback instrument that out of the sixteen returned, four or 25% of the departments did not have any kind of pre-incident plan to deal with their mass gathering venue while twelve or 75% of the departments did.

Out of the four departments without a pre-incident plan, all four would be what this author considered “large departments”. Those four had average department strength of 732 and an average population of 455,000.

Question five asked, “What, if anything, caused your department to develop this PIP?” Three (27%) indicated their plan was in response to a large high profile event, six (54%) indicated theirs was in response to prior planning or a change in mass gathering venue planning, two (18%) did not provide an answer to the question.

Question six asked, “How long has your PIP been in effect?” Three (25%) indicated that their policy had been in effect anywhere from 2-5 years, three (25%) indicated theirs had been in effect for 10 years, one (8%) indicated theirs had been in effect for 15 years and, two (16%) had been in effect for 20+ years. There were three (25%) that did not provide an answer to the question.

Question seven asked, “Has there been any updates to the PIP?” Twelve (100%) indicated that there has been some sort of an update to their pre-incident plan that addressed their mass gathering venue. The second part of the questions asks “if yes, what caused the changes?” Six

(50%) indicated the update occurred through some sort of normal process identified through their department. Three (25%) indicated that their changes took place in response to new events with one of those indicating that their changes with each event at the venue. One (8%) indicated that theirs was in response to a new venue being constructed. Two (16%) did not provide an answer to the second part of the question.

Question eight asked, “Does your PIP include recommendations from any recognized industry standard(s)?” Five (41%) cited NFPA, NIMS, UFC, UBC and, OSHA as the industry standards included in the process. Out of those, two also added that local codes or ordinances also went into the development of the plan. One (8%) also indicated that they used historical data to alter the plan along with the expected crowd size combine with the national threat level. Six (50%) did not provide any answer to the question.

Question nine asked, “What do you consider to be some key components in your PIP?” Nine (75%) did provide some things that they considered as key components. Three (25%) did not provide an answer to the question. The 75% provided the following components:

- A communications plan
- Detailed mapping of site
- NIMS
- Interoperability
- Prescribed resources
- Tactical policy to support strategy
- Predetermined assignments
- Flexibility
- A traffic plan

- Command and Control considerations
- Staffing
- Contact information
- Pre/Post event meetings

Question 10 asked “Would you please include a copy of your plan along with your survey?” Five (41%) of the department did provide varying versions of the plans/policies that addresses their mass gathering venues. They included SOPs, incident action plans, pre-incident plans and operational plans. Most departments did explain that their detailed IAP’s were confidential and did not allow the public to view them. Minneapolis and Chicago were two that did share their plans but, asked that I not share details in this research. Chicago’s Taste of Chicago incident action plan appeared to be the most detailed and provided an excellent template. (Appendix F).

d. What guidelines does the NFL have in developing a Pre-Incident Plan to respond to an NFL sponsored event?

Research did establish that neither the NFL nor the Dallas Cowboys have any type of “canned” plan to address emergency service delivery in either the current or future Dallas Cowboys stadium. It was also established that neither entity requires any sort of response although research did show that the current stadium may have some sort of plan that provides for a certain medical presence at different levels of the stadium. Research also established that as of right now, the Cowboys have yet to decide on any sort of pre-incident plan or canned staffing plan to deal with the new stadium.

e) What does the Arlington Fire Department currently have in place to address incidents involving mass gathering venues or patients?

The research did establish that the department does have a policy, SOP 103.30 *Pre-Incident planning*, that defines a set of department's guidelines for pre-incident plans. The research found that the policy does give the organization a good foundation for a traditional pre-incident plan. Information also found that the department does not have a PIP for the current mass gathering venues within the city. The department also provides SOP 201.01 *Incident Command System*. This policy provides the organization with a detailed guideline on the department's incident command system and the responsibilities associated with each function. The policy is very detailed and also mandates the creation of an incident action plan as part of the establishing command.

Discussion/Implications

This author put more emphasis on the results of the feedback instrument than any of the other research. That feedback provided the most significant information and also provided clarity regarding the usefulness of the incident action plan. Although the sample framing could have been better, this author feels that the participants did provide this research with significant contributions. It was also impressive that 75% of the departments did have some sort of plan to deal with their mass gathering venue.

Another interesting fact about the feedback instrument was that out of the four departments without a plan to address their venue, all four are what this author would consider as "large departments". Those departments have an average strength of 732 and an average population of 455,000. This is interesting only because since 911, this author would have thought those would have a detailed plan from which to work.

It was intriguing to see that 27% of the departments developed their plan in response to a large high profile event. This author compares that to Arlington hosting the super bowl in 2011.

This should also provide the department with a head-start on our plan and time to work out kinks prior to 2011.

Research found on each department with a plan and the number of years it has been in force did not yield much information. Although over 75% responded to the question, the results did not provide the number of years that the department might have been responsible for responding to their mass gathering venue. It is interesting that the results from question six did coincide with question five in that 81% also responded that their plan was either in response to a large high profile event or was in response to prior planning or a change in their mass gathering venue planning.

Information found on updates associated with PIP's did yield a 100% response indicating that each department has updated their plan. The second part of the questions solicited information on why they updated it. What was interesting was that 25% indicated that they updated their plan in response to new events. This loosely compares to information found from Tony Vasquez, Executive Assistant Office of Fire Commissioner for the Chicago Fire Department. Vasquez (personal communication) stated that "The CFD develops plans using the latest intelligence...this critical variables can make a difference" (July 20, 2007). Although the question did not lend itself to more elaboration, this author believes that this may reinforce the notion that any plan should be fluid and include the most recent intelligence in order to be effective.

The feedback instrument did provide information on recognized standards with 41% of the departments citing NFPA, NIMS, UFC, UBC and OSHA as all having part in the content of their plans. This author was not surprised by this result and fully expected this outcome. 40% of those also indicated that local ordinances also contributed to the plan. In an interesting turn only

one, the Green Bay Fire Department, indicated that they used historical data to alter their plan in conjunction with expected crowd size and the national threat level. The use of historical data and expected crowd size compares to information found by Siarnicki (1999), who found that the City of Jacksonville Florida NFL stadium complex recognized “the need to determine pre-event public safety personnel assignments” as a key point to a stadium operational plan (p. 16). It also compares to research from Leonard (2001) who stressed “at a minimum, four paramedics should be dedicated for every 10,000 attending the event” (p. 58). That research went on to contribute “if you expect an increase in patients above the ordinary, further assistance by backup personnel should be scheduled or easily available” (p. 58). Leonard also establishes the importance of estimating potential patients prior to the incident and asserts “being able to accurately estimate the number of potential patients needing treatment during an event provides the framework of emergency planning” (p. 55).

A list of key components was also established in the research with 75% contributing to a list that should be considered as significant. That list includes:

- A communications plan
- Detailed mapping
- NIMS
- Interoperability
- Prescribed resources
- Tactical policy
- Predetermined assignments
- Flexibility
- Traffic plan

- Command and Control
- Staffing
- Contact information
- Pre/Post event meetings

The feedback instrument did not provide as much in the way of sample copies of plans as this author would have hoped. Only five (41%) of the departments forwarded a copy of their plan as instructed. Those five plans did provide some significant findings on essential components and some critical research on incident action plans. It appears by the research found in the feedback instrument that it may be more appropriate to develop an incident action plan to address pre-planned events in mass gathering venues rather than relying on only a pre-incident plan to address these incidents. The Chicago incident action plan template provided this author with an excellent foundation that can easily be adapted to a document for the Dallas Cowboys stadium.

Historical information on stadium fires did confirm that there were fires but, did not provide much in the way of information that could be used to produce a PIP for Arlington. Most of the challenges that plagued Atlanta and Irving should be remedied by changes in NFPA standards and building codes. Even calls to the Irving Fire Department, a neighbor to Arlington, did not produce any significant research and it was obvious that the details of the fire were kept quite and even today can't be reproduced. The one thing that will carry over is the NFPA's assertion "other factors that fire departments might consider in their tactical plans for stadium suite areas is the physical arrangement of the stadium and the accessibility that fire fighters have to a potential fire area" (National Fire Protection Association [NFPA], 1993, p. 14). In contrast, FEMA would also identify the importance of detailed drawings in the attack on the Pentagon in

2001. The fact that there were not detailed drawings was considered to be a significant factor in the mitigation of this incident. FEMA (2004) provided a recommendation that concluded “departments should have building details with hazards pre-identified and site drawings available at the incident to provide responders with critical and accurate information” (p. 32). This information was echoed throughout the research and should be considered as significant and a key component to an Arlington plan.

Historical findings pertaining to the 1993 bombing of the World Trade Center did indicate that NYC*EMS provide an MCI pre-plan with the goal “to identify and develop response plans for MCI’s at locations with above-average potential for their occurrence, such as transportation hubs, high occupancy locations, and hazardous materials storage sites” (United States Fire Administration [USFA], 1993, p. 68). That report also emphasized that “the plan is activated when an incident produces more than five patients or exceeds the capabilities of a two-ambulance response” (p. 68). There is no doubt that however the plan is developed, major components should be adaptable to every day life. Routine use of key components of the plan will ensure its success during a large-scale incident. The lessons learned section of the USFA report did provide a substantial list of forty-five recommendations that are significant to this research.

The Oklahoma Department of Civil Emergency Management was the only entity to identify the unsolicited response of local, state and federal agencies as a hindrance to their operation. In contrast, FEMA (2004) identified a recommendation under the initial response section calling on departments to consider “developing a policy to control requested and non-requested resources and eliminating freelancing of public safety resources” (p. 19). That same report also pointed to the importance of “Developing a local and regional capability to augment

and sustain a reinforced response” (p. 9.). Although established as pertinent, these findings alone require massive coordination between multiple emergency providers and should be considered as a key component.

Understanding what exactly a pre-incident plan entails is an important step in the process. The NFPA has a clear definition of a pre-incident plan that also established the philosophy of such a document. It was not unlike research discovered in *Fire Officers Principles and Practices*. Both provided a list of “factors that should be evaluated when assessing the potential situations that could affect a facility during emergency conditions” (National Fire Protection Association [NFPA], 2003, 1620-7). Brunacini (2002) provided what this author feels is the most prolific assertion that established “pre-incident planning arms the IC and the response team with facets and details that are often almost impossible to acquire during an actual event” (p. 107). Brunacini also provides a list of consideration questions that should be useful in selecting the most useful areas to pre-plan.

One finding that added some confusion to the research was a document called an incident action plan (IAP). In his book *Fire Command*, Brunacini describes an IAP as “the incident strategy to determine the right place(s) to operate and then develops the IAP to describe the correct action that matches and takes control of the incident conditions, within the basic overall strategy” (p. 219). It appears that what Brunacini describes is a plan that is established at the incident and not necessarily ahead of time. What is interesting is that when asked to provide a pre-incident plan as part of the feedback instrument, Minneapolis and Chicago Fire Departments provided incident action plans for their mass gathering venues and not PIP’s. These two plans do provide some information that can be considered as “canned” but also includes intelligence, which appears to be crucial, that can only be known as the event unfolds. This fact is supported

by the comments of Tony Vasquez, Executive Assistant Office of Fire Commissioner for the Chicago Fire Department. Vasquez (personal communication) stated that “The CFD develops plans using the latest intelligence...this critical variables can make a difference” (July 20, 2007). While it’s obvious that the two have a different focus, it’s also obvious that they can work together to provide the incident with a canned strategic guideline. That fact is supported by the comments of Bachmann (2002) who established “pre-incident intelligence includes understanding how a facilities orientation will influence emergency operations and identifying natural and man-made hazards that will affect operations including access and apparatus placement” (p. 89). It now becomes clearer that combined with the research found in the feedback instrument, incident action plan may be a more appropriate document to develop to address incidents in mass gathering venues.

Some of the research found on the number of medical personnel provided for a particular venue interesting established some interesting assumptions. While Siarnicki (1999) and Leonard (2001) did find that the need to determine pre-event public safety personnel assignments as a key point to a stadium operational plan, De Lorenzo, Gray, Bennett and Lamparella established “The comparison of patient frequency for each event type indicates that the number of patients seen by on-site medical personnel is not primarily a function of event population with the range of population encountered” (De Lorenzo et al., 1988, p. 383). While the reasoning behind the assumptions made by Leonard in particular were sound, this author could not find other research to support his premise. That is not however, a reason to discount that research. This author believes that some form of patient to provider assumptions should be included in a mass gathering plan.

It is obvious, that at least for now, that neither the NFL nor the Dallas Cowboys have any sort of requirements for emergency service delivery or any canned pre-incident plan to address the new stadium. The feeling this author got from the interview of Morin is that it may be too early to develop a plan to address the new stadium. This author did determine that the NFL will never and has never provided any guideline that addresses the delivery of emergency services accept to ensure that they are provided during NFL sponsored events.

It does appear that the department provides a guideline on pre-incident planning. The policy however, is generic in scope and provides information on documenting building details as they relate to a potential fire rather than detailed information on event staffing levels staging areas for MCI components, interaction with Police or the location of pre-staged supplies. I do know that this policy was not designed for that either. It is becoming apparent that the PIP does/should dove-tale with some sort of IAP to create a strategic plan that provides building details as well as intelligence information gathered in the event planning process.

The department also provides a detailed policy on the incident command system. The policy provides information on establishing command, responsibilities and functions, transfer of command and the roles and responsibilities of command officers. The policy also establishes “Members of the Arlington Fire Department and Arlington Emergency Medical System (AEMS) shall use the Incident Command System (ICS) at every emergency medical incident and training system” (Arlington Fire Department, 2006, p. 1). This is similar to information found from the USFA, *The World Trade Center Bombing: Report and Analysis USFA-TR-076* that stressed the importance of using the incident command structure early in an incident as it “allows it to be readily integrated with the unified interagency command structure at any type of emergency” (United States Fire Administration [USFA], 1993, p. 71).

Recommendations

The research did identify key components associated with an emergency response and mitigation plan to address mass gathering venues that will also provide a foundation for the development of a pre-incident plan. The research also supported the initial premise that a pre-incident plan would provide the organization with a tool to address events involving the Dallas Cowboy mass gathering venue. It also uncovered some eye-opening findings on the significance of an incident action plan to address the specifics of prescheduled events that may require more pro-active planning. It may however, be too early to establish a concrete plan, that may have to come as the first game day comes closer.

Based on the literature review, feedback instrument, telephone and e-mail interviews, and the analysis of the results of this applied research project, the following recommendations have been designed to assist with the preparation and development of a comprehensive plan to address the response and mitigation of the Dallas Cowboy mass gathering venue for the City of Arlington Fire-Rescue Department:

1. Develop a detailed pre-incident plan to address the geographic layout of the stadium. That plan should incorporate the guidelines established in SOP 103.30 *Pre-Incident planning* but, should be expanded to include pre-determined staging areas for additional equipment, decontamination, triage, treatment and transportation and pre-determined hazard and obstacle information. The plan should also incorporate lessons learned from the historical information on the 1994 World Trade Center bombing and key components in research found by the NFPA and Brunacini. All of this information should be readily available to

incident commanders and Company Officers well in advance to any event. The plan should also address:

- A communications plan
- Detailed mapping of site
- NIMS
- Interoperability
- Prescribed resources
- Tactical policy to support strategy
- Predetermined assignments
- Flexibility
- A traffic plan
- Command and Control considerations
- Staffing
- Contact information
- Pre/Post event meetings

2. Develop an incident action plan template that can be used for all mass gathering events in the entertainment district. That plan should incorporate the Chicago IAP template as a foundation for specific pre-determined strategy to address mass gathering events in and around the new stadium. The plan should include a component that addresses intelligence concerning the event and incorporates that intelligence into the IAP. The plan should also included information discovered from Green Bay Wisconsin on the use of expected crowd size and national threat level to establish their plan. Historical information gathered from the first couple

of years of events prior to the Super Bowl should also serve as a catalyst for data driven decisions for the 2011 event.

The plan should be comprehensive enough to include mutual aid companies if the need arises and ways to control those resources should they ‘self dispatch’.

During the development of the IAP, the fire department must include key decision makers as part of the planning process. Because the Cowboys are a privately owned corporation, on private land, they don’t necessarily have to abide by any plan the department puts together, it is critical that they be involved in the planning process and have the opportunity to “buy in”. The plan should also involve key leaders from all divisions of the fire department including field Incident Commanders.

3. Develop a staffing plan to address mass gathering venues using a standard methodology according to expected population. That plan should incorporate strategic placement of staffing and equipment based on the IAP for a given event. The plan should also include a method to call back off-duty staff should they be needed.
4. Develop a pre-event management team that is considered to be the informational funnel in which all event planning is filtered. The team should be tasked with the development of the IAP and should also assign staffing and equipment according to pre-determined factors and intelligence. The Fire Department should also spear-head a process by which the permit application review process pass through this teams hands prior to any pre-scheduled events that involve mass gatherings.

5. Develop policy to address the strategic management of mass gathering venues.

This policy could be an expansion of the current SOP 201.01 *Incident Command System* and should provide guidelines on the strategic management of incidents involving our mass gathering venues. The policy should include information on how the Emergency Operations Center (EOC) interacts with field operations and a clear set of guidelines on the roles and responsibilities of both.

In order to develop a comprehensive tactics and management plan to address mass gatherings, the department should continue to solicit information from other departments that currently deliver emergency services to these venues. The department should observe as many games as possible in the Cowboys current stadium and also participate in Super Bowls throughout the county in order to gain as much insight as possible. Those insights will help the AFD take advantage of opportunities experienced by others.

References

- Arlington Fire-Rescue. (1996). *Pre-Incident Planning*. Author.
- Arlington Fire-Rescue. (2006). *Incident Command System*. Author.
- Bachman, E. (2002, April). Pre-Incident Size-Up and Important Response Tool. *Fire Engineering*, pp. 89-95
- Brunacini, A. (2002). *Fire Command*. Jefferson City: Von Hoffmann
- City of Arlington (COA). (2006). *Facts and figures*. Author.
- De Lorenzo, R. A., Gray, B. C., Bennett, P. C., & Lamparella, V. J. (1988). Effect of Crowd Size on Patient Volume at a Large Multipurpose, Indoor Stadium. *The Journal of Emergency Medicine*, 7, 379-384

- Federal Emergency Management Association [FEMA]. (2004). *Responding to Incidents of National Consequence* (FEMA publication No. FA 282). Washington, DC: Author
- Isner, M. (1994, July/August). Stadium Fires Demonstrate Unique Protection Problems. *NFPA*, pp. 49-54
- Krebs, D. R. (2001, June). EMS Preplanning for Large Public Events. *Fire Engineering*, pp. 16-22
- Kreis, S. (1999, December). Incident action plans. *Fire Engineering*, pp. 64-70
- Leonard, R. B. (2001, January). EMS for the Masses. *EMS*, pp. 53-60
- National Fire Academy (NFA). (2004). *EFOP Applied Research - Self-Study Course*. (EFOP ARSSC). Emmitsburg, MD: Author.
- National Fire Protection Association [NFPA]. (2006). *Fire Officer Principles and Practice*. Quincy MA: Author.
- National Fire Protection Association [NFPA]. (2003). *Recommended Practice for Preincident Planning*. (NFPA 1620). Quincy, MA: Author.
- National Fire Protection Association [NFPA]. (1993). *Two Stadium Fires*. Quincy MA: Author.
- North Texas Council of Governments. (NTCOG) (2006). *2006 Current population estimates*: Author.
- Siarnicki, R. (1999). *How Does a Jurisdiction meet the Public Safety Needs of a Newly Constructed National Football League Stadium and Not Adversely Impact the Community or Tax its Available Resources?* (Executive Fire Officer Research Paper). Emmitsburg, MD: National Fire Academy.
- The Oklahoma Department of Civil Emergency Management. (n.d.). *Alfred P. Murrah Federal Building Bombing – After Action Report*. Oklahoma City: Author

United States Fire Administration [USFA]. (1993). *The World Trade Center Bombing: Report and Analysis* (USFA publication No. FA 076). Washington, DC: Author

Appendix A The World Trade Center Bombing: Report and Analysis – Lessons Learned

1. The need for a medical incident command system cannot be overstated.

Span of control is critical to maintaining the ability to manage; no manager should have anything but a reasonable reporting relationship, with 1:5 being optimal. This arrangement enhances operational efficiency and communications and reduces the burden of information and responsibility overload.

2. A command team concept, with deputy incident commanders and a well-trained command post staff, can assist in executing operations, as well as in receiving information.

3. If you expect your personnel to do something in an emergency, be sure they are accustomed to doing it routinely, especially in the case of incident command.

Therefore, use it at all routine incidents.

4. Consider implementing a “management liaison” at the command staff level to brief and interact with senior management and political leaders.

This will allow the incident commander to focus on operations.

5. In the world trade Center incident, both the medical and fire operations were extensive enough to require intense management.

Fire departments that have emergency medical service (EMS) responsibility should closely examine their medical disaster management procedures to ensure their ability to manage both major elements simultaneously.

6. Clearly delineating duties, especially at a major incident, is critical to ensuring that all responders know their roles.

7. Consider the need for multiple staging areas to ensure the best access to multiple sides of an incident.

Consider the routes vehicles will use to return to the scene.

8. At major incidents to which numerous vehicles will respond, categorize the vehicles by type.

Separating basic life support ambulances, advanced life support ambulances, specialty units, and support vehicles will make it easier to deploy them.

9. Major incidents, or those that produce multiple patients over an extended period of time, necessitate making decisions regarding transporting truly critical patients before the end of the triage process.

These patients may deteriorate rapidly or expire if they are not managed aggressively from the outset. These decisions, however, must be balanced against the resources available.

10. Triage tags really work — use them regularly.

- 11. As we learn more about the ill effects of entrapment and compression on the human anatomy, it is clear that crush syndrome must be addressed while rescue and disentanglement is underway.**

Crush syndrome (trauma to muscle tissue that can cause shock and renal failure) can debilitate or kill victims if they are not treated by specially trained medical personnel before being removed from their entrapment site. Paramedics are well-equipped to deal with the effects of crush syndrome and must be included in any urban search and rescue effort.

- 12. The issue of medical control should be considered and included in the mutual-aid plan. Do not leave this area for speculation.**

Allow mutual-aid providers to use their own protocols and medical control when possible. Disaster medical control protocols are recommended so that the need for physician contact is eliminated during a disaster.

- 13. Transport decisions should be made on an incident wide basis — not by individual divisions.**

- 14. EMS personnel should be trained in landing zone operations and safety. safety is critical when operating around helicopters.**

All personnel, especially the landing zone sector officer, must observe hazards.

- 15. Despite pressure to track every victim, name tracking at the scene may not be feasible.**

Include a strategy for acquiring victim pedigrees in the disaster plan; consider incorporating the use of law enforcement personnel or volunteers.

- 16. There is no way that fire/rescue and medical communications could have been conducted within a single tactical network.**

Traffic overload would have severely interfered with the efficiency and safety of operations.

- 17. Division progress reports to command are vital.**

- 18. EMT trainees from our Division of training formed a staircase-relay mechanism.**

These teams were placed every two to three floors from the lobby to forward triage areas and casualty collection points on the upper floors. They were used to move equipment up and patients down without exhausting individuals who would otherwise have to do multi-floor carries.

- 19. All portable radios must be able to function on designated tactical networks.**

- 20. Dynamic re-deployment plans are needed to backfill area units drawn into an incident.**

- 21. Preplan alternative procedures for situations when your infrastructure communications systems (cell phones and pagers, for example) fail secondary to the incident.**

- 22. Consider the need for additional staff at the communications center.**
23. Develop mechanisms for disseminating information to hospitals rapidly and continuously.

One approach would be to include radio links monitored by hospital staff for broadcast updates (also voice alarm or voice pager system). A computer link in medical facilities and

telephones with automatic speed dialers with messaging and acknowledgment features would aid in this process. Hospital-notification problems that must be addressed include the following: calling several hospitals at a time, providing informational updates, notifying hospitals when the alert is concluded, and controlling patient flow. Hospitals must provide feedback to the communications center: “We can handle everything” vs. “We’re drowning in patients” vs. “You didn’t send us enough.”

24. Never underestimate the need for mutual aid — even in large cities.

25. Joint training and exercises in mCi operations and incident command are required for mutual-aid responders.

26. Mutual-aid plans addressing activation and lines of authority must be formalized.

27. Mutual-aid resources left in staging and not used will be frustrated.

Crews should be debriefed and given an understanding of the incident and their essential role of standing by in reserve.

28. Mutual-aid plans not only should cover the response to a disaster but also should provide for continued emergency service coverage to unaffected communities.

29. Common mutual-aid frequencies would have been beneficial.

30. Plans for managing ongoing routine 9-1-1 operations, such as holding over shifts, as well as for managing the incident, are needed.

31. Documenting the response is critical in cases where federal disaster declarations are likely.

32. Plans to control and reduce equipment loss and conduct equipment recovery are needed.

33. Advance agreements with vendors to replenish oxygen supplies at the scene or to stay open at a local site so that bottles can be refilled as needed could be beneficial.

34. Multilaterators, devices that deliver oxygen to multiple patients, are great and are available commercially.

35. Being self-sufficient through measures such as bringing power and lighting to the scene, will allow ems objectives to be met without depleting other agency resources.

36. If you have a reserve ambulance fleet, spare equipment must be available and be vehicle-based so extra units can be placed rapidly into service.

Remember the need for ALS equipment and portable radios.

37. Have “high-rise” logistics kits available for remote treatment areas.

38. Logistical support units (mobile medical caches) are essential.

LSUs stock rapidly consumable medical hardware items such as backboards and oxygen, as well as software. Four of NYC*EMS LSUs were constructed from retired/modified ambulances reduces costs significantly

39. Well-intentioned media personnel may transmit improper instructions, such as to break high-rise windows.

At the WIC incident, a public information officer (PIO) at EMS headquarters conducted a campaign to decrease the routine call load on the EMS system, reducing the call volume during the disaster and making it possible to render efficient service to the rest of the city.

40. Crews must be monitored for their use of safety equipment (helmets, coats, etc.).

41. Mobile safety officers are an asset and would have been beneficial in each division.

42. All issues cannot be addressed on site during a disaster.

An emergency operations center (EOC), especially if it is well-coordinated with the command post, can address many matters, including unit redeployment and personnel and staffing requirements for the disaster, as well as for routine community 9-1-1 service, and a host of administrative and operational needs as they arise.

43. Consider the possibility of terrorist-related hazards, including the presence of “kill bombs” designed to draw crowds and rescuers and then to “take them out.”

Keep in mind that terrorism is not just an urban problem — terrorists can strike anywhere.

44. Rest and rehabilitation at the wtC disaster included CisD and rotation of crews.

They were essential to preserve the health and well-being of responders — especially since the crews were physically exerted by climbing to the upper reaches of the towers.

45. When planning for rest and rehabilitation, do not forget officers.

Remember to meet their needs, as well.

Appendix B Responding to Incidents of National Consequence
 Executive Summary: Awareness/Prevention/Preparedness

Awareness/Prevention/Preparedness		
Area/ Priority	Issue (Current Situation)	Recommendation (Action Items)
1	A community may not have adequate resources to sustain a reinforced response to a major incident.	Develop a local and regional capability to augment and sustain a reinforced response.
2	The response to a major incident may deplete local resources, while the population continues to experience typical emergencies.	Develop a plan for continued public safety protection and service provision in a jurisdiction affected by a major incident.
3	Personnel may need to be recalled to duty during the early stages of a major incident.	Develop a formal, organized policy for the orderly recall of organizational personnel.
4	Departments or organizations from non-affected jurisdictions may self-dispatch to the scene, leaving their own communities at risk.	Develop an organizational policy to define/guide the development of personnel to assist other agencies in time of crisis.
5	The size, scope, or complexity of an incident may overwhelm local emergency service resources.	Develop statewide mutual-aid agreements for resource acquisition and deployment.
6	Complete knowledge and accurate structural and hazard information about the incident site may not be readily available.	Complete and document an assessment on all target hazards.
7	The integration of local, State, and Federal resources may not occur effectively during a multiagency response to a major incident.	Develop regular interagency planning and training to improve large-scale, multiagency response and incident management.
8	During a major incident, traffic arteries will become congested rapidly, delaying responding resources.	Develop a coordinated traffic management and regional evacuation plan.
9	Untrained local citizens and community groups will attempt to help in times of crisis.	Develop and train supplemental community resources to provide initial assessment and assistance to public safety organizations.

Appendix C Arlington Fire Department SOP 103.30 Pre-Incident Planning

**ARLINGTON FIRE DEPARTMENT
ADMINISTRATIVE PROCEDURES
ISSUED: FEBRUARY 1996**

**REPORTS AND RECORDS
PRE-INCIDENT PLANNING
103.30**

PURPOSE

Pre-incident plans are created to familiarize Fire Department personnel with the building layout, the hazards and sources of potential danger, or other unusual features in a structure or complex. Pre-plans also provide Fire personnel with knowledge of locations of sprinkler control valves, standpipe and sprinkler connections, and other fire protection systems in the building. Personnel also gain general knowledge of the life hazard, the contents, the type of construction, and the amount of fire suppression resources required to handle an emergency. The knowledge gained through these plans will enable Fire-Rescue forces to take appropriate action on familiar territory.

A pre-incident plan consists of four steps: information gathering, information analysis, information dissemination, and the formulation of operational plans.

INFORMATION GATHERING

Information gathering is an in-depth survey of the selected site by the first-in company. The objective is to gather all applicable information that may affect operations.

1. The company officer will schedule the pre-plan survey. This survey may be made in conjunction with a scheduled fire inspection; however, the purpose of both activities must be clearly explained to the occupant. Fire Department representatives will:
 - A. Arrive on time
 - B. Dress neatly in accordance with Departmental standards
 - C. Bring necessary materials including notebooks; pencils; camera, if appropriate; flashlight; pre-plan forms; etc.
 - D. Take a management representative along on the tour
 - E. Conduct the tour in an orderly fashion
2. Company personnel shall complete the fact side of a draft copy of the Pre-plan Form (Form 111) and a rough sketch of the facility showing features of tactical interest. The following sketches shall be completed at the site of the facility:

**ARLINGTON FIRE DEPARTMENT
ADMINISTRATIVE PROCEDURES
ISSUED: FEBRUARY 1996**

**REPORTS AND RECORDS
PRE-INCIDENT PLANNING
103.30**

- A. Site Plan: a rough sketch of the exterior of the facility and all tactical information pertinent to the outside of the building.

Examples:

- 1) Surrounding street names
- 2) Primary and secondary hydrants
 - a. Size of the main
 - b. Length of hose lay
- 3) Fire Department connections
- 4) Gas, water, electric main cutoffs
- 5) Knox box location
- 6) Outside dimensions
- 7) Fire lanes
- 8) Exposures
- 9) Any information that may be deemed vital to the Fire Department's emergency response to this facility.

- B. Floor Plan: a rough sketch of the exterior of the facility and all tactical information pertaining to the inside of the facility.

Examples:

- 1) Fire control room
- 2) Fire pump location
- 3) Standpipes (type and location)
- 4) Fire alarm panel
- 5) Fire doors
- 6) Fire rated construction
- 7) Riser locations
- 8) Corridors
- 9) Any information that may be considered vital to fire ground operations.

NOTE: Many facilities have 8-1/2" x 11" copies of floor and site plans. These copies may be used instead of the rough sketches.

- C. When sketching a multi-story building, a single floor plan is sufficient if all of the floors are common.
- D. Multi-building facilities require separate floor plans for each building, along with a site plan for the facility.

**ARLINGTON FIRE DEPARTMENT
ADMINISTRATIVE PROCEDURES
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**REPORTS AND RECORDS
PRE-INCIDENT PLANNING
103.30**

3. Company personnel shall complete an elevator information form (Form 112) for all buildings containing elevators. The service maintenance company can assist with determining emergency procedures.

The emergency phone is to aid persons trapped in the elevator to call for and receive assistance. Check the elevator to make sure that each car contains a working emergency phone. Then, ensure that a security company or security station can be contacted with this phone 24-hours a day (this shall be in addition to the emergency phone number listed on the Form 112).

INFORMATION ANALYSIS

Information analysis is the process of examining gathered applicable information which can be used at most working incidents and transferring data that is pertinent and vital to Fire-Rescue to the Pre-plan Form. The Pre-plan Form shall be completed on-site during the initial tour and later converted to a neater copy once back at the station where personnel will have more time and better working conditions to do so. On the form, illustrative drawings shall be simple, drawn according to scale, and will include tactical symbols.

INFORMATION DISSEMINATION

The information dissemination step shall be conducted at the building site. This tour will consist of a brief walk-through by all first-alarm units. All companies shall have a copy of the standard pre-plan. A general idea of the building layout and other applicable firefighting information can be pointed out.

1. Get permission and make an appointment
2. Arrive on time
3. Dress properly
4. Take a management representative along
5. Conduct the tour in an orderly manner
6. Thank management for their cooperation

**ARLINGTON FIRE DEPARTMENT
ADMINISTRATIVE PROCEDURES
ISSUED: FEBRUARY 1996**

**REPORTS AND RECORDS
PRE-INCIDENT PLANNING
103.30**

FORMULATION OF PLANS

The company officer of the first-in company shall organize a meeting to formulate pre-incident attack plans. All first-alarm units will attend. Using the pre-plan slides, overhead transparencies, chalkboard or other materials, different tactical problems of varying fire situations can be discussed. Points of entry, hazardous areas, water supply, apparatus placement, utility cutoffs, and resources needed are some of the items that should be discussed and pre-planned. Battalion Chiefs and first-in apparatus will carry copies of pre-plans.

Appendix D Arlington Fire Department SOP 201.01 Incident Command System

**ARLINGTON FIRE DEPARTMENT
STANDARD OPERATING PROCEDURES
ISSUED: MARCH 2006**

**INCIDENT MANAGEMENT
INCIDENT COMMAND SYSTEM
201.01**

INCIDENT COMMAND SYSTEM

Members of the Arlington Fire Department and Arlington Emergency Medical System (AEMS) shall use the Incident Command System (ICS) at every emergency incident and training exercise.

The ICS is designed to accomplish the following:

1. Fix the responsibility for Command on a certain individual.
2. Ensure that a strong, direct, and visible Command will be established upon the arrival of the first Fire Department Member (*or Ambulance Paramedic or Ambulance Supervisor*).
3. Establish the responsibilities and functions assigned to the Command Officer.
4. Provide a system to process information that supports incident management, safety, planning, and decision making.
5. Provide for the orderly transfer of Command to subsequent arriving officers.

ESTABLISHING COMMAND

The transfer of Command is based on the needs of the incident and will occur after the transfer procedures are fulfilled.

1. First Arriving Ambulance Paramedic (Medic) – shall assume Command until relieved.
2. First Arriving Ambulance Paramedic Supervisor (802) – shall assume Command until relieved.
3. First Arriving Fire Department Member – shall assume Command until relieved.
4. First Arriving Officer – shall assume Command until relieved.
5. The Second Arriving Officer – shall assume Command after the transfer of Command on working structure fires. This will be announced over the radio.
6. First Arriving Aerial Officer – shall assume Command after the transfer of Command. This will be announced over the radio.

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7. First Arriving Battalion Chief – shall establish a Command Post on incidents that require coordination of two or more apparatus and/or crews on most working incidents and shall assume Command after the transfer of Command on working incidents. The assumption of Command and the location of the Command Post must be announced over the radio.
8. Staff Battalion Chiefs – may assume Command as necessary, fill a position on the Command or General Staff, or serve as Advisor.
9. Assistant Chief or Fire Chief – may assume Command as necessary or take the role of Senior Advisor.

COMMAND RESPONSIBILITIES AND FUNCTIONS

The first arriving Fire Department or AEMS member shall take Command of the incident. The initial Incident Commander shall remain in Command until Command is transferred.

Command Responsibilities

- a. Designate the areas to be searched and/or evacuated.
- b. Remove endangered occupants and ensure treatment of the patients.
- c. Provide for the safety of all emergency personnel. Ensure the availability of designated firefighter rescue personnel through IRIC or RIC(s).
- d. Stabilize and/or stop further progress of the incident.
- e. Conserve property.
- f. Maintain a record of all unit assignments and areas that are searched/evacuated.

Functions of Command

Initial Command Officer(s):

- a. Transmit a brief initial size-up.
- b. Take Command. Consider the implementation of a Command Channel.
- c. Rapidly evaluate situation.

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ISSUED: MARCH 2006**

**INCIDENT MANAGEMENT
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- d. Communicate the decision to wait for IRIC or enter without IRIC.
- e. Provide IRIC, or, if the situation requires entry due to a citizen rescue, request a Second Alarm.
- f. Develop an operation or action plan.
- g. Assign resources as required.
- h. Designate search areas and transmit “primary search complete” (on the designated areas) after primary search.
- i. Request additional resources proactively.
- j. Transfer Command.

Relieving Officers:

- a. Take Command and announce the transfer on the radio.
- b. Establish an effective operating position for the Command Post and communicate the location.
- c. Size-up the incident; assess the priorities.
- d. Assure IRIC is in place, or establish RIC.
- e. Identify the overall strategy, develop an incident action plan, and assign companies and personnel consistent with plans, SOPs, and safety considerations. Include accountability as a major element in strategic and tactical planning.
- f. Transmit a secondary size-up. Initiate, maintain, and control the communication process.
- g. Maintain an accurate tracking and awareness of where companies and individuals are committed at an incident.
- h. Develop and maintain an effective Incident Command structure.
- i. Request additional resources.
- j. Develop a backup plan. Review, evaluate, and revise the incident action plan.

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- k. Assign an Occupant Services Officer as soon as practical.
- l. Authorize the release of information to news media.
- m. Provide for the demobilization of resources.

Command's Responsibility for Information Management

Managing information during an incident is necessary to:

- a. Ensure the safety of all.
- b. Effectively solve the citizen's problem and manage the emergency incident.
- c. Effectively and efficiently manage our personnel and resources.
- d. Fulfill the obligation to document our performance.

Command shall maintain a record of the following:

- a. Tactical Benchmarks
 - Primary Search Complete (company performing search, area searched)
 - Evacuation Complete (if needed)
 - Secondary Search Complete
 - Fire Under Control
 - Loss Stopped (Salvage Complete)
- b. Significant Events
 - Personnel Accountability Reports (PAR)
 - Changes in Attack Strategy (i.e., offensive to defensive mode)
 - Establishment of IRIC and RIC
 - Missing, Lost, or Trapped Firefighters (MAYDAY and subsequent rescue)
 - Emergency Withdrawal
 - All Company Assignments
 - Formation of Groups or Divisions
 - Citizen Rescue

Command will announce, over the radio, significant events and the completion of benchmarks to companies on the emergency scene. Command is responsible for recording the information at the Command Post. The information recorded should include company identification, location(s), and the time of completion or occurrence.

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TRANSFER OF COMMAND

Command is transferred only when the following has been completed:

1. As ranking officers arrive and transfer Command, they shall communicate with the officer being relieved, preferably face-to-face, or by radio.
2. The officer being relieved shall brief the officer taking Command on the following:
 - a. Verify the Plan
 - Situation Status
 - What has happened?
 - Where is it going?
 - How effective is the Plan?
 - Safety considerations
 - Completion of benchmarks
 - Resource Status
 - Location and status of personnel
 - Location and status of resources
 - b. Challenge the Plan
 - Need for additional resources
 - Support or change the Plan
 - Need for additional information

The officer taking Command should use the officer relieved of Command to best advantage.

Roles and Responsibilities of the Command Officers

Second Arriving Battalion Chief

- a. Verify and challenge the Plan
- b. Provide input regarding tactical priorities, critical fireground factors, and safety
- c. Evaluate the need for additional resources
- d. Evaluate the Command Structure and span of control
- e. Fulfill duties assigned by Command in any Command Staff or General Staff position in the Incident Command System

Assistant Chief or Staff Chief: "Senior Advisor"

- a. Verify and Challenge the Plan

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- b. Provide on-going review of the overall incident
- c. Evaluate the Command Structure and span of control
- d. Provide liaison to City Officials

The Senior Advisor's participation will allow the Battalion Chief in Command to focus on the completion of the tactical priorities and the strategic plan. The Senior Advisor's main focus is on the incident as a whole event and its impact from a broader perspective. In this role, the Senior Advisor is essentially acting as the overall Incident Commander.

Members in Fire Prevention, Fire Training, Administrative Services, and the Office of Emergency Management may be assigned support positions within the Incident Command structure. Command should make this decision based upon the specific needs of the incident. Staff members must report to the Command Post for assignment.

Appendix E Feedback Instrument/Cover Letter

July 15, 2007

Po Dunk Fire Department
Chief Joe Blow
911 Emergency Lane
Wherever, USA

Chief Blow:

My name is Brian Cudaback and I am Battalion Chief with the Arlington, Texas Fire Department. I am also a student in the National Fire Academy's Executive Fire Officer Program.

As part of this program I have to complete an applied research project that looks at an emerging issue within my department. My research topic is *Mass Gathering Venues: Identifying Key Components to an Pre-Incident Plan to address the new Dallas Cowboys Stadium*. As such, I am looking at other departments with similar mass gathering venues and their pre-incident plan. You have been selected because of the venue within your jurisdiction.

Attached is a short feedback instrument that I would ask you to complete in order to help me with my research. I am interested in finding out whether or not you have an established pre-incident plan that addresses your venue. You can return the feedback instrument using the self address envelope that I have provided.

This research will provide an in-depth look at problems with delivering fire and emergency medical services at mass gathering venues. I will also provide my department with a recommendation regarding change in our procedures geared toward the venues within our city.

Thank you for your time and the completion of your survey.

1. Department Name: _____ Career Volunteer
2. Mass gathering venue & team name? _____
3. Department strength: _____ Population served: _____ 2006 Total Incidents: _____
4. Does your department have an Pre-Incident Plan (PIP) that deals with your mass gathering venue?
Yes If yes, please move to #4 No If no, your survey is complete.
5. What, if anything, caused your department to develop this PIP?

6. How long has your PIP been in effect? _____
7. Has there been any updates to the PIP? Yes No
If yes, what caused the changes? _____
8. Does your PIP include recommendations from any recognized industry standard(s)?
If so, please list:

9. What do you consider to be some key components in your PIP? Please list.

Would you please include a copy of your plan along with your survey or you can e-mail it to me at brian.cudaback@arlingtontx.gov

Thanks for your time, effort and quick response!

If you would like a copy of my completed research project, I would be happy to provide you with one by e-mail ONLY. Please provide me with your e-mail address in the space provided below.

Appendix F Chicago Fire Incident action plan Format Headings

FIRE DEPARTMENT OF THE CITY OF CHICAGO
BUREAU OF OPERATIONS OPERATIONAL DEPLOYMENT PLAN

- DATES OF THE
- EVENT
- FROM (MO/DA/YR)
- TIME
- TO (MO/DA/YR)
- TIME
- EVENT DESCRIPTION
- LOCATIONS:
- SCOPE OF THE EVENT:
- AREAS OF CONCERN:
- INCIDENT ACTION PLAN (IAP):
- DAILY OPERATIONS
- CHICAGO FIRE DEPARTMENT COMMAND POST
- EMS BRANCH
- RADIO COMMUNICATIONS
- NOTIFICATION PROCEDURE
- PATIENT CONTACT
- MASS CASUALTY INCIDENTS/ STAGING AREAS
- EMS PERSONNEL DURING A HAZ MAT INCIDENT
- EMS DUTIES
- FIRE SUPPRESSION AND RESCUE BRANCH
- FIRE CART DUTIES
- EMS RESPONSE ASSISTANCE
- FIRE DISPATCH PROCEDURE
- JOINT OPERATIONS CENTER (JOC)
- EMS OPERATIONS
- MEDICAL ADMINISTRATION AND REGULATORY COMPLIANCE
- FIRE OPERATIONS
- SPECIAL OPERATIONS
- JOINT HAZARD ASSESSMENT TEAM (JHAT)
- SPECIAL ATTENTION
- HAZMAT MASS CASUALTY DECONTAMINATION PLAN
- EVACUATION ROUTE (REFER TO THE ATTACHED MAP)
- MASS CASUALTY DECONTAMINATION PRE-DEPLOYMENT
- MASS CASUALTY INCIDENT RESPONSE
- EMERGENCY EVACUATION
- WEATHER CONDITIONS
- CONTACT NUMBERS:
- RESPONSE DUTY CHIEFS