Running Head: FIRESCOPE, Incident Command System, and the 2013 Boston Marathon Bombings

FIRESCOPE, Incident Command System, and the 2013 Boston Marathon Bombings

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ABSTRACT:

The author describes the historical context for FIRESCOPE (**FI**refighting **RE**sources of **S**outhern **C**alifornia **O**rganized for **P**otential **E**mergencies) and the resulting Incident Command System (ICS) for managing disasters and planned events with emergencies. FIRESCOPE was a congressionally funded project to strengthen fire command and control during a fire-fighting event in response to a devastating series of wildland fires in California in 1970. It produced an incident command system for managing events by effective coordination and training of multiple agencies by using shared standard terminology, common organizational structure and communication systems. More than forty years later, an expanded ICS is central to the U.S. National Incident Management System (NIMS). FEMA training about ICS emphasizes 14 essential features: common terminology; modular organization; management by objectives; reliance on an incident action plan; chain of command and unity of command; unified command; manageable span of control; predesigned incident location and facilities; resource management; information and intelligence management; integrated communications; transfer of command; accountability; and deployment. The author uses the 2013 Boston Marathon bombing as an example of how the planners of the Boston Marathon effectively used ICS to save lives and restore order after the bombing.

FIREFIGHTING

 Before the 1960s firefighting was mostly a ground operation. One fire management veteran stated, "everything had to do with hiking and trucks." (National Interagency Fire Center Staff, 2013). In the 1960s the Bureau of Land Management and US Forest Service combined efforts and next involved the National Weather Service to develop their ability to forecast weather at risk for fires. By the 1970s, their fire-fighting consortium further expanded to include the National Park Service, the Department of the Interior's new Office of Aircraft Services, the Bureau of Indian Affairs, and the US Fish and Wildlife Service. The Fire consortium was renamed the National Interagency Fire Center (National Interagency Fire Center Staff, 2013), and the Bureau of Land Management still serves as the host agency and main employer. These federal agencies also coordinated efforts with state and local firefighters. In the 1970s leaders recognized that the success of interagency fire response required consistent and universal training. They standardized courses in fire safety for their firefighters on all levels.

 In September - October of 1970 the worst-ever fire disaster in California lasted 13 days, consisting of 773 individual wildfires that destroyed 722 homes, burned almost 600,000 acres of land across the state of California, killed 16 people, and injured many others.

 During initial debriefings of the disaster, analysts discerned that the problems with the response were not related to insufficient resources or failed tactics. Rather leaders had difficulty controlling and coordinating the thousands of firefighters and other emergency responders, many from neighboring mutual aid compacts. Some resources were not effectively used and others were exhausted. Air and ground forces were active but not coordinated. Analysts noted a lack of common organization; poor on-scene and interagency communication (with the various agencies using different radio frequencies, different terminology, and different organizational structures); inadequate joint planning; a lack of valid and timely intelligence; inadequate resource management; and limited prediction capability (Rowley, 2007, p. 7).

FIRESCOPE

 The United States 92nd Congress appropriated $900,000 to strengthen fire command and control systems by funding a project called **FI**refighting **RE**sources of **S**outhern **C**alifornia **O**rganized for **P**otential **E**mergencies (FIRESCOPE). The FIRESCOPE partner agencies identified five individual components necessary to improve the operational effectiveness of large multi-agency events. These components were to coordinate multi-agency resources during major incidents; develop improved methods for forecasting fire behavior; develop standard terminology; provide multi-agency communications; and provide multi-agency training (Rowley, 2007, p. 7).

 Southern California fire-fighting services and other organizations started to implement these components in 1977-79 for large-scale incidents (Rowley, 2007, p. 9). Richard Chase, the assistant manager of the FIRESCOPE research and development program, saw the potential application of the FIRESCOPE management system to regions beyond California and firefighting events. He wrote:

 The Incident Command System can accommodate a variety of incident types, sizes, and operational environments. Particular functions and organizational elements are activated only at the time and to the extent dictated by operational requirements of each specific incident. Coordination of such an effort presumes that all agencies adopt uniform terminology for day-to-day use, as well as minimal uniform training and qualification standards for personnel potentially assigned to multiagency incidents. Jurisdictional command responsibility and authority are not compromised. Unless there is express agreement to the contrary, each agency retains its legal responsibility within its jurisdiction and is assumed to maintain full command authority within that jurisdiction at all times (Rowley, 2007, p. 10).

 In 1985 Phoenix, Arizona Fire Chief Alan Bruncini revised the FIRESCOPE system to be easily used for smaller events as well (Perry & Lindell, 2007, p. 385). Its use has spread, with ICS becoming integral to the U.S. National Incident Management System (NIMS). Some hospitals implemented its command structure for their events as HEICS (Hospital Emergency Incident Command System), which in 2006 was renamed HICS (Hospital Incident Command System).

ICS & NIMS

 More than forty years later, an expanded ICS is central to NIMS. In 2017 FEMA teaches that Incident Command System has 14 essential features: common terminology; modular organization; management by objectives; reliance on an incident action plan; chain of command and unity of command; unified command; manageable span of control; predesigned incident location and facilities; resource management; information and intelligence management; integrated communications; transfer of command; accountability; and deployment (Loesch & Giordano, 2016, pp. 251-252).

2013 BOSTON MARATHON BOMBING

 Since 1987 every year in April on Patriot's Day (originally April 19th) runners participate in the Boston Marathon, running through eight Massachusetts communities to reach the finish line at Boylston Street in downtown Boston, with modern crowds numbering 500,000 spectators (Boston Athletic Association, 2017). Now thousands line the 26+ mile route to cheer the 20,000 participants. The Boston Red Sox play a home game every year on the same day, with more spectators coming to cheer on runners after they leave nearby Fenway Park when the game ends. It is a major sporting event for Boston, as well as for the Massachusetts Emergency Management Agency, which for decades has been involved with planning for potential disasters associated with the Boston Marathon.

 In July 2013, the FEMA Deputy Administrator, Richard Serino, told Congress:

 As the medical incident commander in Boston for more than 35 mass casualty incidents and for all of Boston’s major planned events, including the Boston Marathon, I can tell you that the fact that the response was so well executed wasn’t an accident – it was a result of years of planning and coordination. It was no accident that not a single hospital in the city was overwhelmed with patients in the aftermath of the bombings. It was no accident that patients were appropriately triaged and transported in an orderly manner to the appropriate hospital based on their needs. And it was no accident that a Medical Intelligence Center was fully staffed and operating on race day to keep track of patients, coordinate resources and share information with the medical community throughout the region. (Serino, 2013, pp 2-3).

 Moreover he highlighted the use of Incident Command System:

 First responders in Boston used the National Incident Management System and the National Response Framework to exercise before the event. Agencies and organizations involved adopted the Incident Command System (ICS), conducted planning and operations using unified command, and integrated aspects of the region’s disaster plans into the event’s operations plan (Serino, 2013, p. 5).

 Since the route crosses eight communities, event planning requires coordination among federal, state, and local levels of government, public safety, public health, emergency medical services, and security, among other services with the main sponsor, Boston Athletic Association (BAA). Each year this annual planning begins in January.

 The Massachusetts Emergency Management Agency (MEMA) reported:

This annual planning concludes with a tabletop exercise in which each of these partners participates to work through the coordination of response activities to several Marathon-specific public safety and medical scenarios. A significant byproduct of this planning process and exercise participation is the networking and relationship-building among public safety, public health and medical partners.

 A significant planning component for the 2013 Boston Marathon was the enhancement of the medical system supporting the race ... medical system consisted of 26 medical tents along the course and two medical tents (Alpha and Beta) at the Finish Line ... This medical system was designed to have sufficient capabilities and capacity to handle an increased number of patients so as not to overburden area hospitals with non-critical patients. (Massachusetts Emergency Management Agency, *et al.,* 2014, p. 3)

The 2012 Boston Marathon occurred on an unseasonably warm day with temperatures above 90 degrees, and resulted in a large surge of patients with heat-related injuries. The approach to the 2013 Boston Marathon was intended to build capabilities to adequately handle a similar surge of patients directly on the course as opposed to transporting patients to area hospitals (Massachusetts Emergency Management Agency, *et al.,* 2014, pp. 3-4).

 In 2012 Boston identified a complex attack as one of its top threats/hazards for 2012. Marathon officials also prepared for that possibility.

 On April 15, 2013, 80 representatives from state and local law enforcement, fire services and EMS, the BAA, the Massachusetts Emergency Management Agency (MEMA), the Massachusetts Department of Public Health (MDPH), the Massachusetts National Guard (MANG), the American Red Cross (ARC), the Federal Bureau of Investigation (FBI), and the Department of Homeland Security (DHS) staffed the Multi-Agency Coordination Center (MACC) at MEMA Headquarters in Framingham. The purpose of the MACC was to coordinate public safety, public health and EMS activities across the jurisdictions and provide situational awareness. In addition to the MACC, various state and local coordination and operations centers were also activated, including: the Massachusetts Department of Public Health (MDPH) Department Operations Center (DOC), the Boston Police Department’s (BPD) Law Enforcement Coordination Center (LECC), and the Boston Public Health Commission’s (BPHC) Medical Intelligence Center (MIC). (Massachusetts Emergency Management Agency, *et al.,* 2014, p.4)

 Two bombs detonated within 13 seconds of each other at 2:49 pm near the Finish Line, near Alpha Medical Tent. Here is the report by MEMA and the collaborating agencies:

 Following the explosions on Boylston Street, emergency responders (police, fire and EMS), BAA medical volunteers from Alpha Medical Tent, and numerous spectators and bystanders quickly responded to the critically injured, triaging their injuries and facilitating their transport to area hospitals. The hospitals that received patients rendered life-saving medical care; as a result, every patient that was transported to a hospital from the scene survived.

 Unified Command began to form moments after the explosions when senior law enforcement and emergency management officials came together on Boylston Street and immediately began coordinating priorities. Less than 40 minutes following the explosions, UC shifted operations to a Unified Command Center (UCC) established at the nearby Westin Hotel . . .

 The UC made decisions on initial law enforcement response and investigation issues, including securing the crime scene, determining the extent of the ongoing threat, and protecting critical infrastructure, as well as managing the runners evacuated off the course. The UCC remained operational until Tuesday, April 16, 2013. (Massachusetts Emergency Management Agency, *et al.,* 2014, pp. 4-5)

 The story of the bombings does not end with the Marathon, and the AAR gives fascinating details about the apprehension of the two bombers and other lessons learned with that second operation. For the purpose of demonstrating the powerful application of the principles of Incident Command Structure inherited from FIRESCOPE 40 years earlier, I focus here only on the events of the afternoon of the bombing.

 The After Action Report gives several Key Best Practices:

 **• Strong Relationships and Successful Unified Command.** Strong relationships created and maintained by key leaders were paramount to ensuring commanders, agency heads, and political leaders came together quickly to form Unified Command and facilitate collaborative decision-making after the bombings in Boston . . . . Key leaders had the necessary trust and rapport that allowed for Unified Command to make effective, collaborative decisions, execute mission-tasking, maintain situational awareness, and coordinate public messaging. These relationships also contributed to leadership knowing where to obtain resources, whom to task with missions, how to mobilize mutual aid, how to coordinate communications. . . .

 **• All-Hazards Medical System for Marathon Day.** The all-hazards medical system in place on Marathon Day ensured that the capabilities and capacity to quickly triage and transport the injured from the scene of the incident were immediately available. Under the leadership of the BAA, an enhanced, all-hazards medical system was put in place for Marathon Day with the intent of taking pressure off the area hospital system by minimizing the number of patients who needed to be transported to hospitals.

 On the day of the bombings, medical personnel supporting Alpha Medical Tent near the Finish Line immediately transitioned to a mass casualty response. They established triage and treatment groups and designated the tent as a casualty collection point. All critically injured patients were transported to area hospitals within 50 minutes. Although many patients sustained grave injuries, every patient who was transported to area hospitals survived. This can be directly attributed to the rapid triage, transport and treatment these patients received on scene and at hospitals.

 **• Well-Planned and Organized Re-Opening of Boylston Street**. The City had to await the conclusion of the FBI’s evidence collection and crime scene processing before it could begin work to restore and reopen this vital economic and social area. The restoration of Boylston Street required extensive cleaning, debris removal. and rebuilding. Because the City would have very short notice as to when the area would be accessible to residents, a great degree of planning and preparation was required. The Mayor assigned the responsibility for planning the re-opening of Boylston Street to Boston OEM and tasked all other City departments to support this critical mission. The restoration of Boylston Street was extremely organized; residents and proprietors were able to access their homes and businesses within 18 hours after the area was released to the City and the street was re-opened to the public in less than 36 hours. The ability to restore and reopen Boylston Street so quickly after the area was released back to the City by the FBI is a testament to the strong planning undertaken by the City. (Massachusetts Emergency Management Agency, *et al.,* 2014, pp. 9-10)

 The use of Incident Command System in planning for the 2013 Boston Marathon race and in the response to the bombing resulted in an effective management of the injured victims and restoration of the site of the bombing.

 This was a multi-jurisdictional, multi-level, multi-resource, multi-agency operation. They practiced and drilled together yearly. They shared *common terminology*. They were ready to expand and contract their *modular organization* as needed - and they did! They were unified in their efforts. They assessed risks. They had situational awareness, *management by objectives*, and reliance on an *incident action plan.* They used *chain of command, unity of command,* and *unified command.* They had predesignated incident locations and facilities. They effectively *managed their resources*. They maintained very good *informational and intelligence management*. They had *well-integrated communications* throughout the day's events. They had effective *deployment* immediately after the bombs were detonated, during the triage and rescue and phase, and during the restoration of Boylston Street.

CONCLUSION

 More than forty years ago FIRESCOPE created ICS and its "collection of basic management tools that collectively addresses the common deficiencies that occur during a response" (Loesch & Giordano, p. 251). Originally fashioned for firefighters in Southern California, ICS has expanded into a remarkably powerful system that orders planning and response by providing a common language and structure to facilitate coordination among different agencies. It works best when used routinely for routine operations with familiar collaborators and when practiced regularly in planning for events. When a significant disruptive event occurs, seasoned participants both understand the system and know how to use it well. ICS is for all hazards and hence is versatile in its application. When used regularly, it provides a powerful integration of well-trained responders to get the job done.

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