

Into the Warm Zone: Essential Elements and Considerations for Developing Warm Zone Capabilities

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Introduction

In October of 2017, a scholarship funded study tour to the United States of America (Removed 2017) was undertaken to research how non-law enforcement agencies were addressing a capability gap concerning victim treatment and rescue from within the warm zone of an active shooter hostile event [ASHE]. Most of the agencies visited during this trip had experienced responding to hostile events during various stages of their planning and implementation of warm zone operations. This paper intends to revisit the topic by reviewing the various after-action reports and critical incident reviews now available from these incidents to provide a set of essential elements and considerations for effective policy development and training for warm zone operations, particularly in Australia. The incidents researched are;

- 2013 LAX Airport Active Shooter;
- 2015 Terrorist Attack at the IRC in San Bernardino;

- 2016 Pulse Nightclub Terrorist Attack; and
- October 1, 2017, Las Vegas Shooting.

Drawing on the lessons learnt from these incidents this paper will discuss the need for: a warm zone capability and the unified command approach required to support it; the requirement for policy and training to ensure preparedness; and the importance of post-incident wellbeing of first responders. Recurring themes will be addressed such as communications difficulties, incident durations, and resource management, among other considerations during warm zone operations.

Background

Following the Columbine High School shooting in Colorado USA in 1999, a paradigm shift commenced among law enforcement agencies that modified policy and training to engage an active shooter as early as possible to

neutralise the threat and reduce the number of victims (Braziel et al. 2016). As this evolved it was recognised that further work was needed in this area to improve victims' chances of survival of intentional mass casualty events.

Traditionally paramedics and firefighters would not enter a scene until provided with the 'all clear' from the police. Arlington County Fire Department [ACFD] recognised that this delay could lead to more lives lost, so in 2009 they developed the Rescue Task Force [RTF] concept (Iselin 2009). This concept sees firefighters and paramedics armed with trauma equipment and ballistic protection form integrated teams with police who provide a force protection element to escort them into the warm zone for victim treatment and rescue. Since its inception, agencies across the USA and indeed the world (Harris 2016) have adopted variations of this method to enhance their response.

In 2013 the benefits and needs of this capability were further reinforced with the release of the Hartford Consensus (Jacobs et al. 2013). Developed by representatives from U.S law enforcement, pre-hospital, military, and trauma fields it details a strategy that

aims to improve the survivability of victims of intentional mass casualty incidents. The key activities recommended are contained within the THREAT acronym:

- Threat Suppression
- Haemorrhage Control
- Rapid Extrication to Safety
- Assessment by medical Providers
- Transport to definitive care

Having regard for the THREAT acronym and the activities that it represents, it was clear to me that within many parts of Australia, a capability gap existed relating to haemorrhage control and the rapid extrication of victims from the warm zone of hostile events. As a result, in 2017 I travelled to the USA to engage with agencies and undertake training in how to best address this issue. I engaged with the Arlington County and Fairfax County Fire Departments in Virginia, the San Bernardino County and Los Angeles City Fire Departments in California, and the Clark County Fire Department (CCFD) and Las Vegas Metropolitan Police in Nevada. I was also fortunate to undertake courses in trauma care for high threat environments and attend the EMS World Expo whose keynote speech

was presented on the Pulse Nightclub Terrorist Attack. Many of these agencies I engaged with had responded to hostile events in recent years and now had plans in place for warm zone operations. These events provided learning opportunities in how to better prepare and respond to future incidents, whilst also identifying successful aspects of these agencies' responses. The incidents discussed in this paper are:

2013 LAX Active Shooter

On the morning of November 1, 2013, a gunman entered Terminal 3 at Los Angeles International Airport where he shot a TSA officer at point-blank range, killing him. The gunman then continued through the airport shooting and wounding other victims until he was taken into custody by police approximately 7 minutes later. Despite his quick apprehension, the incident caused major disruptions with the response and recovery lasting almost 30 hours (Los Angeles World Airports 2014).

2015 San Bernardino Terrorist Attack

A terrorist attack now known to be perpetrated by a husband and wife

occurred at the Inland Regional Centre [IRC] in San Bernardino California on December 2, 2015. Beginning as an active shooter incident it transitioned into a city-wide search for the attackers and eventual shootout with police. 14 civilians were killed and over 20 wounded in the shooting at the IRC, with an Improvised Explosive Device [IED] planted there by the attackers fortunately not detonating (Braziel et al. 2016).

2016 Pulse Nightclub Terrorist Attack

At approximately 2:00 am on June 12 2016 a gunman opened fire at the Pulse Nightclub in Orlando. This mass shooting evolved to a barricaded shooter with hostages and alleged explosives present. At the time, it was the deadliest terrorist attack in the United States since September 11, 2001, with 49 people killed and 58 injured (Straub, Jennings, & Gorban, 2018).

October 2017 Las Vegas Shooting

In Las Vegas a lone gunman, shooting from the 32nd floor of the Mandalay Bay Resort and Casino, targeted the crowd at the Route 91 Harvest Festival below on the night of October 1 2017. Before

taking his own life, the gunman managed to kill 58 people and injured more than 850, including first responders (Federal Emergency Management Agency 2018).

The Warm Zone

The warm zone or indirect threat area (C-TECC 2019) is an operational area within a hostile event where a potential threat exists but is not direct or immediate. (Straub, Jennings, & Gorban, 2018). The warm zone is located between a hot zone [direct threat] and a cold zone [outer perimeter]. An attacker may have passed through this area leaving numerous wounded victims requiring medical treatment and extrication.

The Need for a Warm Zone Capability

Traditionally the warm zone was not entered by Emergency Medical Services (EMS) or Fire Services. Instead, crews would stage until the area was cleared by police and deemed a cold zone. A review of the response operations to the 2013 LAX active shooter incident raised concerns that while police move to engage a threat, critically injured victims may succumb to their injuries before an area is secure, therefore Emergency Medical

Services [EMS] need to be trained to enter scenes under police protection (Los Angeles World Airports 2014). While the scene at the Pulse Nightclub remained a 'hot zone' for at least 20 minutes, after that it could have transitioned into a 'warm zone' where *"it would have been reasonable for fire or EMS to enter with a law enforcement cover to assist"* (Straub et al. 2017). The critical incident review lesson learned 6.27 recognised this issue at the San Bernardino attack. While the Rancho Cucamonga Fire Department rescue task force responded to the scene, they were not deployed to assist in victim extrication from the warm zone. This left the under-equipped police and probation officers to undertake the difficult task of victim rescue. As a result a recommendation was made calling for the development of medical teams, designed to work in the warm zone to move victims to mass casualty triage more quickly (Braziel et al. 2016).

The need for this capability had been addressed in Las Vegas, which saw the largest deployment of RTF teams to date on October 1, 2017 (Federal Emergency Management Agency 2018). The first RTF mobilised that

night was able to begin accessing victims within the concert grounds 19 minutes before police had breached the shooter's room and confirmed his death (Federal Emergency Management Agency 2018). Had this capability not existed further victims may have expired waiting at least 20 minutes for EMS crews awaiting the all-clear from police before entering the grounds. Of added benefit was the ability to redeploy some RTF teams to respond to pending medical calls caused by victims who had fled the initial scene (Federal Emergency Management Agency 2018). This ensured crew safety had these locations been part of a series of unfolding complex coordinated terror attacks.

Essential Elements

Learning from these incidents, the following practices are recommended to ensure the effective development and safe deployment of warm zone capabilities.

Unified Command

A unified approach is needed to effectively deploy and monitor a warm zone capability. A Unified Command enables the supervisors from the multiple agencies involved, including

police, the Fire Department (FD), and EMS, to come together for the duration of the incident to facilitate communication, situational awareness, operational response, allocation of resources, and service delivery (Straub et al. 2017). Other key stakeholders such as airport authorities with intimate knowledge of the incident location can also play an integral role in a unified command. While a unified command of law enforcement agencies was established within the first hour of the Pulse nightclub attack. Orlando Fire Department [OFD] and other EMS agencies were not included and therefore not aware of decisions made and discussions had (Straub et al. 2017).

A review raised the importance of establishing Unified Command early, and the importance of multi-agency coordination systems, after they found the multi-agency response to Pulse was at times confused and uncoordinated (Straub et al. 2017). The after-action review of OFD stated that *"distance, inadequate radio communications, and the lack of unified command"* impacted the OFD response to Pulse (Straub, Jennings, & Gorban, 2018). An example of the negative

effects this had on OFD situational awareness occurred when police breached the exterior wall of the nightclub to end the siege. OFD firefighters and medics were taken by surprise initially believing an IED had been detonated (Straub, Jennings, & Gorban, 2018). Miscommunications like this could easily lead to the loss of valuable EMS and FD resources, due to safety concerns or responder's abilities limited due to their body's stress response (Straub et al. 2017), as they were not informed and/or prepared for a planned occurrence.

Operationally the lack of Unified Command also had an effect on removing victims, many of whom were too severely injured to self-extricate (Straub et al. 2017). Numerous physically exhausted law enforcement officers carried injured people to the triage area, while OFD operated two command posts separate to law enforcement, one of which was awaiting the "safe to enter" (Straub et al. 2017). In fairness once provided the 'safe to enter' by police, FD and EMS did assist at the triage area of this incident (Straub et al. 2017). What should also be noted is that while OFD had begun some RTF discussions, this

procedure was not yet in place at the time of the attack.

Similarly, the shooting at LAX in 2013 occurred at a time when LAFD was still developing its warm zone capability (Los Angeles World Airports 2014). A public safety working group review determined that it took around 45 minutes for agencies to join together to form a truly Unified Command with the first incident objectives meeting not occurring until 1.5 hours after the incident began, despite the shooter being apprehended within 7 minutes of the initial shooting (Los Angeles World Airports 2014). Once established the Unified Command was said to be successful. However, the delays which will be discussed later in this paper were said to hamper "*the Incident Commanders' ability to coordinate law enforcement and fire department activities related to victim extractions from the danger area*" (Los Angeles World Airports 2014).

Difficulties will always exist with coordination, resource management, and crew allocation at incidents of this scale and complexity. While having a Unified Command can assist in allocating the best resources for the task, this process can be hindered by

'self-responding' or 'self-dispatching' resources. The incidents reviewed in this paper identified some degree of difficulty in dealing with this issue, so it is particularly important with warm zone operations that responders report to a Unified Command to be allocated tasks and provided the most up to date information to help develop situational awareness. On top of these difficulties, you need to remember that during a major incident the usual calls for service (some related to the event, others not) will continue.

Uncontrolled self-deployment depletes the resources that may be needed to respond to these calls and maintain service delivery. Success in the October 1 Las Vegas operation was the ability of the Unified Command to redeploy RTF assets once operationally feasible to start clearing a backlog of approximately 60 related medical calls in the area (Federal Emergency Management Agency 2018). The use of RTF teams in this case reduced the need to draw in further resources that were already maintaining service delivery across the county.

Multi-Agency Training

Another success of the Las Vegas response to October 1 was the preparedness, confidence, and interoperability of agencies that grew from training and collaboration from at least 3 years prior (Federal Emergency Management Agency 2018). These activities include;

- Training on coordinated communication and movements within a Rescue Task Force configuration with law enforcement and FD.
- Mandatory MCI or active shooter tabletop exercises for Las Vegas Metropolitan Police Department [LVMPD] Lieutenants.
- Incident command training to assist with interoperability.
- Presentations to Clark County Fire Department by LVMPD on training, culture, and informational awareness on emergency response; and
- Presentations to LVMPD academy classes by CCFD on, CCFD response models, training, culture, resources, and their mission in assisting law enforcement (Federal

Emergency Management Agency 2018).

Personnel from Clark County fire and Metro police both noted the major strengths in their response and integration was due to familiarity with each other with many recognising one another from prior training (Federal Emergency Management Agency 2018). It was this established relationship that Observation 41 describes as, allowing for the *“execution of an effective, integrated response to the incident”* (Federal Emergency Management Agency 2018).

Following the LAX shooting the need to *“conduct training and exercises that require competence in the exchange of situational awareness, coordinated planning, and joint decision making”* was raised (Los Angeles World Airports 2014). The need for agencies to regularly prepare, train and exercise together in Lessons learned from after-action reports and critical incident reviews was noted in the critical incident review of the Pulse Nightclub attack (Straub et al. 2017). In San Bernardino, it was evident that combined operations with police were

not something that fire (FD) and EMS were accustomed to (Bobko et al. 2018). It was however fortunate that a Firefighter/Paramedic who was embedded into a police SWAT team and training nearby was on the scene early and able to be that conduit, performing triage and managing the medical operation within the warm zone (Bobko et al. 2018). It was noted however that there is a distinct difference between a Tactical Medic and a Rescue Task Force (Bobko et al. 2018), to be discussed later in this paper.

Additionally, based on the events that unfolded at the Pulse nightclub attack and recommendations from San Bernardino, training should also include identification, notification, and isolation of potential secondary devices (Braziel 2016). This includes consideration for devices within the scene, potential triage areas, or command post locations. It is believed the device left by the San Bernardino attackers had the sole purpose of killing or injuring first responders by being remotely detonated (Braziel 2016).

Training Quality

The quality of this training to prepare our first responders for warm zone activities is imperative. The issue has been raised by some that, often, training exercises for law enforcement stop once a threat is eliminated, leaving a lack of appreciation and knowledge of how the response further transpires as it transitions into a mass casualty incident [MCI] requiring EMS involvement (Braziel et al. 2016).

Realistic training that better prepares first responders for what they may encounter is needed in the preparation for the mental and physical stresses experienced during a response to a hostile event (Braziel et al. 2016). In San Bernardino responders were met with the strong smell of gunpowder, victims with devastating wounds begging for help, excess amounts of blood and water across the ground, and the sound produced by a broken sprinkler pipe combined with the resulting fire alarm. (Braziel, et al. 2016). The first responders at Pulse were said to have been confronted with a similar situation described as “a *barrage of sensory stimuli*” (Straub et al. 2017). Many of the police at Pulse had participated in training drills drawn

from after-action-reports with high environmental stimulation, including darkness, alarms, and screaming (Straub et al. 2017). What will stay with many from this incident though was the grabbing of their ankles by victims pleading for help and the constant ringing of victim’s mobile phones from loved ones trying to locate them (Straub et al. 2017). When officers that responded to Pulse were asked: “*How do you train and prepare for a situation like this?*”, many stressed the importance of realistic training that is both physical and mental, citing that “*your body can’t go where your mind has never been*” (Straub et al. 2017).

Now if we are going to begin deploying paramedics and firefighters into these environments, we need to deliver quality reality-based training to help prepare them as best we can because these are not the traditional environments they are accustomed to working in.

Policy

While training quality is incredibly important, it needs to be based on a developed policy with a framework for personnel to work under. All the beneficial training and relationships

displayed by Las Vegas were the result of considerable policy improvements (Federal Emergency Management Agency 2018). In 2013 the Southern Nevada Fire Operations [SNFO] Hostile MCI working group was established with participants from all Southern Nevada Fire (FD) and Law Enforcement agencies (Federal Emergency Management Agency 2018). This saw a Hostile MCI Response Policy created and adopted by all within the region to ensure interoperability (Federal Emergency Management Agency 2018).

Developing the policy is just a start. Once produced, the policy needs to be continuously reviewed and amended. According to John Miller, Deputy Commissioner of Counterterrorism and Intelligence at the New York City Police Department, *“Terrorism, like technology – and sometimes because of technology – is constantly evolving. If you’re working on the techniques you developed two years ago, you’re way out of date”* (Straub, Jennings, & Gorban, 2018). It was outdated policies and procedures that to some extent, constrained the OFD response to Pulse (Straub, Jennings, & Gorban, 2018). On the night Orange County Fire

Rescue who was providing mutual aid assistance at the scene had additional ballistic vests available in the vehicles driven by their captains. An OFD assistant chief did not allow OFD personnel to use them given that OFD had no policy on ballistic vests (Straub, Jennings, & Gorban, 2018). Following the Las Vegas shooting a need to update their policy on RTF composition arose, with a large number of RTF teams mobilised that night exceeding the available Captains they had on the scene to fill the leadership positions of each team as required in their policy (Federal Emergency Management Agency 2018).

Radio Communications

While the importance of policy and training for warm zone operations and Unified Command cannot be stressed enough, interoperable communications are also key (Los Angeles World Airports 2014). During the LAX shooting communications issues found some on the scene having to resort to mobile phone use (Los Angeles World Airports 2014), which raises issues in being able to contact and communicate with the right people to share that situational awareness. The majority of the multi-agency events had

experienced some form of communications issues or difficulties.

For agencies conducting warm zone operations though, effective radio communications are imperative to ensure situational awareness is maintained between unified command, the warm zone assets, and police contact teams engaged in locating and neutralising the threat.

Emerging out of the San Bernardino attack was advice to consider the merging of radio systems and protocols between police, FD, and EMS (Braziel et al. 2016) after differences between corresponding communication networks were noted (Bobko et al. 2018). While a lack of radio communication between police and fire agencies were said to have impacted the on-scene response at the Pulse Nightclub (Straub, Jennings, & Gorban, 2018) a desirable capability identified in this report was their ability to patch Orlando Police, Fire, and other agency radio channels together (Straub, Jennings, & Gorban, 2018).

The use of multiple radio channels at these events allows for effective communications with incident command and operational sectors able

to be split to communicate without overwhelming a single radio channel. This can however confuse some responders working at the incident, unsure of which channel to use (Federal Emergency Management Agency 2018). These issues reinforce the need for effective inter-agency communications planning to be a priority before an incident occurs (Braziel et al. 2016), and the need for a communications plan to be disseminated to all responders across all channels during a large-scale multi-agency event (Federal Emergency Management Agency 2018).

During these responses crews also need to maintain radio discipline and only communicate necessary information (Federal Emergency Management Agency 2018).

Another important communication issue that was raised, during the course of this research, was radio signal issues. Some crews working within Mandalay Bay on October 1 experienced troubles transmitting and receiving crucial information during the response (Federal Emergency Management Agency 2018). Police in Orlando had the same experience when dealing with a second report of an

active shooter at the Orlando Regional Medical Centre during the Pulse nightclub attack (Straub et al. 2017). Following the San Bernardino attack, a recommendation was made for agencies to identify locations within their jurisdictions that pose radio reception and transmission issues after difficulties were faced by the crews operating within the IRC on that fateful day (Braziel et al. 2016).

Equipment

“The increasing role that the Fire and Emergency Medical Services play in terrorism and mass violence response requires non-traditional policies, procedures, training, and equipment to meet these challenges and ensure an effective response in coordination with Law Enforcement” (Straub, Jennings, & Gorban, 2018). The Committee for Tactical Emergency Casualty Care [C-TECC] established in the USA provides evidence-based guidelines, relevant to first responder skill sets, for the treatment of casualties within high threat environments, including the warm zone or, as they refer to, Indirect Threat Care (C-TECC 2019). In preparing a warm zone capability the trauma equipment carried should be in line with these guidelines designed to

address the preventable causes of death, namely Major Haemorrhage, Airway, Breathing/Respirations, Circulation, Head & Hypothermia, and Everything Else [*MARCHE*] (C-TECC 2019).

Ballistic protection will not be addressed in this paper, though agencies need to ensure they have appropriate and sufficient equipment to deal with the large number of trauma patients they may be confronted with. With over 800 patients in Las Vegas, trauma equipment was exhausted within minutes of treating initial patients, quickly overwhelming crews (Federal Emergency Management Agency 2018).

While this amount of casualties may sound excessive, it is reasonable to expect similar numbers in the event an explosion occurs at a major sporting venue within Australia (Austadiums 2020). A consideration that could assist in these circumstances are throw kits containing first aid supplies catered to treating trauma patients (Federal Emergency Management Agency 2018). Recommended as part of the Las Vegas October 1 review, these kits could be pre-staged at all special

events and passed to assisting members of the public during incidents or handed out by RTF teams creating a force multiplier for first responders (Federal Emergency Management Agency 2018).

Once treated the ability to move patients out of the warm zone needs to be considered. Difficulties in this were raised with the water-soaked patients at San Bernardino who become quite slippery and difficult to hold for the probation officers trying to carry them out without any litters or tactical stretchers (Braziel et al. 2016). Similar difficulties were likely at Pulse, with police officers involved in the extrication later describing it as leaving them “soaked” in blood (Straub et al. 2017). This also raises the need to ensure appropriate personal protective clothing to protect responders from any blood-borne pathogens they may be exposed to (Straub et al. 2017).

Post-Incident Wellbeing

To this point we have focused on the operational aspects of undertaking this role, it is however important to plan how to manage the wellbeing of these responders post-incident. Following the San Bernardino attack, it was

recommended that responder welfare play an integral part in interagency planning, training, and exercises (Braziel et al. 2016).

The OFD after-action report discussed the importance for agencies to acknowledge and provide mental health support that accommodates every individual as there is no one size fits all (Straub, Jennings, & Gorban, 2018). This support needs to be available in the days, weeks, months (Straub, Jennings, & Gorban, 2018), and possibly years post-incident.

Findings into their response to Pulse highlighted that no Chaplain or trained individual was dispatched to the scene, which meant an absence of individual debriefs and connecting people to mental health services occurred before those individuals returned to shift or were relieved (Straub, Jennings, & Gorban, 2018). Additionally, some units were placed into service and responded to calls after leaving Pulse, with no process in place to recall staff to relieve these crews involved in a traumatic response to Pulse (Straub, Jennings, & Gorban, 2018). One individual spoke of feeling alone after the incident, while another discussed

having 40 missed calls from his wife (Straub, Jennings, & Gorban, 2018).

The morning after the Las Vegas shooting, all Clark County Fire Department crews who had been involved in the response were required to report to a Critical Incident Stress Debriefing before heading home (Federal Emergency Management Agency 2018). This allowed support services to be initiated and continue into the future having established baseline contact (Federal Emergency Management Agency 2018). This report does not mention the debriefing strategies of other mutual aid agencies such as Henderson Fire Department personnel who were also involved in RTF operations (Federal Emergency Management Agency 2018), making it difficult to comment on this topic further. It does however appear that crews were returned to operational service after being released from the shooting scene (Federal Emergency Management Agency 2018).

Considerations

Having recommended the essential elements to warm zone operations above, the following topics should be taken into consideration during

preparedness and response operations for active shooter hostile events.

Incident Duration

Agencies may feel that through immediate and effective police response the need for a warm zone capability is redundant. The reality is hostile events can create complex and multiple scenes requiring a considerable amount of resources for an extended period.

Despite the shooter at LAX airport being engaged by police and arrested within 7 minutes of the initial shooting, it took police several hours to search the airport to ensure no further threats remained (Los Angeles World Airports 2014). In San Bernardino, the first shots were reported at 10:58 am with the shooting over within five minutes, yet an Improvised Explosive Device [IED] was later located meaning authorities did not declare the buildings clear until 9:29 pm that night (Braziel et al. 2016). At the Pulse Nightclub, from the initial shooting at 2:02 am, the attacker remained actively engaged in a barricaded hostage situation until he was shot at 5:15 am, over 3 hours since the attack commenced (Straub, Jennings, & Gorban, 2018). Then with

the potential for IED's, the scene itself was not declared safe until 11:15 am, some nine hours after the initial victims were injured (Straub, Jennings, & Gorban, 2018). With the October 1 shooting in Las Vegas, it was 1 hour and 15 minutes between the first shots being fired and police confirming that the gunman was down, from an apparent self-inflicted gunshot wound (Federal Emergency Management Agency 2018). Rescue Task Forces continued to operate until all floor sweeps of Mandalay bay were completed at 5:00 am, representing a 6 hour window from the first RTF being deployed (Federal Emergency Management Agency 2018).

Unified Command Location

In establishing a location for the Unified Command post, responders need to consider all agencies involved. The delay in LAFD establishing a Unified Command with LAX Airport Police was due to security concerns, with the ongoing threat environment LAFD felt the location chosen by the police was too close to the shooting scene (Los Angeles World Airports 2014). The location was also said to have been too noisy with the delay further said to hamper victim extrication (Los Angeles

World Airports 2014). Following the San Bernardino attack, the following advice was issued: *“Responders should constantly evaluate security risks of command post locations and make appropriate adjustments as required. Initial command post locations may inadvertently be located in an area later determined to be at risk for secondary devices or attacks”* (Braziel et al. 2016).

Managing Resources

Spread over such a large area, the Las Vegas shooting saw a need to distribute resources over multiple locations. Equipment from their MCI unit was split between two locations, a North and South Unified Command established, and RTF teams were deployed from both South and North staging areas (Federal Emergency Management Agency 2018).

The sheer volume of RTF teams deployed lead to a span of control issue, with the 12 RTF teams deployed from the North branch proving difficult for the branch director to manage, with some teams having to call dispatch to gather information (Federal Emergency Management Agency 2018). This led to a recommendation for additional staff to

help coordinate RTF teams at large scale incidents (Federal Emergency Management Agency 2018).

The after-action report also suggested that demobilisation plans be established during an incident with consideration of current and forecasted operational needs and approved by the incident commander (Federal Emergency Management Agency 2018). This advice arose after Henderson Fire Department resources were advised to clear and return to service, despite still undertaking warm zone operations as part of an RTF conducting floor sweeps at Mandalay Bay (Federal Emergency Management Agency 2018).

Tactical Flow

The flow of the tactical situation can see a transition occurring back and forth from a hot and warm zone as new threats emerge. Once cleared by police, areas within the IRC in San Bernardino transitioned to warm zones. This changed just after 5:00 pm when an IED planted by the terrorists was located, transitioning this area back into a hot zone as the explosive represented a direct threat (Braziel et al. 2016).

While this was located after victims had been removed (Braziel et al. 2016), it highlights the need to maintain situational awareness and to continue to make tactically sound decisions. Similar circumstances occurred at the Pulse Nightclub with areas within the nightclub and near the attacker's vehicle in the car park transitioning back and forth between hot and warm zones due to the fear of IEDs (Straub, Jennings, & Gorban, 2018), reinforcing the need for an ongoing assessment of risks. Discussions following the San Bernardino attack (Braziel et al. 2016), and the Pulse Nightclub attack (Straub, et al. 2017) highlighted the transition of situations from a dynamic active shooter to a static situation involving a siege. Training should reflect this possibility (Braziel et al. 2016) to better prepare responders for these transitions and the decisions needed to alter tactics

Access

Depending on the incident location crews deploying into the warm zone need to consider access throughout the incident scene or structures. Crews may be confronted with locked or access-controlled doors or areas barricaded by victims. During the San

Bernardino response, one officer requested breaching tools and electronic swipe cards to enable access throughout the building (Braziel et al. 2016). Being a staff member (Braziel et al. 2016) it is likely one of the attackers had access to extensive parts of the building.

Tactical Medics Are Not an RTF

The roles of Tactical Medics and a Rescue Task Force are quite different. Tactical Medics form part of a Police Tactical Group with a medical support mission in the hot zone, whereas a Rescue Task Force is a warm zone asset utilised for the treatment and extrication of patients from a warm zone. Different Tactical Medic models exist with some policing agencies training up officers as dual role Operators/Medics, while others embed experienced paramedics into their teams; some arming them, others not (Morrissey 2013). New South Wales is the first state in Australia to embed ambulance Paramedics into Police Tactical Units following the Lindt Café siege of 2014 (Bath 2018).

In San Bernardino, the embedded Tactical Medic was said to have significantly enhanced victim extrication and survival (Braziel et al. 2016) as he

was able to begin triage fairly early on (Bobko et al. 2018). However, had the situation evolved differently, the Medic may have been required to redeploy to another scene to fulfil his primary mission within the SWAT team leaving those victims at the IRC warm zone waiting for assistance. Likewise, the night of the Pulse attack can be used as an example of the need for Tactical Medics and a warm zone capability. As police breached the nightclub to end the siege an Orlando police SWAT officer was shot in the helmet by the attacker (Straub F. et al. 2017). A Tactical Medic working away from their SWAT team, triaging or treating victims in a warm zone, could see a delay in the initial treatment of a critically injured officer. A team of medics and firefighters trained to provide warm zone care could augment the response and ensure quicker victim access and evacuation, without relying on Tactical Medics who are usually in smaller numbers, carrying less equipment to maintain mobility (Bobko et al. 2018), with a primary mission of supporting police tactical units.

Clearing Areas

Uncertainty of areas searched, with some rooms searched more than once,

resulted in a recommendation for a standardised marking system following the San Bernardino attack (Braziel et al. 2016). It is hoped a predetermined system would easily identify areas searched, cleared, and secured by police (Braziel et al. 2016). This could provide an important redundancy for crews undertaking warm zone operations, ensuring if a miscommunication occurs via the radio these visual indicators would alert crews before they venture into an uncleared area. A secondary marking system could also be used to identify areas where victims are located, and extrication needed.

Firefighters as a Force Multiplier

The EMS systems across the USA typically sees Advanced Life Support provided by combined Fire/EMS Departments. While that model is different to the Australian context, where ambulance services are run separate from fire services, the use of firefighters in hostile act response can act as a force multiplier to improve available resources and service delivery at an event. This enhancement has been recognised in London with moves to train firefighters to assist ambulance officers within the warm

zone (Harris 2016). In 2018 the Australasian Fire and Emergency Service Authorities Council [AFAC] released the “*Emergency Services Support Role to Deliberate High Threat Incidents*” guideline (AFAC 2018). This doctrine advocates for both fire and ambulance services within Australia to develop policy and training for escorted warm zone operations and high threat incident response (AFAC 2018).

The initial tasks undertaken within a warm zone involve haemorrhage control, airway management, and extrication (C-TECC 2019), easily achieved by the appropriately trained firefighter. Therefore, rather than two Advanced Life Support [ALS] paramedics forming a single RTF with police, firefighters are utilised and split the paramedics into two separate teams. The medical component of each RTF will then comprise one paramedic and at least two firefighters. The paramedic could provide the clinical lead directing firefighters who will assist with treatment and victim rescue. Within Australia, Fire Rescue Victoria (Fire Rescue Victoria 2020) and aviation firefighters from Airservices Australia (Airservices Australia 2018) are prime candidates to develop this

capability as they already provide emergency medical response in support of ambulance services.

Conclusion

The hostile events discussed in this paper occurred at times when individual agencies were at various stages of capability development for warm zone operations. From the LAX Airport active shooter in 2013 to the events of Las Vegas on October 1, 2017, similar learnings and observations about capability development were evident. Overall, the most prepared agencies appear to have been those in Las Vegas, which represent the agencies faced with the largest scale incident researched in this paper.

The interagency, policy, training, and cooperation cannot be stressed enough as contributing to successes on that fateful night. The courage shown by the

first responders at all of these incidents should be highlighted as they dealt with extremely dynamic and difficult situations. All agencies displayed positive attributes in their response as well as clear learning points. It would be careless to not take note and learn from their experiences to improve our preparedness for future hostile events within Australia. While all the incidents in this paper involved the use of firearms by the perpetrators the learning for warm zone capabilities can be adapted to all forms of hostile event response including response to IED's, hostile vehicles, active violence with fire, edged weapons, and combinations of. Additionally, with the current occurrences across the USA (Berman 2020), further consideration for the deployment of similar warm zone capabilities at civil disorder incidents should be explored.

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