A STANDARDIZED DOMESTIC COMMON OPERATING PICTURE (COP) IS NEEDED BY THE NATIONAL GUARD OF THE UNITED STATES

A thesis presented to the Faculty of the U.S. Army Command and General Staff College in partial fulfillment of the requirements for the degree

MASTER OF MILITARY ART AND SCIENCE
Homeland Security Studies

by

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Fort Leavenworth, Kansas
2013-02

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	**2. REPORT TYPE**	**3. DATES COVERED** *(From - To)*
13-12-2013	Master's Thesis	FEB 2013 – DEC 2013

4. TITLE AND SUBTITLE

A Standardized Domestic Common Operating Picture (COP) is Needed by the National Guard of the United States

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Major Shawn W. Starowesky

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
U.S. Army Command and General Staff College
ATTN: ATZL-SWD-GD
Fort Leavenworth, KS 66027-2301

8. PERFORMING ORG REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)

10. SPONSOR/MONITOR'S ACRONYM(S)

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for Public Release; Distribution is Unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The National Guard of the United States is responsible for the first military response to local, state, and federal emergencies, disasters and events beyond the capabilities of civilian emergency responders. As such, the creation of a collaborative Common Operating Picture (COP) is paramount for each level of the responder community. Used properly, a COP can capture all pertinent data regarding the event and, with the proper software and devices, broadcast it to the response community in near real-time. A COP gives leaders the ability to see their resources (people, equipment and supplies) and if incorporated at all response levels, can prevent duplication of effort and the waste of resources. While the Department of Homeland Security is responsible for the development and oversight of the COP for the federal government, the department is sorely behind in its implementation. Coupled with hundreds, perhaps thousands, of separate government organizations nationwide, the application of a comprehensive COP seems impossible. This study, while originally focused solely on the National Guard, finds a need for vast improvement throughout the whole of government in regards to COP development and implementation.

15. SUBJECT TERMS
National Guard; Common Operating Picture; Common Operational Picture; COP; Shared Situational Awareness; Situational Awareness; Emergency Management; Homeland Security; Homeland Defense; DSCA

16. SECURITY CLASSIFICATION OF:			**17. LIMITATION OF ABSTRACT**	**18. NUMBER OF PAGES**	**19a. NAME OF RESPONSIBLE PERSON**
a. REPORT	**b. ABSTRACT**	**c. THIS PAGE**			**19b. PHONE NUMBER** *(include area code)*
(U)	(U)	(U)	(U)	87	

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

MASTER OF MILITARY ART AND SCIENCE

THESIS APPROVAL PAGE

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

A STANDARDIZED DOMESTIC COMMON OPERATING PICTURE (COP) IS NEEDED BY THE NATIONAL GUARD OF THE UNITED STATES, by Major Shawn W. Starowesky, 87 pages.

The National Guard of the United States is responsible for the first military response to local, state, and federal emergencies, disasters and events beyond the capabilities of civilian emergency responders. As such, the creation of a collaborative Common Operating Picture (COP) is paramount for each level of the responder community. Used properly, a COP can capture all pertinent data regarding the event and, with the proper software and devices, broadcast it to the response community in near real-time. A COP gives leaders the ability to see their resources (people, equipment and supplies) and if incorporated at all response levels, can prevent duplication of effort and the waste of resources. While the Department of Homeland Security is responsible for the development and oversight of the COP for the federal government, the department is sorely behind in its implementation. Coupled with hundreds, perhaps thousands, of separate government organizations nationwide, the application of a comprehensive COP seems impossible. This study, while originally focused solely on the National Guard, finds a need for vast improvement throughout the whole of government in regards to COP development and implementation.

ACKNOWLEDGMENTS

This thesis could not have been completed without the assistance of a few key individuals. First, I must thank my wife, Heather, for pushing me to complete this project each time I doubted the possibility of getting it done. She has been my number one supporter for over 15 years and without her and our children giving me the space and time to work on this endeavor, I never would have seen it to completion. The “best year of my life” was made all the easier thanks to my loving family. While we enjoyed our Fort Leavenworth experience, I look forward to the next chapter in this crazy Army life. A sign in our kitchen reads: “Home is Where the Army Sends Us” and I cannot thank her and our boys enough for their love and devotion.

To my sons, Connor and Zach, thank you for your courage and commitment each time we relocate to accommodate my work. You are both extraordinary young men and I am so proud of you. I hope someday you will understand why I chose this profession and why it is my passion. One of my favorite quotes is by Thomas Paine and sums-up how I feel: “If there must be trouble, let it be in my day that my child may have peace.” You are the reason I do what I do.

To my committee chairman, Dr. Eric Morrison, let me express my sincerest gratitude. Dr. Morrison was committed to seeing me complete this project and gave me great advice and counsel every step of the way. I believe our mutual interest in sustainment and making things easier on the force led to a great working relationship throughout the process. To Mr. Robert Brown and Mr. Robert Garven, gentlemen thank you for serving as committee members. You did not know me before I started this thesis but each of you helped me mold it and saw me through to completion.

Had I heeded A211 time management advice from Dr. Constance Lowe, I know the long weekends and late nights of thesis research and writing could have been avoided. As a self-professed procrastinator, however, I am pleased to say if you put your mind to it, this project can be completed. Thanks to Dr. Shawn Cupp, my Homeland Security Studies professor, for your guidance along this journey as well.

I would be doing a disservice if I did not thank Rusty and John at the Combined Arms Research Library (CARL) for their exhaustive research for scholarly articles related to my topic. These gentlemen are research magicians who can find anything if given enough time and parameters. Midway through my research, CARL was closed for three weeks and moved from its temporary quarters back into the newly renovated Eisenhower Hall. Rusty continued to sift through sources for me until they made him unplug his computer.

Finally, the dedicated Army Civilians listed above endured “furlough Fridays” and a two-week government shutdown during this academic year. You persevered and I am eternally grateful to you all. Thank you.

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ACRONYMS

AAR	After Action Review
ANG	Air National Guard
ARNG	Army National Guard
COP	Common Operating Picture or Common Operational Picture
DHS	Department of Homeland Security
DoD	Department of Defense
EMA	Emergency Management Agency
EOC	Emergency Operations Center
FEMA	Federal Emergency Management Agency
JIEE	Joint Information Exchange Environment
LL	Lesson(s) Learned
NG	National Guard
NGB	National Guard Bureau
NGCC	National Guard Coordination Center
NMSZ	New Madrid Seismic Zone
PKEMRA	Post Katrina Emergency Management Relief Act
POTUS	President of the United States
SecDef	Secretary of Defense
SSA	Shared Situational Awareness
TAG	The Adjutant General

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CHAPTER 1

INTRODUCTION

> In addition to training and overseas deployments, every day governors call out their national guards to help citizens in need. And why? Because we are a community-based force. As America's first military responders, the National Guard mobilizes in times of emergency, but we always have to be ready when the governor calls upon us for critical events.[1]
>
> — Major General William Reddel, Adjutant General, New Hampshire

Setting the Stage

As he lay sleeping in the early morning hours of 16 December 1811,[2] President James Madison awoke to the earth shaking beneath his White House bed. At about the same time, church bells were ringing across the eastern United States, the Mississippi River was reported to have flowed backwards and farmers claimed the earth under vast Midwestern farmlands liquefied.[3] The impact zone for the early-1800s earthquakes and aftershocks was nearly 900 miles from Washington, DC near the town of New Madrid, Missouri. The earthquakes that spurred these significant events happened in and near what researchers now call the New Madrid Seismic Zone (NMSZ) between December 1811 and February 1812.

While the exact statistics for the population densities and death tolls in the NMSZ during the 1811-1812 quakes are unknown, articles suggest that it was "sparse"[4] in comparison to today. The NMSZ of 1811-1812 was vastly different in population and infrastructure. In 1812 there were no bridges spanning the Mississippi River. Today there are 222 bridges crossing the 2,350 mile long[5] Mississippi River, but only 14 major bridges within the 150 mile stretch of NMSZ-affected waterfront between St. Louis,

Missouri and Memphis, Tennessee. Should a 7-plus magnitude earthquake occur in this area, bridges, locks and canals could be so heavily damaged that the Mississippi River could be impassable for months.

Today, the population center within the NMSZ is estimated to be in excess of 12 million people.[6] This includes an estimated 1.5-2 million people in St. Louis,[7] 1-1.5 million in Memphis,[8] and a remaining 8-9 million inhabitants in smaller cities and rural areas[9] along the predicted impact areas. Scientists predict as much as a 10% chance of another earthquake or series of quakes that could occur in the NMSZ in the next 50 years.[10]

A 7.7 magnitude quake in the current NMSZ will no-doubt cause catastrophic damage requiring interstate communications and the ability for several states to share information simultaneously. Should a disaster like this occur, communications and commerce along the Mississippi River will effectively be at a standstill. As this nation's first military responder to natural and man-made domestic disasters, the National Guard (NG) will require instant informational updates which should come from a standardized COP.

The Purpose of the Study

The purpose of this study is to determine if there is a need for real-time situational awareness between the NGs of each state, their civilian emergency response administrations and surrounding states. The study will analyze the effects of an early 19th century set of large-scale earthquakes that caused seismic phenomena felt throughout several states and as far away as Washington, DC. The research will delve into the

population densities of then and now to show a contrast of the effects of a high magnitude quake now that the population centers along the fault line have grown exponentially.

Additionally, the research will study how the NG currently shares information during domestic disasters or other large scale events and determine if current methods satisfy information sharing requirements between states and their respective emergency managers.

If document classifications permit, this thesis will present the after action findings from the 2011 National Level Exercise (NLE) specifically related to an exercise scenario of a 7.7 magnitude earthquake along the NMSZ. The study will also research COP and SSA issues identified during the multi-state and federal response to other recent natural disasters in the United States. Finally, the thesis will determine if there is an actual need for interagency sharing of real-time situational awareness in today's NMSZ and other domestic emergency event areas should a multi-state disaster occur.

The Problem Statement

The NG of the United States requires a common operating picture (COP) in order to respond to events within the homeland. That is, any member of local, state, or federal government and their military counterparts should be able to walk into an operations center and gather up-to-the-minute real-time data related to the current crisis. Also referred to as shared situational awareness (SSA), it is believed that the state NGs do not utilize one specific system or software in order to provide real-time situational awareness during large-scale domestic events. Instead, should you visit any one of the 50 states, territories (U.S. Virgin Islands, Puerto Rico and Guam) and DC, you may discover a different COP software tool in each NG Joint Operations Center (JOC).

Research Question

Having the capacity to receive all viewpoints, reports and graphics that make-up an emergency domestic response in one, centralized location should be the goal of each state Guard. The primary research question asks, "Why does the NG of the United States lack one single, overarching common operating picture (COP) system for the entire domestic response enterprise?"

Secondary Research Questions

What is the Department of Defense's (DOD) responsibility in the SSA of the states when it comes to domestic disaster response? If the answer is "none" or "limited", should the Department of Homeland Security (DHS) be the lead agency in charge of SSA and incorporate COP for use by both FEMA (an agency under DHS command) and the NG? Such a tool would be required to tie-in not only the NG of each state, but also the state emergency management agencies (EMAs) and any state department which requires SSA, e.g. departments of health, transportation, public safety, and any others having a role in the state's joint operations center (JOC) during a disaster.

Is there a preferred COP/SSA tool already fielded by the NG that is also utilized by our federal partners and state EMAs but that is not used by all state NGs? If so, why do individual states field their own proprietary COP/SSA systems but not subscribe to an overall tool to be shared by all states?

If there is a multi-state catastrophic event, such as an earthquake, floods or major (category 4 or 5) hurricane, how does NG currently "pull" real-time data from the affected and supporting states?

Assumptions

It would be easy to assume that an organization as large as the NG could field a system capable of tracking operations worldwide. Afterall, the entire NG encompasses every hometown in America and consists of more than 460,000 soldiers and airmen.[11] The senior leaders in the NG should be able to walk into the National Guard Coordination Center (NGCC) located in Arlington, Virginia and access a digital screen displaying icons on a computerized map depicting the array of forces, supply commodities, locations of affected areas, and so on.

This would allow those senior leaders to report to their higher echelons and make decisions on needed force enhancements or supply requirements. Those senior leaders are no doubt required to meet with other senior DOD and civilian leaders and would have first-hand situational awareness even if separated by hundreds or thousands of miles. Instead, the leaders of the NG may be forced to rely on phone calls and emails from affected state JOCs when and if the mission allows the state to report.

Another assumption is that there is a preferred system already fielded by the National Guard Bureau (NGB). However, it is entirely possible that some state NG units, who are under the command of their governor and The Adjutant General (TAG), have selected a different software, system or technique that works better for their state. During several missions throughout the U.S., the author has witnessed many “standard” COPs being used to track progress during the events.

A final assumption is that there are just too many agencies with differing equities and reporting requirements during a multi-state crisis event. It could prove impossible to field one over-arching COP tool and expect 54 states, territories and the District of

Columbia plus their partner emergency first responders, state departments and the federal government to adhere to the same COP.

Definition of Terms

Used throughout the thesis, the following terms are key in understanding both the National Guard of the United States and systems and procedures used to maintain a common operating picture.

Adjutant General, The (TAG)-The Adjutant General is the senior military officer of a state NG. Usually appointed by the state governor, the TAG usually serves at the pleasure of the governor and command's the state's Army and Air NG forces. In 48 states, Guam, Puerto Rico and the U.S. Virgin Islands, the TAG is appointed by the governor. In Vermont the TAG is appointed by the state's legislature; in South Carolina, the TAG is elected by the voters; and in DC, the TAG is called the Commanding General and is appointed by the President of the United States. Some TAGs serve as both the senior military advisor to the governor; state director of Homeland Security; and their state's director of emergency management.

Common Operating Picture (COP)-the Department of Homeland Security (DHS) defines COP as "the core situational awareness (SA) capability for effective decision making, rapid staff actions, and appropriate mission execution."[12] For the purposes of this study, the COP should be thought of as the one-stop shop for information reporting, collecting, interpretation and sharing – not neccesarily as a unique software or computer system.

Defense Support of Civil Authorities (DSCA)- support provided by United States Federal military forces, DoD [Department of Defense] civilians, DoD contract personnel,

DoD component assets, and NG forces (when the Secretary of Defense, in coordination with the Governors of the States, elects and requests to use those forces in title 32, United States Code, status) in response to requests for assistance from civil authorities for domestic emergencies, law enforcement support, and other domestic activities, or from qualifying entities for special events. Also known as civil support.[13]

Emergency Management Assistance Compact (EMAC)-offers assistance during governor-declared states of emergency through a responsive, straightforward system that allows states to send personnel, equipment, and commodities to help disaster relief efforts in other states.[14]

Federal Emergency Management Agency (FEMA)-The Federal Emergency Management Agency coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror.[15]

Geographical Information System (GIS)-a computer-based information system that is designed to work with data referenced by spatial or geographic coordinates. A GIS is both a database system, with specific capabilities for spatially referenced data, as well as a set of operations for working with these data.[16]

Homeland Defense-The protection of United States sovereignty, territory, domestic population, and critical defense infrastructure against external threats and aggression or other threats as directed by the President. Also called HD.[17]

National Guard-"State National Guard forces include Army and Air National Guard serving under state active duty status or title 32, USC. The governor of each state

has overall command responsibility for the state's National Guard and is its commander in chief."[18] Also referred to "the Guard" or "Guard" when used throughout this study.

Posse Comitatus-18 USC § 1385, Use of Army and Air Force as Posse Comitatus: "prohibits the use of the Active Army, Air Force, and—through DODD 5525.5—the Marine Corps and Navy as enforcement officials to execute state or federal law and perform direct law enforcement functions. However, the Posse Comitatus Act does not apply to state National Guard forces in state active duty status and title 32 status."[19]

Shared Situational Awareness (SSA or SA)-No dictionary has the specific definition of either term, "SSA" or "SA". Wikipedia, the free online encyclopedia, defines it as "a field of study concerned with perception of the environment critical to decision-makers in complex, dynamic areas from aviation, air traffic control, power plant operations, military command and control, and emergency services such as firefighting and policing".[20]

State(s)- in this sense, the study is referring to the 48 contiguous states within the United States; the two non-contiguous states of Alaska and Hawaii; the U.S. territories of Guam, Puerto Rico and the U.S. Virgin Islands; and Washington, DC for a total of 54 states, territories and the District of Columbia, Throughout this thesis, the United States will be referred to as "the states" or "the 54". Washington, DC may be referred to as "the District" or "DC."

United States Northern Command (USNORTHCOM)- USNORTHCOM is a geographic combatant command (COCOM) located in Colorado Springs, Colorado. Established on 1 October 2001, USNORTHCOM provides "command and control of

Department of Defense homeland defense efforts" and "coordinates defense support of civil authorities."[21]

Limitations

There are several limiting factors pertaining to this thesis analysis. First and foremost, there is a lack of research available showing the current state of common operating pictures or shared situational awareness within the NG. The author has experience in several state-level exercises and real-world events and has worked at the strategic level of the NG at NGB at the Pentagon in Washington, DC. Limiting personal opinion, conversations and observations are necessary in order to keep bias out of the research. First-hand accounts will be utilized throughout this study only when necessary and pertinent to the thesis.

Another limitation is the classification of FEMA after action reviews (AAR) and lessons learned (LL) documentation. FEMA tends to publish only limited or sanitized versions of AAR/LL findings on open source websites and in periodicals. However, for in-depth analysis after an event or exercise, FEMA often classifies the document(s) "For Official Use Only (FOUO)". An example is the LL document related to the NLE-11 NMSZ scenario. FEMA has classified the document FOUO which requires a level of user authentication that restricts access to those who need to know. The NLE-11 lessons cannot be used or cited in this document without changing this study's classification to FOUO and limiting its distribution. For the purpose of this study, the author has chosen not to utilize FOUO documents to allow it to remain open source to anyone who chooses to read it in the future.

Limits will be placed on the amount of data analyzed. The study will focus on a few recent natural disasters and exercise scenarios instead of delving into myriad of case studies pertaining to homeland defense and security. Limiting the study to recent events, while calling attention to a past natural disaster that, if repeated, could cause thousands of deaths and millions of homeless, is important to highlight the need for a standardized COP. Time is the greatest limitation and surveys and personal interviews will not be conducted.

Significance of Study

Preliminary research has shown that after each significant disaster event in the homeland, AAR and LL documents show a lack of a COP or SSA as a common frustration among emergency responders and military organizations. The inability of one organization to effectively streamline their response with a sister organization shows a lack of common understanding amongst the very people who are charged with lessening human suffering and restoring basic services. Combined with the effects of duplication of effort, one affected disaster area might get twice the amount of disaster relief commodities whereas a neighboring juristiction is missed altogether and the inhabitants suffer unneeded stress or harm. This wastes effort, time, and taxpayer money.

The point of a COP is for a commander (or leader in emergency management) to be able to make accurate and timely decisions. These decisions affect the whole of the relief operation and the lives of not only those affected by the disaster but of the responders as well. If a leader cannot access the most timely information available, from one common system, he or she often cannot make the most accurate decisions.

It is important to note, as well, that the term “COP” can not be limited to a “thing” or product. Many instances refer to the COP as a software product but in actuality, it is a process used to allow the commander full visualization of the incident i.e. troops on the ground, personnel available, supplies and their locations, road networks, distribution centers and a host of other areas in which to better formulate plans and decisions.

---

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CHAPTER 2

LITERATURE REVIEW

> On the 16th of December, 1811, about two o'clock, A.M. we were visited by a violent shock of an earthquake, accompanied by a very awful noise resembling loud but distant thunder, but more hoarse and vibrating which was followed in a few minutes by the complete saturation of the atmosphere, with sulphurious vapor, causing total darkness. The screams of the affrighted inhabitants, running to and fro, not knowing where to go or what to do —the cries of the fowls and beasts of every species —the cracking of trees falling, and the roaring of the Mississippi—the current of which was retrograde for a few minutes, owing as is supposed, to an eruption in its bed—formed a scene truly horrible.
>
> — Center for Earthquake Research and Information, *Letter to Lorenzo Dow, 1816*

Preliminary research has shown that there is very little written regarding COP or SSA across the NG. Of the published AARs available to date, most findings show that the organizations publishing the AAR are often frustrated by the lack of a COP during the event. Each identifies the need for a common understanding of what is going on among all participants but that is usually where the reviews stop.

Local, state and military authorities acknowledge that they should be able to effectively interact with others and show a common picture in the environment in which they find themselves working, e.g. a joint operations center (JOC), fusion center or cell, or emergency operations center (EOC), but often they cannot. However, the AARs fail to identify in-depth what the organizations use as a COP, what went right with the COP and what needs improvement to make their COP better.

The literature review of this thesis includes several pieces of constitutional, legislative and written reports regarding the NG itself and the way it is utilized. This is important for the reader to gain an understanding of the NG's unique roles regarding

homeland defense and homeland security. It then shifts the focus to reviews of AARs and LLs related to an actual state disaster and a National Level Exercise which simulated a complex catastrophe.

The United States Constitution

> To provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections and repel Invasions; To provide for organizing, arming, and disciplining, the Militia, and for governing such Part of them as may be employed in the Service of the United States, reserving to the States respectively, the Appointment of the Officers, and the Authority of training the Militia according to the discipline prescribed by Congress.[1]

The United States Constitution sets the basis for the establishment of the "militia," or today's modern NG. The justification for reviewing articles of the Constitution for the purposes of this thesis resides in the explanation of the roles of the NG found later in this chapter. State's rights have been argued since the inception of the Constitution and continue today.

Many contend that states are sovereign and the federal government should have no say in how they are administered, including how they are defended. Others believe the federal government should have a say in the defense of the states because, after all, section 2 states: "The President shall be Commander in Chief of the Army and Navy of the United States, and of the Militia of the several States, when called into the actual Service of the United States."[2] As you will read later in this chapter, there are unique roles and statuses that the NG takes part in that other military services do not. The Constitution lays the foundation for state-controlled militias governed by state leadership. However, it also governs the ways militia can be activated by the President of the United States (POTUS)

The Militia Act of 1792

Since the founding of our country, national security has been at the forefront of the minds of our citizens and their elected leaders. The original homeland security concept called for a state (or colony) to assemble a militia comprised of local citizens. These everyday citizens were the blacksmiths, farmers, merchants, and local leaders willing to lay down their plows and pick-up their muskets in order to defend their territories. At the conclusion of their service, the soldiers returned to their homes and carried-on with their everyday lives. This is where the term "citizen-soldier" was coined and is the basis for the modern NG of today.

The Constitution was specific in that the U.S. would not maintain a standing army even though one was currently in use to repel the British forces during the Revolutionary War. Massachusetts statesman, Declaration of Independence co-signer and eventual Vice-President, Elbridge Gerry, stated, "If a regular army is admitted, will not the militia be neglected and gradually dwindle into contempt?"[3] The U.S. Army was founded on 14 June 1775 (two years before the Constitution was signed) as the Continental Army and has been an active force ever since. Today there are many arguments over whether the military should return to a militia-like status, activated only when required as the founders of this country envisioned .

In the 1790s, it was apparent that was a need for a system to allow the POTUS to call forth an army if a state was unable to provide for its own defense. The Militia Acts of 1792 codified the President's authorities regarding the activation of the militias for federal service. Later updated in 1905, the Militia Acts set the initial foundation for federal use of state forces in defense of the U.S.

The Unique Roles of the National Guard

To understand how it fits into homeland disaster response, it is important to understand the roles and missions of the NG. Even before its constitutional inception, the militia and NG has served its citizens in defense of the colonies. The Massachusetts Bay General Court recognized three regiments of volunteers as militia on 13 December 1636,[4] nearly 140 years before the U.S. Army was organized. On 10 January 2013, President Barack Obama signed H.R. 1339, officially recognizing the state of Massachusetts (MA) as the birthplace of the NG.[5]

As the only U.S. military force with the distinction of serving both the state and the federal governments, the NG has a unique set of dual missions. This section will outline the three duty statuses that NG members are subject to during any given mission. While primarily considered a reserve force to be called upon only when needed, the use and statuses of the NG are often confusing. This is especially apparent now that the NG has been an intregal operational force since Global War on Terror began in 2001.

The National Guard in State Active Duty

The governors of the states and territories can utilize the members of their NGs in State Active Duty (SAD) status, under state control, as needed in support of their state constitutions and statutes. While the members are in SAD, they are under control of the governor who delegates military supervision to the TAG.[6] NG members are paid by the state in accordance with state laws and statutes. The units may utilize federally owned vehicles, aircraft and equipment on a reimbursable status to the federal government.[7]

While in SAD, members of the NG can be called upon to respond to various natural, manmade and terrorist disasters. For example, a historically flood-prone state

may activate members of their NG to prepare for and respond to predicted flooding events within their state. Members of the NG are continously called upon in hurricane states to prepare for impending hurricanes and aide in the response immediately following. Additionally, the governor activate his or her NG in response to an immediate, unpredicted incident such as a tornado, wildfire or terrorist event.

When activated in SAD status, the NG members are not in a federal status, that is, their "man days" are not accounted for as active duty time in service. Not all states pay their members in the exact payscale of the active military force counterparts while in SAD. Because of their unique role in a state status, the members are paid and insured according to state statutes. The duration of SAD can vary from a few days to several weeks. With regards to pay and benefits, SAD status is the least desireable status for NG members responding to their governor's call to duty. Depending on the duration and nature of the event, the TAG and governor will call upon the POTUS to authorize activation of their troops under Title 32 United States Code.

The National Guard in Title 32 United States Code

Governors request Title 32 (T32) United States Code (USC) code status for their troops when the mission is directly in support of the federal government. Additionally, soldiers and airmen of the NG are in T32 status during their weekend training (e.g. "drill weekend") and during summer annual training (AT). They are paid like-wages of their active duty counterparts, insured by the military's medical system and accrue points for retirement.

A revision in the T32 code (32 USC 902) further clarifies the use of NG troops under a federal status to, "The Secretary of Defense may provide funds to a Governor to

employ National Guard units or members to conduct homeland defense activities that the Secretary determines to be necessary and appropriate for participation by the National Guard units or members, as the case may be."[8] During the 2012 hurricane season, Hurricane (later dubbed "Superstorm") Sandy devastated several cities along the east coast of the United States. Governors first activated their NG forces in SAD status and were later able to modify the activation status of their members to T32 because of the federalized nature of the response.

An example of a time when multiple states immediately employed their forces under T32 status was following the terrorist events of 11 September 2001. Within hours, NG members were called upon to provide security for airports, seaports, federal buildings, victim search and rescue, recovery and many other activities in support of the federal government. The Guardsman remained under the control of their governors but were on active duty status, thus the states were reimbursed for the usuage of their forces by the federal government.[9]

The National Guard in Title 10 United States Code

Under the Constitution of the United States, the president has the authority to call-upon all members of the armed forces for service to the nation. Title 10 (T10) USC section 12406 specically states: Whenever—

(1) the United States, or any of the Commonwealths or possessions, is invaded or is in danger of invasion by a foreign nation;

(2) there is a rebellion or danger of a rebellion against the authority of the Government of the United States; or

(3) the President is unable with the regular forces to execute the laws of the United States;

> the President may call into Federal service members and units of the National Guard of any State in such numbers as he considers necessary to repel the invasion, suppress the rebellion, or execute those laws. Orders for these purposes shall be issued through the governors of the States or, in the case of the District of Columbia, through the commanding general of the National Guard of the District of Columbia.[10]

Most recently, members of the NG were activated in T10 status for service in Iraq and Afghanistan to supplement the active duty armed forces deployed in support of Operations Iraqi Freedom, Enduring Freedom and New Dawn. Additionally, NG forces are deployed in T10 status daily in support of domestic air sovereignty and air defense missions, and operations in foreign countries such as Kosovo, the Horn of Africa, Kuwait, Bosnia, and Egypt.

Post-Katrina Emergency Management Reform Act of 2006 and Hurricane Katrina Lessons Learned

Many reports, videos and books exist documenting the events surrounding Hurricane Katrina. Katrina is considered modern history's costliest storm and ravaged the Gulf Coast of the Southern U.S. in August 2005. While this study does not delve into the Hurricane Katrina scenario in-depth, it is important to discuss Senate Bill 3721, the Post-Katrina Emergency Management Reform Act of 2006,[11] or PKEMRA. Additionally, the LL document from Katrina will be considered because of the findings associated with the lack of coordination between local, state and federal entities which resulted from the absence of a COP or SSA between the incident response community.

The unprecedented affects of Hurricane Katrina are still being felt as of the writing of this thesis. As the most expensive natural disaster in American history, Katrina

rewrote many chapters in the regulatory guidance formerly in place for government response to natural disasters. The PKEMRA was written to update and clarify the Department of Homeland Security's (DHS's) responsibilities regarding homeland defense. Specifically, the bill states that the National Operations Center (administered by DHS and FEMA) will be used to "provide situational awareness and a common operating picture for the entire Federal Government and for State and local governments as appropriate."[12]

Because of the tragic outcome of Hurricane Katrina, it became evident that there was not a clear COP for local, state and federal government resources to understand the immediate needs of the citizens of the Gulf Coast. In the combined after action report to the POTUS, *The Federal Response to Hurricane Katrina: Lessons Learned*, there are nine references to the lack-of, or need-for, a federal-level COP when responding to large-scale natural disasters. Chapter 4 of this thesis analyzes where DHS and FEMA were before Katrina and the changes they have made since for development of a national-level COP for disaster response.

Posse Comitatus

Posse Comitatus was a somewhat foreign concept to most Americans until its use was identified in the aftermath of Hurricane Katrina in 2005. The simple definition of the Posse Comitatus Act of 1878 refers to the use of military forces to conduct law enforcement (LE) activities on U.S. soil. On a normal basis, only the NG is permitted to conduct LE activities in a SAD or T32 (state) status whereas T10 (federal) forces cannot. The only time federal forces are permitted to be used in LE operations is when the President uses his rights to invoke the Insurrection Act.

Insurrection Act

While the Insurrection Act was considered by President George W. Bush after Hurricane Katrina, the act was not used. While T10 forces did deploy to the Gulf Coast, the forces were used for military operations in support of the recovery operations and not in a LE capacity. The act was last invoked during the 1992 race riots in Los Angeles, California. The riots, which started after the acquittal of L.A. police officers on trial for beating Rodney King, left 54 dead, 2,383 injured, and more than 13,000 people arrested.[13] President George H.W. Bush envoked his Insurrection Act rights as president when he activated T10 military forces to augment the LE activities of the California NG to quell the violence.

Executive Order 13528—Establishment of the Council of Governors

The Council of Governors (COG) was established by the National Defense Authorization Act (NDAA) of 2008. The NDAA specifically states, "The President shall establish a bipartisan Council of Governors to advise the Secretary of Defense, the Secretary of Homeland Security, and the White House Homeland Security Council on matters related to the National Guard and civil support missions."[14] The POTUS signed its implementation into executive order on 11 January 2010.[15]

The council consists of ten governors, five from each political party, and senior members of the President's homeland security council, DoD and DHS. The council is charged with providing the 53 governors (DC is administered by a mayor) with a coordination means for addressing matters regarding homeland defense (HD), Defense Support of Civil Authorities (DSCA) and the NG,[16] including integration of T10 and T32 forces in domestic disaster response.[17] The COG is a recent development recognizing the

NG as a strong partner in the defense of the country while giving governors a voice in the overall military actions within their states.

One of the focuses of the COG is an establishment of a federal-level COP for domestic disaster response. Working with DHS, FEMA and the National Security Council (NSC), the COG has made the absence of a federal COP a priority agenda item. Former Assistant Secretary of Defense for Homeland Defense and America's Security Affairs (HD/ASA), Paul Stockton, applauded the COG's efforts, "We need a better common operating picture of where the units are located, their level of readiness, and their response capabilities," Stockton said. "The first 72 hours in a disaster are precious for saving lives. With a common operating picture, we will be far better positioned to get life-saving capabilities where they are needed."[18]

Dual Status Commander

> When the Armed Forces and the National Guard are employed simultaneously in support of civil authorities in the United States, appointment of a commissioned officer as a dual-status commander serving on active duty and duty in, or with, the National Guard of a State under sections 315 or 325 of title 32, United States Code, as commander of Federal forces by Federal authorities and as commander of State National Guard forces by State authorities, should be the usual and customary command and control arrangement, including for missions involving a major disaster or emergency as those terms are defined in section 102 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5122). The chain of command for the Armed Forces shall remain in accordance with sections 162(b) and 164(c) of title 10, United States Code.[19]

One of the first items the COG addressed was the lack of a dual-hatted command structure, or Dual Status Commander (DSC), for response to events in the homeland.[20] During Hurricane Katrina, the states of Florida, Mississippi, MS, and Louisiana were heavily damaged and required immediate state and national-level resources. Three separate governors, and by default three separate TAGs, commanded the response.

However, once federal forces were called upon to help mitigate the disaster, there was no one to command both statuses of forces (T10 and T32), nor was there a COP established to provide SSA among responders. This is an example of how two separate chains of command can actually hinder disaster response when both state and federal forces are readily available to respond.

Army Lieutenant General Russel Honoré, the active duty commander of 1st Army, was selected to command the T10 forces assigned to the Katrina response. Sensing the disconnect between federal and state military forces, Honoré demanded to be placed in command of all military forces (54,000 T32 and 20,000 T10)[21] providing relief to the hurricane-ravaged states. However, because the state NG is a T32 asset, there was no precedent for a T10 commander assuming authority over T32 troops. Katrina set the precedent.

At one point, President George W. Bush engaged the three governors about giving Honoré a state NG commission to allow him to command their forces. The governors declined.[22] History shows that the Katrina response was considered a disaster in itself. Honoré had to basically take command of the situation using blunt force and his demanding demeanor to direct both state and federal forces. He did eventually command the military response but not without enforcing the need for a predetermined DSC in advance of an incident.

The blame of the response cannot be blamed just on the lack of military coordination involved in the response. The political figures were just as confused by the military needs as the uniformed commanders. In his autobiography, *Decision Points*, Bush states that when he asked who was in charge of security in New Orleans, he was

met with blank stares. The mayor of New Orleans, Ray Nagin, pointed at the governor, and the governor, Kathleen Blanco, said she thought it was the mayor. Bush says he pushed the governor to allow him to send in T10 forces, "Governor, you need to authorize the federal government to take charge of the response."[23]

Blanco requested 24 hours to think it over but Bush insisted that they did not have that much time. He considered issuing an order for the Insurrection Act which would allow him to overrule Blanco's decision and send in T10 forces with full policing authorities. But the president knew it was stuck when Blanco again refused to allow the federal government to convene. "If I invoked the Insurrection Act against her wishes, the world would see a male Republican president usurping the authority of a female governor by declaring an insurrection in a largely African-American city."[24]

The COG pushed congress to include the DSC in the NDAA of 2012 and the 112th Congress approved it in December 2011.[25] This allows the NG to appoint a commander, usually a general officer, to lead a joint task force (JTF) comprised of T32 and T10 forces. The mission assignments are prescripted and allow the DSC to begin making preparations as soon as a disaster scenario begins. In the example of a hurricane, which is often predicted and tracked several days in advance, the DSC can begin commanding forces well in advance of landfall.

DSCs have recently been used for large-scale exercises and federal-level National Special Security Events (NSSEs) such as the Democratic National Convention and the second Inaugaration of President Obama. This places DSCs in command of military forces responsible for protecting and supporting these NSSEs to ensure unity of

command. The most recent disaster event which utilized a DSC was Hurricane Sandy in the Fall of 2012.[26]

Case Studies in Recent History

This study would be incomplete without looking at some recent events and exercises requiring local, state and federal assistance. The tornadoes that ravaged Joplin , Missouri identified the need for a COP at the local and state level immediately following a no-notice weather event. The National Level Exercise of 2011 focused on a series of earthquakes that are predicted to occur along the New Madrid Fault sometime in the near future.

The 2011 Joplin, Missouri Tornado

In 2011, the city of Joplin, MO was devastated by a catastrophic Enhanced Fujita-5 (EF-5) tornado[27] that ravaged the city with winds in excess of 200 miles per hour (MPH). In the aftermath, 161 people died and more than a thousand were injured, making this the single deadliest tornado to occur in the U.S. since tornado fatality records were first documented in the 1950s.[28]

"Preliminary Finding 2.14: Area for Improvement: The JFO [Joint Field Office] and the JDO [Joplin Division Office] lacked the systems and procedures necessary to effectively manage the large amount of information that each received."[29]

During the lessons-learned phase as relief operations were winding down, FEMA identified that their workers were unable to handle the massive influx of information that inundated the fusion center. Email and voice communications were the primary means of data input of the responder community. However, FEMA employees often found that

their email inboxes routinely exceeded their size limitations.[30] Another issue was the lack of smartphones or other technologies to send data among the workers in the field. The LL document concludes that by not having a proper COP, FEMA employees were unable to communicate effectively with the other agency counterparts in the same room.

FEMA leaders also stated in their AAR that the management of information in the days after the tornados did not develop into a COP. For example, staging, logistics and housing task forces received conflicting data regarding the numbers of commodities available. This breakdown in communications within one organization led to a degradation of credibility with the state-level officials they were there to help.[31]

Specifically, the AAR states:

> JFO and JDO officials stated that JFOs should possess an information management system similar to those used in State and local EOCs [Emergency Operations Centers], such as WebEOC. FEMA has been managing disasters for decades, but has no means to access tactical data in a timely manner. Such a system should show information from diverse sources, for the entire mission rather than parts of it, and incorporate maps. Clearly, JFOs and the JDO require more sophisticated systems that will enable them to manage—and reconcile—data from diverse sources. This requirement will only increase as data from social media play an increasing role in disaster response and recovery operations.[32]

From this study, it is apparent that a system of record for the whole of government was wanted to build situational awareness among the responder community.

National Level Exercise (NLE) 2011

In 2011, several states joined the Central United States Earthquake Consortium (CUSEC) for an exercise focused on a major earthquake event in the central United States. The scenario called for a 7.7 magnitude earthquake with an epicenter located northwest of Memphis, Tennessee (see figure 1). This scenario would closely mirror the series of 1811-1812 earthquakes that occurred along the New Madrid Fault. The states

primarily affected by the earthquake for exercise purposes were Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee.

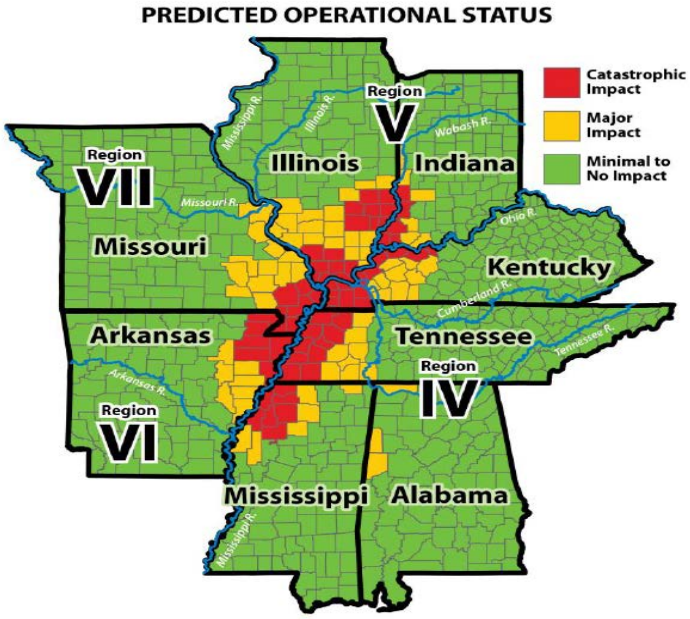

Figure 1. CUSEC Member States and FEMA regions involved in the NMSZ scenario

Source: Central United States Earthquake Consortium, *After Action Report* (Memphis, TN: CUSEC, December 2011), 6.

Governmental participants included the FEMA headquarters and the National Response Coordination Center (NRCC); FEMA Regions IV, V, VI and VII; U.S. Coast Guard (USCG), Department of Transportation (DOT), Department of Justice (DOJ), Environmental Protection Agency (EPA), Department of Interior (DOI), U.S. Department of Health and Human Services (HHS); and the Department of Commerce (DOC). Participating Department of Defense players were NGB (to include the state NGs of each affected state and several supporting states) and United States Northern Command (USNORTHCOM).[33]

The scenario called for planning for a nearly exact replication of the series of earthquakes which shook the NMSZ in the early 1800s. In the end, the planners estimated the following affects (table 1) of a current-day major earthquake striking the same area and concluded:

Table 1. Impact Overview Estimates from NLE 11	
8 states/7 million people affected	700,000 buildings damaged
85,000 injured	300,000 buildings destroyed
3,500 deaths	3,600 bridges damaged
2 million people seeking Shelter	2 million 25-ton truckloads of debris
1 million households without water	$300-billion event
2.6 million households without electricity	

Source: Created by author using data from The Central United States Earthquake Consortium, *After-Action Report* (Memphis, TN: CUSEC, December 2011), 59.

It is of interest to note that Hurricane Katrina is modern history's costliest disaster, with 1.2 million evacuees and an estimated total loss of 1,833 lives and $81 million.[34] Though only an estimate for a fictional scenario, the figures contained in the above-mentioned CUSEC impact-overview are staggering. Two million Americans converging on state assistance centers in need of shelter, food and medical support is unprecedented in American history and nearly unimaginable to even the most prepared disaster relief organizations.

The exercise was well planned, rehearsed and executed but real-world emergency events reduced the number of participating states and federal agencies.[35] Though scaled-down, the exercise still brought out a number of areas in need of improvement. For this

thesis, the most important was still the noticeable lack of a standardized COP throughout all participating agencies. For instance, "the different state EMAs that were involved managed their data differently, and all had to work around those barriers (for example, some states tended to share more than others regarding fatalities, while some states have more access to electrical outage information in a GIS format than others)."[36]

Imagine for a moment that this disaster, or one like it in scope, complexity and horror really did occur. For days, weeks and months afterwards, there would be a constant need for real-time reporting from the affected area. The POTUS would be calling the Secretary of Defense (SecDef) who would in turn be meeting with the Chairman of the Joint Chiefs of Staff (CJCS) to get the on-the-ground truth of what is occuring. The CJCS would rely on the CNGB and other military Service Chiefs, all members of the Joint Chiefs of Staff (JCS), for real-time data to report to the POTUS. Not to mention the need to feed to the myriad cable news channels that want accurate, timely information to report to the American public.

As the first military responder to any domestic disaster, the NG would be the lead military agency providing assistance to FEMA for a disaster of this scope. The affected state NGs would activate their 24-hour Joint Operations Centers (JOC) which would likely be co-located with their state Emergency Management Agencies (SEMA). During Hurricane Katrina, the LA NG JOC in Jackson Barracks was inundated with floodwaters and had to be evacuated and a temporary JOC established. Many states have the ability to "jump" their JOCs to other locations within their borders to facilitate the response or even have mobile command centers in which to work from if their fixed-facilities are otherwise uninhabitable.

Simultaneously, the National Guard Communications Center (NGCC) located in Arlington, Virginia, will activate for 24-hour emergency crisis action planning and response. The CNGB, in coordination with the Director, Army Air National Guard (DARNG) and the Director, Air National Guard (DANG) respectively, would report the latest information to the CJCS and SecDef as it became available.

Obviously in the minutes and hours immediately following the event, the information will be inaccurate. Fatality reports, infrastructure damage, power outages and the like will all be, at first, seemingly outrageous. After the terrorist events occurred on September 11, 2001, television news channels reported that New York City death tolls alone could be in the tens of thousands. After all, the terrorists struck the Twin Towers complex at a time they thought the buildings would be most occupied. As the world later learned, 2,752 people were killed in New York City[37] on that fateful day. Never will the need be higher for SSA among local, state and federal agencies, through a common-SSA system or process.

In the preceeding hours following the disaster, each state will be concerned with the immediate needs of their citizens. State governors will declare disaster areas and activate significant numbers of NG troops to help with the response. These soldiers and airmen will be the first military service personnel the American public will see on their news channel as they have the Title 32 responsibility of disaster recovery within their borders.

The NG troops will assist the state EMA with the manpower and expertise for many essential taks such as door-to-door welfare checks and body removal; police activities; search and rescue (SAR) operations; traffic checkpoints; evacuation of

displaced citizens; food and water distribution; road and infrastructure clearance; and emergency medical treatment. During Hurricane Sandy, NG forces evacuated hospitals, refueled civilian automobiles, and restored electricity to areas without electrical power.

For the purpose of this thesis, lets assume that the NMSZ scenario has just occurred in real life as it was planned in the exercise. Eight states would feel the immediate affects of the earthquake which means eight separate JOCs and Emergency Operations Centers (EOCs) will be activated to assist in the crisis. Again, each governor understands that they are not the only state affected but their citizens are only concerned with how their state's elected leaders and emergency managers will handle their immediate needs. Eventually, though, the POTUS will expect the less-affected states and surrounding "supporting" states to come together and begin the task of consolidating resources.

Another important point to emphasize is that the members of the NG in the worst-affected states are also citizens of these states with families and losses of their own in their own communities. They may have trouble responding to the unit activation calls because communications methods may be down; roads may be impassible; bridges may be completely destroyed; or they themselves may be among the missing, injured or dead. Supporting state governors and TAGs understand this and will immediately begin the process of activating their own forces, equipment and supply commodities for deployment into the affected states.

The process of states providing resources and mutual aid to other states is accomplished through a national agreement called the Emergency Management Assistance Compact (EMAC). EMAC is a reimburseable state-to-state compact used to

quickly provide aid and mitigate human suffering during governor-declared states of emergency.[38] Ratified by congress and a law since 1996, the EMAC allows states to make prearranged emergency management plans in the event the affected state is unable to provide a critical resource after a disaster.[39]

Now our leaders are not only collecting, analyzing and reporting data for the eight affected states but also for the supporting states which, in a disaster of this magnitude, could easily exceed 20 additional states. The supporting states need to know what the affected states need, where they need it and how much they need. As the event unfolds and the first responders start getting real numbers, this data has to be collected somewhere. This is where the establishment of the COP is of greatest importance.

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[35]Mickey McCarter, "FEMA: Real-World Disasters Diminished Participation in Top Training Exercise, IG Says," *Homeland Security Today*, 15 November 2011, http://www.hstoday.us/channels/fema/single-article-page/real-world-disasters-diminished-participation-in-top-training-exercise-ig-says.html (accessed 19 July 2013).

[36]Ibid.

[37]Phil Hirschkorn, "New York Reduces 9/11 Death Toll by 40," *Cable News Network*, 29 October 2003, http://www.cnn.com/ 2003/US/Northeast/10/29/wtc.deaths/ (accessed 21 July 2013).

[38]EMAC Web, *What is EMAC?*

[39]Federal Emergency Management Agency, "Emergency Management Assistance Compact: Overview for National Response Framework," http://www.fema.gov/pdf/ emergency/nrf/EMACoverviewForNRF.pdf (accessed 31 July 2013).

CHAPTER 3

RESEARCH METHODOLOGY

> This is part of the involuntary bargain we make with the world just by being alive. We get to experience the splendor of nature, the beauty of art, the balm of love and the sheer joy of existence, always with the knowledge that illness, injury, natural disaster, or pure evil can end it in an instant for ourselves or someone we love. Does this mean there can be no consolation when a disaster like the Oklahoma tornado strikes? Of course not. We should celebrate every rescue; take heart from the heroism of a teacher who shielded half a dozen children with her body; honor the first responders and the volunteers who spend days and nights searching for survivors; and learn from such disasters to limit the death and destruction from the inevitable future disasters.[1]
>
> — Jeff Greenfield,
> *In Tragedy, Consolation only Goes so Far*

The research for this study will primarily be conducted using a qualitative methodology approach. Published works will be reviewed in order to determine historical precedence set for the establishment and requirement for a COP within the homeland defense and disaster recovery arena.

In order to set the tone for the document as it pertains to the NG, the thesis will outline the specific authorities and statutes of the organization. It will include its constitutional inception as a militia to its current-day status as an operational reserve force. Likewise, the qualitative reviews of literature will seek to understand the relationship between the NG and the communities for which it is mandated to respond in times of crisis. The study will also explore the relationships between the NG, DHS, FEMA, USNORTHCOM and the federal government.

Providing a commander situational awareness in order to make timely and accurate decisions has likely been a need for hundreds of years. However, in order to limit the scope of this thesis, the author will research the published AARs, LLs, case

studies, presentations and other works related to the events associated with Hurricane Katrina and other domestic events i.e. the PKEMRA AAR and the report to the president entitled, *The Federal Response to Hurricane Katrina: Lessons Learned*. Katrina taught us that not having a predetermined system for establishing a COP immediately following the disaster can have extremely grave consequences. Establishing a COP for the whole of the federal government, and in the researcher's eyes this includes the NG, was a mandate established through PKEMRA. Determining if such a system has been fully implemented in the eight years since Katrina is important because FEMA and DHS are responsible to the citizens of the United States.

Too often mistakes of the past are repeated because we are unable to replicate natural disasters under exercise circumstances. It is virtually impossible in today's extreme bugetary constraints to fund exercises adequately enough to simulate actual disasters. Or, real-world events delay an organization's ability to provide the time needed to properly plan for and execute practice scenarios. Also, replication of the scale and magnitude needed to adequately train and equip responders for such large-scale events is often overlooked. However, unless these exercises are done, the responder community cannot possibly be expected to have the ability to answer the calls for help.

This research will consider recent national level exercise scenarios to ascertain how and if lessons learned from Hurrican Katrina have been implemented. Specifically, the NLE 2011 scenario which brought together hundreds of people from every level of emergency management, DOD and the federal government.

Measuring the effectiveness of a standardized, national COP is only possible through ulizing such a COP and dissecting AARs to determine its usefulness. A Joint

Task Force (JTF) commander can measure COP-effectiveness by understanding the overall picture of the disaster response. That is, all tools are gathered in a centralized repository and available to him or her for rapid decision-making. Seeing troops available, commodity locations, whether the local supermarket or WalMart have reopened, or myriad of other information helps the commander determine next steps.

Measuring the effectiveness of a COP for this research is also very subjective. Analyzing AAR comments, testimonies, and products available will only give the researcher a partial understanding of overall effectiveness. What is to be gained, however, is an understanding as to what leaders require in their operational picture to make lifesaving decisions.

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[1]Jeff Greenfield, "In Tragedy, Consolation Only Goes So Far," *Yahoo! News,* 21 May 2013, http://news.yahoo.com/in-tragedy--consolation-only-goes-so-far--172524045.html (accessed 30 July 2013).

CHAPTER 4

ANALYSIS

DoD Advisory Panel on COP

"Finding: There is currently no standard or sufficient mechanism for localities, States, and Federal agencies to share a civil-military common operating picture to support [CBRNE*] incident response."[1]

In September 2010, the *Advisory Panel on DoD Capabilities for Support of Civil Authorities After Certain Incidents* published a report to congress with specific language related to a lack of a civil-military COP. The panel's focus was on the response by DoD and civilian responders (local, state and federal) to a CBRNE event. In their findings, the panel's research discovered that responders are "hampered by the lack of a COP to which response organizations can fully contribute and which they can fully use."[2]

The advisory panel recommended that DHS, with support from the SecDef:

> 1) direct new efforts to develop completely the Homeland Security Information Network [HSIN] and Common Operating Picture to enable timely civil-military coordination for CBRNE response operations, and 2) study and report to the President on both the implications of relying on the Internet for vital communications during an emergency and whether backup capabilities are sufficient to support response operations in the event of a large-scale CBRNE incident.[3]

Of interest in the panel's findings, they report that both NGB and NORTHCOM input information into HSIN but the amount and type of information is limited. This is because these two DoD organizations are constrained by security classifications, user

*CBRNE is the term associated with Chemical, Biological, Radiological, Nuclear, High-yield Explosive response. The term was developed to describe the different type of weapon systems that may be used in a criminal or terrorist event.

authentication, and information assurance issues with their informational products.[4] The panel also showed concern about reliance on the internet for COP development and administration. As outlined in chapter 2 of this thesis, reliance on the internet, telephones and email have all shown vulnerabilities when large numbers of responders are involved.

The "Common" COP Products

Research has shown that there are several different platforms in use by the active Army, the NG and the state and federal partners such as DHS and FEMA. This chapter will focus on several of these products and give a brief description as to how they work and the data they provide. Important to remember is that a platform or computer system does not make a COP. Several different variables combine to give a common understanding of an incident in order to rapidly make decisions and start the flow of people and resources. However, being able to intelligently depict graphically the who, what, when and where of an incident permits the commander to decide the "how".

Command Post of the Future (CPOF)

The idea of a common user platform for a COP in the active component U.S. Army traces its roots back to the 1990s with a group of military retirees, experts in psychology and computer programmers.[5] The Command Post of the Future (CPOF) was developed to fill a gap in information management and to give a commander an interface to use for making decisions. Fielded to the Army in 2006,[6] CPOF has gone through many transitions to try to link the myriad of other computer systems used by the Army.

While the NG has fielded the General Dynamics-managed CPOF system,[7] research shows that the system is being used during overseas operations but only

sparingly for domestic events missions within the contiguous United States (CONUS). The system is useful for the NG's worldwide deployment missions and can give the commander situational awareness throughout his or her battle space. Linked with other Army Tactical Mission Command systems such as Blue Force Tracker (BFT) and Battle Command Sustainment Support System (BCS3), CPOF should work for domestic operations. However, research into the topic of CPOF use in NG domestic operations returned no specific results.

Joint Information Exchange Environment (JIEE)

The author has extensive experience utilizing the JIEE system from time assigned at NGB in the Joint Logistics and Engineering Directorate (NGB-J4). The following discussion points are strictly those of the author from personal experience and published documentation and by no means should be construed as criticism of the JIEE system or views of anyone else within the NG or NGB.

NGB fielded JIEE in 2005 and it was designed to be the NG's system of record for sharing exercise and real-world responses between the entire NG and its federal and state partners.[8] The system tracks events and allows NGB and the states to input requests for information (RFI) and requests for assistance (RFA). The system has a mapping feature that allows NGB to view event-related icons and data on a geospatial mapping image. The image can be broadcast throughout monitors in the NGCC and accessed from any internet-capable computing device via DoD common access card (CAC) or Army Knowledge Online (AKO) username and password.

Designed to be the overall system of capturing and displaying the NG COP, JIEE has a relatively easy-to-use design. As an incident unfolds, the NGB J35 Domestic

Operations (DOMOPS) branch will input an event description which is assigned a unique event identification (ID) number for record keeping purposes. The NGB COP Manager will input as much information as is known at the time with inputs from all reporting staff sections. Users can access the event anytime from the JIEE home screen (see figure 2) by locating the unique event ID number or by various search methods provided by the program.

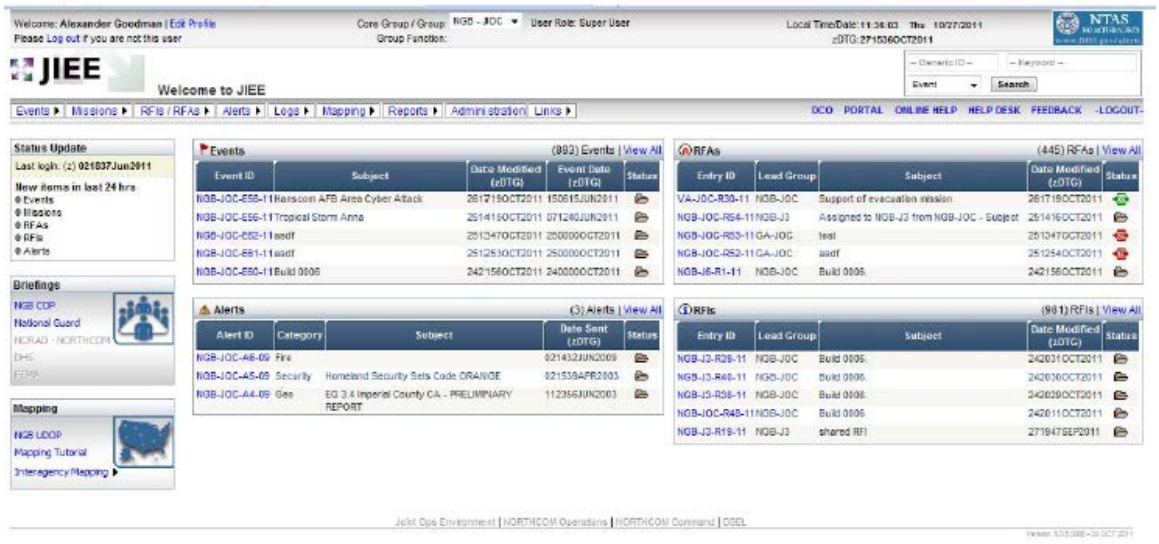

Figure 2. JIEE Front Page

Source: Joint Information Exchange Environment, *User Manual* Version 6.0.2 (Arlington, VA: JIEE, 11 February 2013), 13.

For example, when a tropical storm or hurricane is forecasted to make landfall on or near U.S. territories or states, an initial "event" is created in JIEE. As the event progresses, all pertinent information is recorded, documents and pictures are uploaded, and RFIs and RFAs are tracked. As an RFI or RFA is answered and closed-out, the

outcome narrative and supporting documentation are uploaded and stored in JIEE. An event such as this could last several weeks and possibly months or years depending on the severity of the storm. JIEE is designed to be NGB's system of record so data from the system can be accessed later for reporting, AARs, testimony, or any other reason a historical record is needed regarding a domestic event.

JIEE allows the user and staff to visually depict the ongoing event on what is called the "User Defined Operational Picture" (UDOP). Like many other situational awareness viewers, the geospatial mapping function allows the audience to "see" the event on a map similar to a Google Map or other commercial mapping viewer. Data related to the event can be populated on an on-screen icon and when selected in the UDOP-view, pertinent event information displays (see figure 3). The feature allows the user to define his views by adding layers of information or changing views (such as relief, aerial, street, and topographical views).[9] The system can also pull the latest weather radar and forecasts into a layer to give decision-makers more operational information in which to analyze and make decisions.

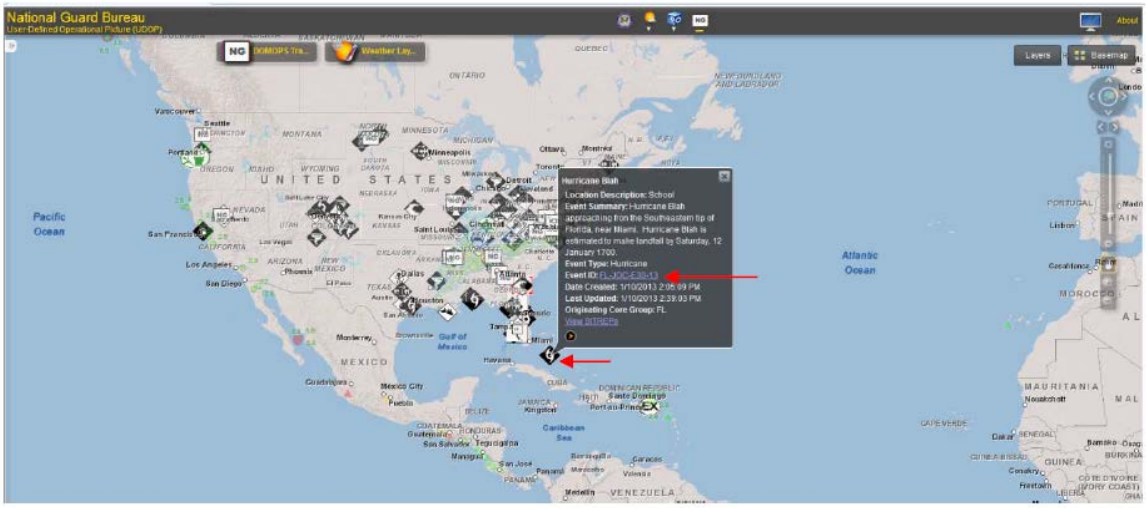

Figure 3. JIEE User-Defined Operational Picture (UDOP)

Source: Joint Information Exchange Environment, *User Manual* Version 6.0.2 (Arlington, VA: JIEE, 11 February 2013), 80.

JIEE Analysis

At first glance, this seems to disprove the thesis statement that the NG needs a COP for domestic events. JIEE certainly fits the bill for an easy to use product that can allow commanders to track domestic event-related data, display it on a map and show real-time updates to the situation. JIEE is an internet-based application that everyone from senior leadership in NGB to the state-level JOC manager can have access to as long as they have a computing device and a CAC or AKO account. On many occasions the author accessed JIEE from a home computer or while deployed on domestics operations missions to track current operations and mission-related requirements.

Primary Research Question Answer Revealed

The primary research question has been answered: JIEE is the National Guard's COP system of record and is available to all 54 states and territories. This is a system in which geospatial information can be displayed, updated, and information passed between entities. This system can allow a commander to view updated situations in near-real-time and make decisions based on what he or she sees within JIEE. Those decisions can then be communicated through the system and passed to subordinate elements throughout the 54. Conversely, RFIs and RFAs can be submitted from the affected states to the national-level instantly, tasking outputs from NGB domestic operations staff.

An important factor in creating and maintaining a COP is buy-in from other organizations within NGB and the domestic disaster response community outside it. The NGB has a unique role in the administration of the NG in that NGB has no command authority over the 54 state Guards. The purpose of NGB is to serve as a conduit between the governors and TAGs at the state-level and the SecDef and POTUS at the federal level. The same distinction holds true for the ARNG and ANG respectively. Neither is a "command" and neither holds a command relationship or authorities over a state NG.

Ultimately, the CNGB has no command authority over the TAGs and, therefore, cannot direct or task a TAG to do anything–like require each state to utilize JIEE in the Joint Force Headquarters-State (JFHQ-S) JOC. The CNGB can relay information from the DoD and national leaders and make suggestions but otherwise cannot impose changes upon a state in relation to NG activities. This is important to identify in this thesis because not all NG states utilize JIEE during their domestic events. As outlined later in

this chapter, individual state Guards may utilize other COP systems and software to accomplish their state missions.

From involvement during exercises and real-world incidents, the author personally experienced the lack of JIEE use within state Guards. Often, when an event was unfolding, the state began their COP compilation using a COP software product other than JIEE. When the NGCC tries to view RFI and RFA requests from the affected state(s), they often cannot because the systems do not “talk” to one another. Therefore, the COP manager at the state NG-level would be required to input data into two or more COP systems. During a crisis, this is very time-consuming and nearly impossible to do concurrently.

What often occurred was the state NG compiled their data using their state-owned and operated COP system throughout the event. When NGB required updates, they were pushed by phone, email or video teleconference (VTC) requiring NGB NGCC staff to capture and update JIEE. Recalling that JIEE is the system of record for NGB records-keeping during domestic events, it was crucial to maintain data in JIEE throughout the incident. This redundancy in reporting and records maintenance often led to delayed information reporting to senior NG and DoD leaders.

As a reminder, JIEE is not a separate computer system. That is, end-users do not require an additional JIEE “box” (computer) to utilize the system. It is internet-based and available to anyone with a CAC or AKO account. Seemingly, all state NG JOCs should be able to easily access JIEE and make their updates to give senior NG leaders a standardized COP. On more than one occasion, the author witnessed 100 percent of an event’s JIEE data entry inputted by shift workers at the NGCC and not by the state

involved in the disaster. Whether it is lack of understanding of the system, lack of will to use it, or lack of senior leader support remains the million-dollar question.

JIEE and Other COP Programs

Another important factor in maintaining SSA via a COP is the NG's ability to interface JIEE with other COP products used by outside organizations. DHS, and by default, FEMA, uses a situational awareness product called the Homeland Security Information Network (HSIN). Currently there is no direct interface with HSIN through JIEE, therefore, data must be "pushed" by NGB to HSIN. What gets pushed is dependent upon the senior leaders within NGB and how much information they want to share with outside agencies. Additionally, NGB may classify certain information "secret", precluding it from upload to HSIN because DHS maintains HSIN on an unclassified domain.

Homeland Security Information Network (HSIN)

The HSIN was developed as an outcome of the PKEMRA findings and recommendations that DHS "provide situational awareness and a common operating picture for the entire Federal Government and for State and local governments as appropriate"[10] According to a HSIN fact sheet published by DHS, HSIN as the only comprehensive, nationally secure and trusted web-based platform able to facilitate Sensitive But Unclassified (SBU) information sharing and collaboration between Federal, State, Local, Tribal, Private Sector, and International partners." [11]

HSIN itself is not FEMA's COP. HSIN is a tool used for "whole community" collaboration and information sharing. Within HSIN is the DHS COP which was

implemented in December 2012 after the original HSIN COP was decommissioned.[12] However, implementation has not been without complex issues. While DHS envisioned HSIN providing a hosting place for a comprehensive COP for itself, its sub-agencies such as FEMA, Customs and Border Protection (CBP), and the U.S. Coast Guard (USCG), and federal and state governments, it actually perpetuated the creation of more than 20 separate COP systems. DHS Chief Information Officer, Richard Spires, was quoted as saying, "So much for being 'common'. We have all these COPS, but no real integration."[13]

Additionally, the HSIN COP and new DHS COP is continuing to suffer growing pains in that their idea of a "whole community" approach to a COP often cannot reach the lower levels of emergency response organizations. Until DHS can manage its own COP, it will be unable to provide the PKEMRA-mandated national-level COP, to include synchronization with the NG. "We are starting to unify the COPs across the department," said Spires. The next step is collaborating further with other federal agencies, and with state and local agencies, he added.[14]

Accessing HSIN: Easy enough for all responders?

The HSIN COP is similar to that of JIEE in that it is not a separate computer system but a web-based platform on the unclassified network. This is where the access similarities end. HSIN is not administered for use by every member of the disaster response community. Accounts require the user to have a .mil, .gov or similar government-administered email account and to request access through a rigorous verification process used to ensure the requestor has a mission-based need to know. HSIN is broken into five major mission areas that fall under, or form, "communities of interest

(COI)" such as utility companies, fusion centers, and government agencies.[15] These five mission areas are Intelligence & Analysis; Law Enforcement; Emergency Management; Critical Sectors; and Multi-Mission Agencies.[16]

To gain access to HSIN (and its subsequent COP product), a requestor must fall under one of the aforementioned COIs and mission areas. The requestor then must be nominated for access to the system (by his or her organization) and validated as required to gain access. A validating authority within HSIN then reviews the application and determines whether the requestor should have access.[17]

The author did not have an HSIN account prior to this thesis but completed the process to gauge ease of access (or lack thereof). Because of military status and having a .mil email account, the application was completed and approved in a day. The process included an extensive application, verification of email account and military status, and supervisor confirmation. Each log-in requires a user-defined username and password and a validation code. The validation code is requested at log-in, acquired via separate email or text message, and inputted before access is granted. The code is valid for twelve hours until a new one is requested and the procedure is repeated.

Answer to Secondary Research Question

Should DHS be the lead agency in charge of SSA and incorporate a COP for use by both FEMA and the NG? Yes. The DHS was charged with creating a standardized national COP post-Hurricane Katrina. Yet to date, it has failed to adequately do so. As evidenced by its CIO, DHS itself still suffers from a being able to graphically depict and provide a COP within the organization. So herein lies the problem: DHS was mandated-by law-to provide national SSA to federal, state and local entities. However, seven years

later, it still cannot manage its own internal COP and threw-out its current system less than a year ago to utilize a new one, DHS COP.

With the numerous systems available to graphically depict COP via GIS, it is apparent that it is not a systems issue.[18] Therefore, perhaps DHS suffers from similar organizational management issues as NGB: information sharing at local and state levels is proprietary, or self-contained, until help is needed. The local-level governments do not share information with their state governments until they become overwhelmed. The states continue to manage themselves until they, too, become inundated by the disaster. By the time the federal responders are brought into the mix, resources, commodities and people are scattered throughout the operational area. Without a standardized COP, utilized by every level of government and community responder from the beginning, no one really knows where it all resides.

As identified previously, Hurricane Sandy was a major storm that caused billions of dollars in damage along the East Coast in November 2012. However, at the inception of this thesis, there was very little after-action data available regarding COP and SSA gains or losses during and after the storm. FEMA publishes a yearly National Preparedness Report and of interest in the 2013 edition were comments regarding the use of situational awareness platforms across the different departments of the US government.

The Department of Transportation (DOT) utilizes a situational awareness viewer for the transportation system within the US. In the fall of 2012, FEMA began using the DOTs system "in part to eliminate the need to access multiple systems with separate user names and passwords."[19] Hurricane Sandy is yet another disaster highlighting a

disconnect between the whole of government and whole of community approach to disaster response in regards to SSA.

> Response and recovery efforts following Sandy confirmed challenges associated with establishing shared, real-time situational awareness across levels of government and among whole community partners. Seamless data-sharing among Federal, state, and local agencies remains the goal, including for agencies using the same type of crisis management software.[20]

During Sandy, FEMA utilized WebEOC as their platform for a COP. Initial reaction from the field identified that sharing a single online software helped to facilitate information sharing among the responders.[21] Using WebEOC, FEMA was able to more accurately account for supply commodities from the warehouses to the points of distribution. FEMA credits the use of a single COP product as a success and 60 percent of polled NRCC personnel agree.[22]

Other State National Guard COP Products

During the research of COP platforms, the researcher decided to explore some different COP software products that are used by individual state NGs. Time limited the ability to survey each state NG JOC and the information contained here was strictly discovered by using open source websites.

WebMapper

WebMapper[23] is a GIS mapping tool managed by WebEOC purchased by the North Dakota (ND) National Guard for use as their standardized COP.[24] While little open source data was available during this research, the state of ND has used WebMapper for several exercises and real-world disaster events. Notably, the TAG of ND praised the system and its capability to interface with the civilian emergency responder community.

WebMapper does not directly feed JIEE so all data collected in WebMapper must be duplicated and inputted into JIEE.

New Hampshire VIEWW

The state of New Hampshire Department of Safety and the New Hampshire National Guard (NHNG) utilize a system called New Hampshire State Virtual Information and Emergency Web Watch (State VIEWW) and New Hampshire Guard VIEWW[25] respectively. The NHNG is the lead for a new concept called "GeoGuard". The GeoGuard premise is for, at a minimum, at least one state in each of the ten FEMA regions to be GIS-capable. GIS is a capability, not a "system" so as long as states utilize a GIS-capable COP software, they should be able to upload data into a comprehensive COP like GeoGuard.[26] As of November 2012, this initiative was still in its infancy but the NHNG continues to drive the SSA concept throughout the NG.

Social Media and Disaster Response

The research for this topic would be incomplete if social media and its effects on disaster response were not mentioned. Tufts University defines social media as "a term used to collectively describe a set of tools that foster interaction, discussion and community, allowing people to build relationships and share information."[27] Specifically, users access internet-based tools such as Twitter, Facebook, YouTube and Foursquare (among numerous others) to communicate and share information instantly with "friends," "fans," or "followers."

As smartphones and tablet computing devices become more and more prevalent in American society, social media platforms have grown exponentially. Twitter does not

release current numbers of users but several articles suggest the number is about 500 million. Facebook reports that they have 1.11 billion users on their site with more than 665 million active daily users.[28] These statistics underscore and important fact: whether emergency service leaders like it or not, social media is changing the way Americans receive and transmit newsworthy information.

Why the Social Media Numbers are Important

During the composition of this research, several large-scale, national interest disasters occurred. They include the Boston Marathon bombings; the North, Texas chemical plant explosion; the Oklahoma City tornados; Midwest flooding; and the Yarnell, Arizona wildfires. For brevity, this chapter will focus on the Boston, MA terrorist bombings that occurred near the finish line of the 2013 Boston Marathon on 15 April 2013.

The intent is not to dissect the disaster and its causes or effects. Instead, the focus will be a brief discussion on social media and how it affected the emergency response in Boston. With millions of computing devices within the reach of pockets, purses or backpacks, the social media craze has taken on a unique position in disaster response and reporting. Many in the disaster response community in the city of Boston and suburbs subscribe to social media sites to provide near real-time updates related to events to keep the public informed. Several Boston-area agencies used social media to update the world on response statuses following the bombings that day.

Though several social media outlets were used, the research was limited to Twitter and the way it was used in the response. Important to note is the increases in followers and re-postings (on Twitter this is referred to as “tweets”, “retweets” or

"retweeting") immediately following the Boston disaster. Racers, spectators, emergency responders and a host of other public faces took to social media to provide immediately updates to the situation. Much of the initial reports coming from cable news channels originated from social media reports from the scene.

As a quick Twitter introduction, a person or organization "tweets" (types) information related to the incident in an online posting using 140 keyboard characters or less. That posting is then read and shared, or "retweeted," by the next user or organization and the information is passed along instantly. While not obsolete, television and radio news broadcasts are giving-way to online social media platforms like Twitter when breaking news occurs. There are often drawbacks when social media is relied on for late breaking news updates. Some of these issues will be covered later in this chapter.

An example of the way information spreads after a disaster can be the capture of the second suspected bomber, Dzhokhar Tsarnaev, on the night of 19 April 2013. One tweet by the Boston Police Department read, "CAPTURED!!! The hunt is over. The search is done. The terror is over. And justice has won. Suspect in custody." This one hodgepodge of sentence fragments was retweeted more than 137,000 times.[29] This means that within minutes, 137,000 Twitter users read and retweeted this information to share the news with other followers.

The amount of follower increases the week following the Boston bombings, the subsequent manhunt, and capture of the suspects, are also staggering. The online source, Heroic Project, tracked three primary groups of Twitter account holders for the period of 14-28 April 2013. The first group was lumped as "local accounts" which included organizations such as the American Red Cross (ARC) of Eastern MA, the City of Boston

Police Department (BPD) Public Information Officer (PIO) Cheryl Fiandaca, the Boston Mayor, and several other local organizations within the Boston community. Heroic Project identified the second grouping as “state accounts” with account holders such as the MA EMA, the governor of MA, MA State Police and MA Department of Transportation. The final group listed “federal accounts” and had only three members: the MA NG, FEMA Region 1 and FEMA.

Figure 4 shows the overwhelming increases in Twitter followers for the local and state accounts. Of particular interest is the very small increase in federal Twitter followers during that two-week period. The MA NG increased by roughly 3,000 followers during this time as the first military responders on the scene in the aftermath. MA NG used troops for a variety of missions following the bombings to include crowd control, explosives response and policing actions.

Whether Twitter users were already inundated by other local and state groups or the MA NG did not utilize the platform in the ways other groups did remains unknown. A review of the Twitter feed the day of and weeks following show several bombing-related tweets but only average retweets of the information. FEMA and FEMA Region 1 (the region MA falls within) did not fare as well as the state NG but one might assume that because this disaster was mainly collaborated on at the local level, the need for federal intervention was not as prevalent.

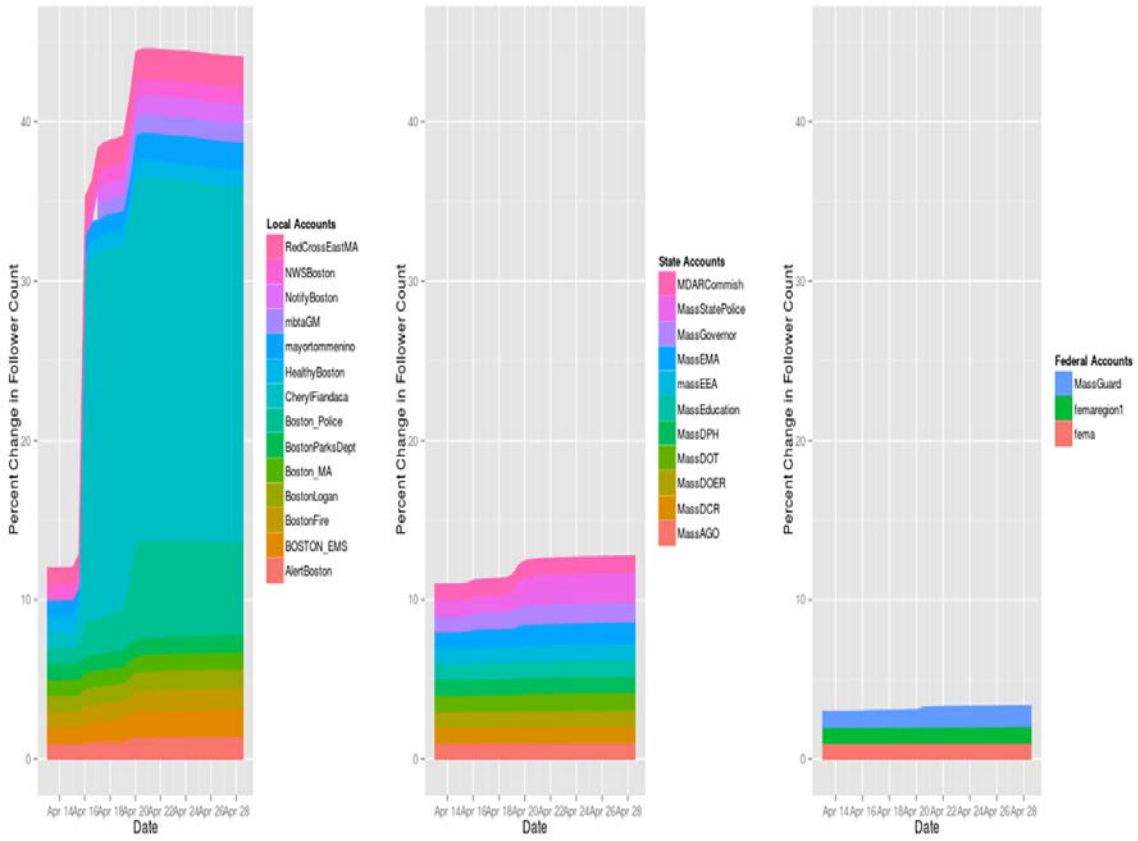

Figure 4. Percent Change in Twitter Follower Counts April 14-April 28 2013

Source: J. Sutton, et al., "Tweeting Boston: The Influence of Microstructure in Broadcasting Messages through Twitter," 2013, http://heroicproject.org (accessed 3 August 2013).

What this data proves is that social media users rely heavily on platforms like Twitter to get and spread information quickly. That the regional chapter of the ARC gained more than 45,000 followers due to this event is a sign that users are searching for information from the local groups. Today, the national-level ARC has just over one million active followers[30] while the ARC of Eastern MA is just over 4,000.[31] These numbers are average daily followers and fluctuate as disasters or incidents occur.

Is Social Media During Disaster Response a Good Thing?

So far, the review of social media use during and after disasters has focused on the positive aspects of its usage. Certainly having the ability to take pictures and video and stream it in near real-time to report the news is a generational necessity brought-on by millions of Americans carrying computers in their pockets. It also has positive implications related to capturing real-time data from those closest to the event and developing a more accurate COP.

Tweeting the location of the exact neighborhoods the Boston PD was canvassing in pursuit of the bombers is intriguing and makes Joe Citizen a first-rate journalist. Millions of Americans were glued to their televisions and smartphones hoping to see the capture of the bombers live. However, social media use can also aide the criminal element in averting police capture in the same way it helps keep Americans safe. Those very bombers could have been monitoring police actions on their own smartphones to avoid capture.

Used properly before and after a weather disaster, social media can save lives and even lessen the strain on cellular voice platforms. As outlined in chapter 2, cell phone towers in the immediate vicinity of a disaster can be inundated with calls and become overwhelmed. This can cause voice communications outages for many hours and slow the emergency response to the victims. However, social media platforms rely on data communications so texts, tweets and status updates can often continue uninterrupted even when phone calls cannot.

The paramount issue in any state's JOC or EOC is the management of information. Too much information can paralyze disaster operations because there is just

too much to sift through. Often the first reports are not accurate and with social media, those reports are arriving in the form of thousands of messages. Sorting through them and determining which are most important can be just as damaging as receiving little or no information. Additionally, misreported information can cause panic or skew information and actually send responders to the wrong areas if not managed properly.

This became evident immediately following the bombings in Boston. While the Boston PD PIO was releasing simple, timely information via tweets, local media outlets were thirsting for more information. Boston PD CIO Cheryl Fiandaca tweeted the following when the fire at the John F. Kennedy (JFK) library was discovered: "A third incident at JFK library. Not certain related- but BPD treating like they are #tweetfromthebeat via @CherylFiandaca."[32] However, Reuters Press U.S. tweeted "Boston police confirms another explosion at JFK Library #breaking,"[33] confirming as fact that there was a third bombing in Boston and causing mass confusion throughout the city of Boston and the country. Boston PD continued to report via Twitter that the incident appeared to be unrelated to the marathon bombings and instead caused by a fire. This was important to help calm the fears of Americans that there was a bombing campaign occurring throughout Boston that day.

Of more importance are the reports from the ground citing death tolls, injuries and damage caused. Another series of tweets from Boston that day sensationalized the extent of the damages, much like the initial reports coming from NYC on 11 September 2001. At 2:53 p.m. the day of the bombings, the New York Post released, "UPDATE: Reports of at least 12 dead, dozens more injured in Boston Marathon explosions."[34]

In less than ten minutes, the Boston PD reported, "22 injured. 2 dead #tweetfromthebeat via @CherylFiandaca."[35] Managing the misinformation could be considered just as important as the actual on-the-ground response. As this event played out, there were many more instances of sensational reporting that were managed by organizational leaders and their social media managers. Controlling social media in today's age is impossible and could cause far more harm than it is worth. Blocking social media during a crisis event might actually cause a crisis in itself so it cannot be dismissed by agency leaders and those working in the EOCs and fusion centers.

Social media currently plays an important role in incident response. It proves useful in myriad of circumstances but must be managed constantly to ensure accuracy and prevent information inundation of the responder community. The technology is not going away. The disaster community will need to continue to embrace it and develop procedures for proper implementation and, most importantly, management. Resources must be allocated, social media managers must be included in all facets of the planning and response process, and leaders must be open to this new and innovative way of saving lives.

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CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

> Our national preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens. Everyone can contribute to safeguarding the Nation from harm.
>
> — President Barack H. Obama,
> *Presidential Policy Directive 8*

Conclusions

There seems to be no shortage of companies willing to develop and sell the US Government common operating picture platforms and software. Many of these companies have successfully sold COP tools to the state NGs, emergency managers, and federal departments. It should be simple enough to link these products or for one federal agency to take the ball and run with it. Doing so would not only limit the masses of confusion in EOCs and fusion centers but would conceivably save money, lives and property. However, this task has become monumental due to a myriad of reasons.

Simply put, DHS does not manage local, state or federal governments and cannot physically make government organizations upload their disaster response information into a federal COP. Similarly, NGB does not have the authority to mandate that state-NGs utilize a specific system. Yet, when the incident exceeds the local and state capabilities, it is the federal government who is called upon to save lives and property.

It is the federal government, and by default organizations such as FEMA and NGB, who are required to testify before Congress as to why they mismanaged a disaster. Why is a federal agency charged with saving life, limb and property unable to adequately

identify commodity locations; military forces and emergency personnel locations; road closures and alternate supply convoy routes?

But how does a federal government without the power to infringe upon state's rights make the state organizations comply with the COP mandate? The creation of the COG is a start. Using a council of state elected leaders, and by default, commanders in chiefs of their state militias, allows state voices to be heard while collaborating for a true national defense and homeland security strategy. That the COG has identified and prioritized a national, geospatial SSA requirement is a step in the right direction. Implementation, though, seems to be some time away.

As a fellow logistician and former CGSOC student acknowledged, "strong backing by a senior commander makes the likelihood of successful system implementation much greater."[1] The requirement for a federal COP must have a "strategic sponsor". This said, enough of our senior leaders, in uniform and out, have acknowledged that there is a need for SSA and a COP during disaster response. But what are they really doing about it? What can they do about it?

As this thesis is being composed, the federal government implemented furloughs of civilian employees and the entire government shut-down for 16 days except for essential personnel. So where does this leave DHS and their mandate from seven years ago to develop an over-arching SSA system for the whole of government and whole of community? The better question remains, why has DHS been allowed to fail at standardizing a COP when the disasters have not, and never will, stop happening?

The NMSZ overview was provided in this research as an attempt to open the reader's eyes of a potential disaster waiting (and predicted) to happen. Scientists who

have studied this fault line strongly believe another series of earthquakes will happen in the NMSZ soon. If this does occur, the impacts will be astronomical, both in fiscal requirements and human suffering. But it does not need to be a no-notice, multi-state earthquake that opens our eyes. It could be another serious hurricane, wildfire, terrorist bombing, flood, tornado or myriad other natural or manmade disasters affecting more than one jurisdiction. Any of these future occurrences requiring coordination at the local, state, and federal levels will still suffer because of a lack of a national COP.

Throughout the research for this project it was determined that NGB has provided a COP for use by the states. Though the exact reason some of the state NGs fail to use JIEE remains unknown, it would appear that the states are satisfied with the COP tools they have acquired outside of NGB's purview. Unfortunately, this constrains the senior leaders at the ARNG, ANG and NGB because they still need staff officers to "pull" disaster information from the state JOCs. This takes time and people to make it happen and during a disaster, information is being requested and the answers need to be instant. When a disaster is in its opening stanzas, the state NG JOCs do not have the time, manpower, or patience to answer the phones to update "higher".

For reasons known only to the state organizations, how much information they share seems to be just as important as what information they share and when. Why the state NGs decide to withhold "proprietary" information from NGB is unknown. On the other side of the coin, NGB itself decides what information it shares with other national-level organizations both inside DoD and beyond. The same rings true with DHS and FEMA. No one is blameless in this information-sharing black hole.

Until all departments decide to open their disaster logbooks and let each organization responsible for the disaster see where resources are, there will never be a national-level COP. When an organization decides to filter information, or use a COP platform that does not interface with their higher headquarters' system, the common picture cannot exist. SSA is "shared" information yet all of us decide what information we share and with whom. What are we hiding? Are we afraid that someone else will notice our mistakes, or worse yet, a waste of money and call us out on it?

If we shared everything, would it make our organization more vulnerable to lawsuits? Congressional testimony examination? The American taxpayer demanding answers to our fallibilities? Create your own opinion but it is already happening so why do we continuously hide or limit our information sharing? The reporters and lawyers are going to find out where we went wrong in our disaster response so why not close the book on holding-back? Put all the information out on the table, manage our resources more efficiently, save taxpayer money by not creating redundant systems and likewise stop sending too many (or not enough) resources to the affected areas.

Information security, or lack thereof, is an overriding theme for organizational information sharing. That government organizations withhold information because the local-level responders do not have the "clearance" to know it is a disservice to the citizens for which they work. Why does FEMA classify their AARs and LLs as FOUO limiting access to only those with the proper credentials? What secrets do these documents hold that, if shared with the American public and all disaster responders, compromise national security? Until our government changes its stance on information sharing, there can never be a true COP for domestic response use.

For Further Study

Staying on-track with the original research question was difficult because many branches and sequels were discovered along the way. Had time permitted, this research could have gone down many more routes and contained several other areas of emphasis. For the purpose of this section, the focus will be on use of social media SSA in disaster response, the sharing of lessons learned, and the overall culture of disaster responders in regards to what information we share.

Shared Situational Awareness Through Social Media

Research into the integration of social media during disasters should be a priority for DoD, DHS, FEMA, NGB and all major government organizations within the HD and DSCA response framework. While the example of social media use after the Boston Marathon bombings was only one sample, outlets such as Twitter are being used during and after current natural disasters. Data exists for social media use by DHS and FEMA after recent current events. Further exploration into whether it is useful or a hindrance should be conducted to better understand how it can be leveraged for SSA in the homeland.

Sharing the information between followers is one thing, but integrating the information from citizens affected by the disaster should be researched and best practices captured. How does DHS and FEMA obtain on-the-scene reports from everyday citizens who can provide the most accurate information available in real-time? Recalling that the JOCs and fusion centers become inundated by information, how can social media be leveraged and used appropriately without requiring additional labor to sift through the data?

Since the data from the Boston bombings show a large increase in followers and retransmission of data at the local level, how can federal agencies increase their social media followership? Is it even necessary since all disasters occur at the local level and are handled locally until higher levels of assistance are needed? When a multi-state disaster occurs, such as a NMSZ scenario, federal agencies will almost immediately activate and begin sending federal assistance. Those affected, and the rest of America, will want instant updates and the federal agencies should be prepared to provide it through social media. Additionally, those affected without electricity or cell phone coverage could use their smartphone (with data plans) to transmit statuses and updates to the appropriate agencies.

The costs associated with using social media should also be researched. For example, as social media reporting grows, so do the staffs required to maintain it for the disaster agencies. At the local levels, dual-hatting of public affairs officers is likely commonplace. However, as these disasters increase in size and scope, the workforce required to sift through the data will, too. Ensuring the data reported is accurate is as important as the data itself. Staffs will be required to deconflict reports and issue updates to ensure that public pandemonium does not occur due to inaccuracies.

Sharing of Lessons Learned

Another topic for further research concerns DHS and FEMAs procedures for classification of AAR and LL documents. These documents contain an extraordinary amount of information for all levels of government and the responder community. The data contained in them could also be of great use to any American citizen concerned with disaster response. However, many are classified at levels above the ordinary citizen and

only accessible if DHS approves it. A researcher could delve into this topic and discover the meaning behind it or push for changes to the current system.

This research has discovered that DHS shares a "quick view" report of certain AARs but the full reports are classified FOUO and only accessible through the Lessons Learned Information System (LLIS). LLIS requires users to validate their access and questions their "need-to-know". Doing this severely restricts the audience, many of whom may benefit from understanding both the positive and negative findings of a disaster event.

Are these AAR and LL documents locked away because of a potential terrorist threat should just anyone have access to the findings? Has intelligence ever been gathered that proves that sharing natural disaster data somehow compromises U.S. national security? Should DHS relook this process and make the full reports available to the general public? Should DHS classify natural and man-made disaster AAR data differently to allow natural disaster planners the opportunity to more easily learn from the event?

A Study in Ethnography

Perhaps it would benefit the topic of a federal-level COP topic by looking into the culture of first responders, emergency managers, and military forces in relation to the sharing of information. Is there a cultural distinction among this community that prevents them from sharing all information during a disaster? At each level of responder-from the local police department up to the federal government-only certain amounts of information is shared among the responder community. An ethnographic approach to this topic could uncover the reasons why we create these data "black holes" during crisis.

Unanswered Questions

Why has DHS not been held accountable for creating a national COP for SSA within all levels of government? The organization was mandated by law to be the administrator of the COP for HD and DSCA. Yet nearly a decade after Hurricane Katrina, DHS still does not have a centralized system for all levels of government to access. Additionally, why do JIEE and the new DHS COP not interface? If FEMA, USNORTHCOM and NGB are the nation's responders for domestic disasters, their systems used for information management interact.

Things That Could Have Been Approached or Done Differently

While a qualitative research methodology was used for this thesis, further research could have been conducted by generating surveys asking each JFHQ-S what COP product they traditionally use during disaster response. This research could have focused solely on JIEE and why it is not used by every state. Surveys or questionnaires could have asked the respondents whether they use JIEE regularly or if they prefer to use a COP product specific to their states. If they do not use JIEE, why not? What would it take to gain consensus by a majority of the states to use it? If they use JIEE and find it difficult to manage or not applicable for their situations, what could be done to improve the experience?

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