THE DUAL STATUS COMMANDER AND HURRICANE SANDY:

MATURING MILITARY RESPONSE WITH PROCESS IMPROVEMENT

by

Ryan P. Burke

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Disaster Science and Management
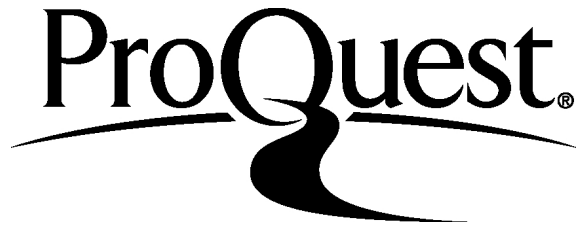
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ABSTRACT

The U.S. military's role during civil support operations has significant strategic implications for U.S. homeland defense, national security, and emergency response efforts. In a large scale incident response scenario requiring combined military support from the National Guard and federal Armed Forces, management of these assets continues to challenge all involved. This issue of coordination is uniquely situated between individual states' interests and those of the federal government. There are issues of constitutionality, legality, policy, financial considerations, and even politics that influence the use of military forces – both state and federal – in civil support scenarios. Despite the issues, military forces are frequently involved in many of the most significant domestic response missions, often in a very public manner. As such, military force allocation and management has evolved into a major topic of conversation among policy makers, academics, emergency managers, and military strategists alike. In this context, there is a philosophical conflict between federalism and state sovereignty during military civil support missions that continues to present itself as an impediment to success. Balancing these institutionally divergent approaches to achieve a unified, efficient, coordinated and effective military response continues to prove problematic.

While National Guard forces regularly support civil authorities, extreme incidents like Sandy, Katrina, and the 9/11 terror attacks often require extensive federal military support in order to save lives, prevent suffering, and mitigate property damage. Effectively integrating federal military and state National Guard forces to

achieve a coordinated, collaborative, and unified response has been a repeated and complex problem during past domestic civil support operations. In the years following Hurricane Katrina with coordination issues at the center of the debate, state governors continued negotiations with the Department of Defense to link more effectively the National Guard – or Title 32 forces when federally funded and under state governor control – with Active Component and Reserve Component – or Title 10 – forces. Establishing a mutually beneficial command and coordination mechanism linking state and federal forces would, in theory, improve military civil support missions by reducing the redundancies and closing operational gaps noted in past operations like Hurricane Katrina. The accepted solution to this challenge, known as a dual status commander, legally authorizes a single military commander to serve in two duty statuses – state and federal – simultaneously while executing the duties of these statuses in distinctly separate capacities.

The dual status commander can, in effect, serve as the necessary link between federal and state military forces. This commander serves both as an information conduit and a resource employer; a single representative of both state and federal chains of command through which all tactical decisions should travel. This unique command arrangement has been used successfully during pre-planned special security events throughout the United States. With this knowledge and with the consent of state governors, Section 515 of the 2012 National Defense Authorization Act (NDAA) specified that during the simultaneous employment of the federal Armed Forces and state National Guard forces, the dual status commander arrangement would be the "usual and customary command and control arrangement, including for missions involving a major disaster or emergency."

Used for the first time in an unplanned capacity during the response to Hurricane Sandy in New York, the dual status commander concept demonstrated promise compared to past events. However, there are numerous gaps in the available dual status commander guidance leading to increased complexity and confusion during contingency operations in the homeland. This dissertation uses a case study approach combining document review, semi-structured interviews, non-participant observation, and focus groups to examine the dual status commander arrangement used in New York under Joint Task Force Sandy during the storm response. Using the data and information collected for the case study as a basis for qualitative analysis, a process improvement approach called maturity modeling is used to create a comprehensive list of operational best practices – or essential task considerations – that can be used to improve future mission performance and decision making. This process model, referred to as the Dual Status Commander Capability Maturity Model (DSC2M2) identifies goals, practices, and key requirements of successful dual status commander operations as seen by those involved in the planning, preparation, and execution of these critical operations. Building on this and the analysis presented during the Hurricane Sandy case study, the dissertation also includes fifteen strategy and policy-specific recommendations intended to help improve future unplanned domestic response operations.

The intent of the research is to provide a comprehensive analysis of the Hurricane Sandy military response operation under the dual status commander arrangement. The operational maturity model and associated strategy and policy recommendations offer military and defense officials a unique and comprehensive

analysis of the response effort as well as a tool to assist decision making during future challenges of a similar scope. The model and recommendations provide a unique way to examine the dual status commander arrangement and develop a structure for improving our understanding of and ability to execute such complex missions in the future. In addition to contributing knowledge to the early stages of Hurricane Sandy research, this work adds to the limited body of knowledge focused on dual status commanders. The process model and recommendations also contribute to the evolving dual status commander discussions and provide a practical tool and base of analysis for improving the efficiency and effectiveness of this critical military mission capability well into the future.

Chapter 1

INTRODUCTION

"Hurricane Sandy offered us a glimpse of what a complex catastrophe which spans several States and regions could look like. We will continue to mature the successful dual status command construct … so that we will be ready to act swiftly and with unity of effort when the unthinkable happens and we are called."

~ General Charles Jacoby, Jr., Commander, US Northern Command (NORTHCOM), March 20, 2013 (House Armed Services Committee Hearing 113-22, 2013)

Speaking before the House Armed Services Committee, General Jacoby addressed the ongoing challenge of establishing a unified and collaborative military response between state National Guard and federal military forces in response to domestic disasters. His comments elicit some important questions requiring further investigation in order to continue improving military operational capabilities and capacities during these critical missions. For instance, why was the military response to Hurricane Sandy successful, as General Jacoby suggests? Why did the dual status commander (DSC) arrangement – a command arrangement in which a military commander is authorized by law to serve in both state and federal status simultaneously – work better as compared to previous military response efforts such as Hurricane Katrina involving more traditional (divided) models of command organization? What are the indicators of success? What are the areas that need to be improved? And finally, what needs to be done to make tangible improvements in joint military civil support operations? These are just some of the many questions with

implications for future plans, policies, and procedures that should be addressed as we continue to examine the Hurricane Sandy response and mature military operations under the dual status commander arrangement.

The primary purpose of this research effort, therefore, is to offer recommendations and methods to improve future military civil support operations under the dual status commander arrangement by providing a systematic and objective analysis of the dual status commander-led response to Hurricane Sandy in New York. We need to improve our understanding of the dual status commander concept and employment in operational contexts. We also need to seek ways to enhance our knowledge of the critical processes involved in such complex operations. This research expands on General Jacoby's testimony by providing a tool to do exactly as he said: *mature* the dual status commander construct through the application of process improvement techniques designed to help us understand the complexities of such operations.

1.1 Motivation

With often unparalleled emergency response capabilities and capacities, the United States military is an extraordinary asset capable of providing immediate assistance to civil authorities in order to "save lives, prevent human suffering, and mitigate great property damage within the United States" (Department of Defense, 2012d, p. 4). Department of Defense (DoD) support during disasters and emergencies – known as defense support of civil authorities (DSCA) – is a critical resource for civil authorities during times of disaster and crisis that can offer unmatched capabilities. However, military support efforts often experience coordination challenges leading to operational impediments.

1.1.1 Lessons from Hurricane Katrina

The U.S. military's response to Hurricane Katrina was widely criticized for coordination failures between state National Guard forces and federal military forces, procedural inefficiencies, force allocation redundancy in some places; gaps in others, administrative and legal failures, and overall response timeliness (Bowman, Kapp, & Belasco, 2005; Milliman, Grosskopf, & Paez, 2006a; Tierney, Bevc, & Kuligowski, 2006; Gereski, 2006; Topp, 2006; Jensen, 2007; Schwabel, 2007; Teague, 2007; Tussing, 2007; Burkett, 2008; Osterholzer, 2008; Dunphy and Radel, 2009; Hall, 2009; Porter, 2010; Apte and Heath, 2011; Prendergast, 2011; Prosch, 2011; Schumacher, 2011; Tussing, 2011; Bentley, 2012; Blum and McIntyre, 2012; McHale, 2012; Government Accountability Office, 2012). Since Katrina, practitioners and researchers have been working to develop a solution to the noted problems limiting DSCA operations. The proposed solution to these problems called for a command arrangement that would simplify the orders process, reduce force redundancy, and close the operational gaps within the DSCA environment while simultaneously addressing the noted tension between state sovereignty and federalism, the legality and constitutionality of using military forces for domestic response, and the financial barriers present when combining state National Guard and federal military forces (Topp, 2006; Burkett, 2008; Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011).

The ongoing effort to improve domestic military response operations has resulted in changes to policies and the adoption of the dual status commander arrangement as the preferred command mechanism during simultaneous employment of state National Guard and federal military forces. Specifically, the Section 515 of the 2012 National Defense Authorization Act (NDAA) specified that during operations

involving both National Guard and federal military troops, the dual status commander would be the "usual and customary command and control arrangement, including for missions involving a major disaster or emergency" (U.S. Congress, 2012, p. 98).

Principally intended to address the failures and deficiencies in past civil support efforts like Hurricane Katrina, this command arrangement has been used successfully in previous years during planned events of national significance. However, according to the Office of the Secretary of Defense (OSD), the military response to Hurricane Sandy was the first coordinated attempt to use this command arrangement for a no-notice/limited-notice[1] incident in U.S. history (Office of the Secretary of Defense, 2013c).

1.1.2 Hurricane Sandy

Hurricane Sandy made landfall near Brigantine, NJ at approximately 11:30pm on October 29, 2012 as the largest Atlantic hurricane on record (National Oceanic and Atmospheric Administration (NOAA), 2012). While it was downgraded to a tropical storm prior to making landfall, Sandy's path took it over one of the most densely populated regions in the country, causing massive damage in areas stretching from Washington D.C. to New York City. Similar to Hurricane Katrina in 2005, the response to Hurricane Sandy involved a large federal support component including

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[1] "No-notice/limited-notice" is the DoD accepted vernacular referring to incidents other than planned events of national significance (i.e. National security special events (Super Bowl, political conventions, etc.). According to DoD personnel, the no-notice/limited notice designation often applies to hurricanes, earthquakes, tornadoes, terrorism, etc. Currently, there is no doctrinal distinction between no-notice and

elements of the federal Armed Forces. As well, state National Guard forces were activated throughout the Northeastern United States to assist civil authorities in responding to the storm. What makes Sandy different from Katrina and every past civil support operation, however, is that this DSCA response effort was the first time in U.S. history where a dual status commander assumed simultaneous command of both state and federal military forces. Combining this with the unprecedented timing of the storm a week prior to the 2012 presidential election made Hurricane Sandy an historic event unlike any in history.

Research examining this storm is still in its infancy. Those who participated in the planning and execution of the response operation were – and still are – accessible and willing to share their experiences. With resources available to assist in the research coupled with the historic significance of this storm as the first use of a DSC arrangement during a no-notice/limited-notice incident in DoD history, the events of Hurricane Sandy provided a relevant and timely research topic to pursue.

Beyond the mentioned motivations, the 2014 Quadrennial Defense Review (QDR) establishes protecting the homeland – including support to civil authorities – as one of the three core pillars of future defense strategy (Department of Defense, 2014b). In interpreting the 2014 QDR, it seems clear that the strategic rebalancing of defense priorities away from counter-terrorism/insurgency operations and back to the homeland will see the U.S. military continue to play an important role in domestic civil support and crisis response operations like in Hurricane Sandy. By studying the military response to Hurricane Sandy, this research helps us better understand what worked, what failed, and how we can improve future DSCA operational response capabilities, capacities, and effectiveness under the DSC arrangement. In this context,

the military response to Hurricane Sandy provided an opportunity to examine the efficacy of the dual status commander arrangement for civil support scenarios. Learning from the successes and failures of the Sandy response provides valuable insight to help guide future improvement efforts.

Despite some military commanders' declarations that Hurricane Sandy was a success, there were several notable challenges associated with this response effort. To ensure continuous improvement of future dual status commander-led military response operations, stakeholders and decision makers must understand exactly what these challenges were and how to address them in order to avoid similar shortfalls in future missions.

1.2   Problem Statement

While military assets can provide a valuable service during civil support operations, establishing a unity of effort between National Guard and federal military forces has been problematic in past response efforts; most notably Hurricane Katrina. The DSC concept is a proposed remedy to this complex coordination problem. While it has been used effectively in planned events since 2004 (Government Accountability Office, 2012; 2013; Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011), the DSC arrangement has limitations during no-notice/limited notice incidents such as hurricanes, earthquakes, and terrorist attacks. There is a critical need to mature this concept to ensure improved operational response prior to the next unplanned event requiring military support.

As discussed, research examining Hurricane Sandy is in the beginning stages of development. There is also a very limited body of research evaluating the intricacies of dual status commander policies, laws, and operational history.

Additionally, the U.S. military does not yet have a comprehensive list of mission essential tasks for DSC-led operations. As a result of the lack of general knowledge and awareness regarding the DSC concept and employment at the time, the DSCA response to Sandy under the DSC occurred in a relatively ad hoc fashion. This led to some notable operational issues that need to be improved prior to the next DSCA response.

1.3   Objective

The primary objective of this research was to provide objective and systematic analysis of the military response to Hurricane Sandy in New York and offer research-based recommendations for improving defense support of civil authorities operational processes under the dual status commander construct during no-notice/limited-notice incidents. The secondary objectives of this research were to:

- Provide a rigorous case study examination of the military response to Hurricane Sandy under Joint Task Force (JTF) Sandy in New York.
- Using process improvement techniques and the data collected during this case study, create a structured representation of the dual status commander process in the form of an operational maturity model in order to identify mission essential tasks and key requirements of DSC operations that will assist leaders and decision makers during these complex management challenges.

1.4 Research Questions

Given the current immaturity of the dual status commander arrangement and the demonstrated need to mature the concept for improved operational performance in the future, the specific research questions were:

1. How do we create a Dual Status Commander Capability Maturity Model (DSC2M2) to better understand and implement DSC in future civil support missions?

2. What are the capability and maturity level components for DSC operations?

    a. What are the major process areas of DSC operations?

    b. What are the specific goals and practices of DSC operations?

    c. What are the generic goals and practices of DSC operations?

1.5 Overview of Methodology

In response to a request from DoD to establish industry standards for contractor performance, researchers at Carnegie Mellon University's (CMU) Software Engineering Institute (SEI) developed the first capability maturity model (CMM) in 1987. As a process road map of sorts, the CMM defines the best practices of a particular scope of work and provides a framework for improving and institutionalizing processes in order to improve performance and quality (Garcia and Turner, 2007). To answer the research questions above, it was necessary to design a structured research approach using similar techniques to previously developed and accepted maturity models across a variety of industries.

Focusing on ways to improve processes, maturity models are designed using qualitative methods of data collection such as non-participant observation, interviews,

document analysis, and case studies (de Bruin, Rosemann, Freeze, & Kulkarni, 2005; Holmes and Walsh, 2005; Rosemann and de Bruin, 2005; Ahern, Clouse, & Turner, 2008; Chrissis, Conrad, & Shrum, 2007; Garcia and Turner, 2007; Popplebub and Roglinger, 2011; Yimam, 2011). In addition, "it is recommended that exploratory research methods such as Delphi technique, Nominal Group technique, and focus groups be considered" in the design and development of a maturity model (de Bruin et al., 2005, p. 7). In order to gather this type of data for the design and population of a maturity model, key stakeholders and industry experts are interviewed regarding industry standards and best practices while important documents such as policies and operating procedures are evaluated for substance. The content of the model is then populated from this data and validated by the same stakeholders and industry experts to ensure an accurate representation of a given process. The SEI identifies five steps necessary to create a maturity model:

1. Define requirements for the process
    a. What is the process goal? Objective?
2. Design the process
    a. Graph the process and write the process steps
3. Implement the process
    a. Pilot test with stakeholders and SME's
    b. Use the process map and determine suitability
4. Validate the process
    a. Results from pilot test indicate appropriateness of design
    b. Make changes as necessary
5. Deploy the process
    a. Communicate the process steps to the target audience and ensure support tools necessary for completion are present
       (Garcia and Turner, 2007, p. 32-33).

This research emphasized steps 1-4 above and succeeded in defining process requirements, as well as designing, implementing, and validating a process for the

creation of a dual status commander capability maturity model. Future research

beyond the dissertation is needed to deploy and test the model (Step 5) in an

operational context using a traditional experimental design. In addition to the maturity

model development approach above specific to software engineering practices, de

Bruin et al. (2005) provide useful guidelines for generic maturity model development.

Noting the industry specificity of SEI's CMM and the limitations in using these

models in other disciplines, the researchers proposed a similarly rigorous development

methodology that proved useful for guiding the development of the DSC2M2.

Combining the qualitative techniques noted in de Bruin et al.'s (2005) model

development guidelines with SEI's guidance, I created a specific model unique to the

challenges of current DSC operations for no-notice/limited notice incidents.

This decision to develop an original maturity model for DSC rather than apply

an existing model can be a source of question. However, the currently available

maturity models for industry and services do not map well to the complexities of

military civil support processes. Applying such models to an unconventional process

was an unnecessary effort likely to yield results with questionable validity and

reliability. Instead, my effort to create a discipline-specific model for DSC operations

during a no-notice/limited notice incident resulted in a process improvement tool that

is rigorously developed, validated by subject matter experts, and an accurate

representation of the current state of practice. The developed model also provides

structured guidance to achieve an improved operational capability and maturity for a

critical DoD mission area. Designing and populating this model, therefore, required

the combined use of the qualitative research methods mentioned: semi-structured

interviews, case study, focus groups, non-participant observation, and document review and analysis.

1.6   Research Scope

DSC's have been employed in other operational situations since 2004. However, each of the previous operations involved pre-planned National Security Special Events (NSSE) such as various political conventions, Super Bowls, and large-scale government border security training exercises (Government Accountability Office, 2012; Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011). No-notice/limited-notice incidents like Hurricane Sandy do not provide the luxury of extensive planning and preparation to guide an effective response. Hurricane Sandy demonstrated many strengths of the DSC operational structure; but limitations were noted as well. This research framed the DSC structure within the scope of a no-notice/limited-notice incident. Since Hurricane Sandy was the first and – at the time – the only DSCA response to use the dual status commander arrangement, the design and development of the DSC2M2 is limited to the lessons learned from this event only. Further defining the research scope, the only DSC to receive both federal military and state National Guard forces during the Sandy response was Brigadier General (BG) Mike Swezey of the Army National Guard. As a result, the case study focuses only on the JTF Sandy response effort in NY under BG Swezey's command. Other aspects of DSCA operations are useful for context, history, and background of the DSC discussion. However, the developed maturity model was limited to establishing standards and mission essential tasks for dual status commander operations only. Other considerations for DSCA related activities including financial

considerations of disaster declarations such as reimbursement requirements as well as past events are beyond the scope of this project.

With regard to process improvement, a wealth of literature and models exist for consideration. While other process improvement strategies such as Lean and Six Sigma are discussed for context, this research uses Capability Maturity Models (CMM) and Capability Maturity Models Integrated (CMMI) as the primary process improvement tool to guide the development of the DSC2M2. Since this research attempts to provide a structured representation of a DSC operation that can be beneficial for policy makers and military commanders alike, using CMM/CMMI as a development guide for this project was a logical extension of an already-endorsed DoD product.

Beyond the DoD endorsed design and utility, the model also offers a visual tool to assist in the planning and execution of DSC operations; a checklist of requirements and mission essential tasks that is absent in the current operational picture. Further, the model can provide planners and operators with the ability to assess current maturity and capability levels using established maturity model assessment methods. By developing target and capability profiles, military forces can better understand their weakness and vulnerabilities in relation to the model while also understanding how to adjust and improve current operations. Within this context, this model also brings an opportunity for performance assessment and guided process improvement by providing a mechanism for comparing operational performance against a structured list of best practices.

Given the diversity and range of scenarios encountered by military forces during domestic response operations, a "one size fits all" approach is not appropriate.

Focusing on quantifiable measures to evaluate military performance during these scenarios is not a valid model of assessment because it is difficult to create a single measure of performance that can be valid for every conceivable scenario. Instead, this model highlights the non-quantifiable tasks essential to a DSC operation; not the measurable quantities that are often irrelevant to a mission's effectiveness. The model emphasizes and lists the processes – or quality measures – that form a successful operation.

1.7   Organization of the Dissertation

For ease of navigation, the dissertation is divided into seven substantive chapters beyond the introduction:

- Chapter 2: Literature Review and Context
- Chapter 3: Research Methodology and Process
- Chapter 4: Hurricane Sandy Case Study
- Chapter 5: Maturing Missions with Process Improvement
- Chapter 6: DSC2M2 Design and Development
- Chapter 7: Results and Recommendations
- Chapter 8: Conclusion

In addition to the above chapters, there are several appendices included at the end of the document. The appendices are intended to provide additional detail and reference material to supplement the discussion contained throughout this dissertation.

- Appendix A contains a list of acronyms used throughout the dissertation. As this research focuses heavily on the U.S. military and its processes and procedures, there are dozens of acronyms

used throughout. This appendix is a quick reference to each of the acronyms contained in this document.

- Appendix B contains a glossary with some of the more ubiquitous terms used throughout this dissertation as well as many terms less commonly used but deemed obscure or unfamiliar to most readers.

- Appendix C contains a table of authorities and laws governing military forces during domestic response scenarios. The table includes a brief description of the laws noted in Chapter 2, Figure 1 and is intended as a reference to supplement the ongoing discussion of the relevant laws throughout this dissertation.

- Appendix D contains a table displaying every documented dual status commander operation since the concept was adopted by DoD in 2004. The table includes both pre-planned and unplanned events. It notes the date of the operation, the event or incident name, the location, and the state(s) appointing a dual status commander. There are several references to dual status commander-led operations other than Sandy throughout this dissertation. This table provides a supplemental reference for each of these operations.

- Appendix E contains a brief discussion of the various military reference publications pertinent to the DSC conversation. These references, produced and published by the Department of Defense, comprise the major publications emphasizing domestic military civil support operations. The primary content of each reference is discussed as well as how much and to what extent – if any – of the

document discusses the dual status commander concept. Upon review of these documents, it is clear that we need more guidance emphasizing the dual status commander concept in these and other military reference publications.

- Appendices F-I contain all Institutional Review Board (IRB) package documents relative to this research project including the IRB approval letter from the University of Delaware, the informed consent form, the research interview guide, as well a generic copy of a recruitment email sent to Defense Department personnel requesting participation in the research.

- Appendix J contains additional detail to supplement the discussion on research design in Chapter 3. The material here addresses the specifics of the interview sample selection criteria and the reasons for using the bounds described. This appendix also addresses subject recruitment by describing the process I used to establish contact with and gain access to the various Defense Department personnel who participated in the research and data collection efforts.

- Appendix K contains discussion material specific to the data collection efforts also described in Chapter 3. This appendix provides a more detailed account of the actual data collection activities including specific discussions of the mechanics and logistics of the semi-structured interviews, focus groups, and non-participant observation of a simulated military exercise.

- Appendix L contains a more thorough description of the qualitative coding process used for data analysis. This appendix addresses the process I used to perform both open and axial coding and describes the specifics of how I developed the initial codes and subsequent code frames for further analysis. The process described here helped me to develop both the final maturity model as well as the 15 strategy and policy-specific recommendations discussed later in this dissertation.

- Appendix M contains three variations of the Dual Status Commander Capability Maturity Model developed as part of this dissertation. Each variant is the result of separate data collection and analysis activities with different data sources serving as the primary input for each of the three models.

- Appendix N contains a copyright permission letter and corresponding email received from the CMMI Institute authorizing permission to include a series of graphics contained in selected technical reports from Carnegie Mellon University.

- Appendix O contains a page from one of two identical contracts from the U.S. Army War College Strategic Studies Institute authorizing the unrestricted reproduction of the material produced for these contracts. Material in this dissertation is published by the Department of Defense through the aforementioned contracts with the Department of Defense. This portion of the contract authorizes the reproduction of the same material without restriction.

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- Appendix Q contains an image extracted from the American Society for Public Administration's (ASPA) Center for Accountability and Performance (CAP) website noting the free distribution and accessibility of all published case studies. Part of this dissertation is published on the CAP website under the Case Study Program as a result of a national case study competition in which my study was selected as a finalist. Per the website, the material is freely and openly distributed throughout the research community without restriction.

1.7.1   Chapter 2: Literature Review and Context

The literature review addresses the dual status commander concept including historical background, policy, and law. It evaluates a combination of scholarly research and government policies in order to identify the key issues related to the history, development, and current state of practice regarding the dual status commander. The discussion notes the perceived gaps and limitations in current DSC research and practice as well as the need to improve operational understanding of future DSC-led missions. There is a brief discussion of the shortfalls noted in the

military response to Hurricane Sandy to emphasize the need for process improvement. Building from this, chapter 2 then addresses process improvement concepts including an overview of alternative approaches similar to maturity models. The chapter continues by offering a detailed look at maturity models including the history, development, utility, interpretation, and application of the concepts and techniques. Current maturity models, scholarly research, textbooks, technical reports, and other such documents pertaining to maturity models are included in the literature review as well.

1.7.2   Chapter 3: Research Methodology and Process

Chapter 3 describes the research methods and process employed to complete the dissertation. This section includes a brief discussion of the philosophical logic, perspective, and perceived biases driving the research. It also addresses the various research venues where interviews and focus groups were conducted and discusses some of the limitations involved with interviewing subjects in secure government facilities. Chapter 3 also discusses sampling criteria, data collection, and the analysis process. Here, I provide a description of each research method employed and its associated analysis techniques. The history and applicability of the qualitative methodology chosen for this research is addressed along with literature detailing the accepted standards of these methods. A research design graphic is presented to illustrate the relationship of the chosen methods and the progression of the research.

1.7.3   Chapter 4: Hurricane Sandy Case Study

Chapter 4 is partly an excerpt of a research monograph produced for the U.S. Army War College (USAWC) Strategic Studies Institute (SSI) as part of an External

Research Associates Program (ERAP) contract award that principally funded this research. Pulling from the published monograph, this chapter discusses the military response to Hurricane Sandy in detail. This chapter is presented as an individual case study of the operation covering the events that occurred between October 22 – November 15, 2012. The case study originates with an overview of the unique geo-political landscape present in the New York metropolitan area. In order to fully understand the complexities involved with not only the tactical decision making but the political influences as well, it is necessary to understand the distinctly different geo-political makeup of the city. From here, the events are separated into a chronology of five time phases for individual discussions. The discussion begins by evaluating the storm preparations undertaken by the federal government the week prior to the storm's landfall. The discussion continues with selected noteworthy events from the remaining two weeks of the military response. The chronology provides a basis for the subsequent section of analysis and discussion of lessons learned.

The last section of the case study chapter, Post-Event Lesson Learned, offers a categorical summation of several objective observations gleaned from the research and analysis of this event. These lessons learned serve as the foundation for some of the material in Chapter 7 discussion suggested recommendations for improvement.

1.7.4   Chapter 5: Maturing Missions with Process Improvement

Similarly to Chapter 4, Chapter 5 is also an excerpt of a research monograph published by SSI as part of a second ERAP contract award. This chapter offers a generic discussion of the benefits and utilities of process improvement strategies and their applicability to military operations. It addresses the basic tenets of process improvement techniques and their connections to DoD practices. It draws examples of

process improvement applications in other industries and attempts to argue for the implementation and employment of similar techniques in future civil support operations. Chapter 5 serves as the conceptual basis of support for Chapter 6 and the discussion of the DSC2M2 architecture.

1.7.5 Chapter 6: DSC2M2 Design and Development

Chapter 6 addresses the design, structure, utility, and suggested interpretation of the DSC2M2. Here, the model development process is discussed in detail with emphasis on how the interview, focus group, and related document data was collated, analyzed, and translated to form the substance of the maturity model. Each of the model components is described. Further, this section addresses the various ways the military end-user can use the model as a method for structured and continuous process improvement.

1.7.6 Chapter 7: Results and Recommendations

Chapter 7 discusses the findings resulting from this research effort. The chapter is separated into two sections; one that reiterates the utility and applicability of a process improvement model for improving future DSCA operations under a dual status commander; the other that addresses a series of 15 recommendations derived from the Hurricane Sandy case study. The recommendations are further grouped into two sections: 1) strategic and operational recommendations and 2) legislative and policy recommendations.

1.7.7 Chapter 8: Conclusion

This final chapter of the dissertation outlines the anticipated contributions to knowledge and practice as a result of this research. Specifically, this section discusses

the contribution to the ongoing research into Hurricane Sandy and this unique topic of research. Further, this section discusses the anticipated theoretical and applied contributions to military operations and academic mediums alike through the development of the DSC2M2. Chapter 8 also offers a brief summary of the overall research experience. It concludes with a short discussion of future research requirements and some final thoughts to summarize the dissertation.

Chapter 2

LITERATURE REVIEW AND CONTEXT

This study approaches the dual status commander concept through the lens of process improvement. It uses the events of the military response to Hurricane Sandy in New York as a basis for the case study approach and the development of the process improvement analysis and model. As such, there are three contextual areas of emphasis and several sub-components within the scope of this research and literature review:

1. The dual status commander concept
    a. History and evolution of the dual status commander
        i. Legal framework
        ii. Federalism vs. State Sovereignty
        iii. Origins of dual status commander legislation
            1. Failures of Hurricane Katrina
            2. Learning from Katrina
            3. Narrative of Legislative History
    b. Development of the dual status commander concept for no-notice/limited-notice incidents
2. Dual status commander-led operations during Hurricane Sandy
    a. Military after action reports (AAR)
    b. News/media reporting
3. Process Improvement and Maturity Models
    a. Performance Measures and Management
    b. Alternatives Process Improvement Strategies
        i. Total Quality Management
        ii. Lean
        iii. Six Sigma
        iv. IDEAL
    c. Capability Maturity Models (CMM) and Capability Maturity Models Integrated (CMMI)
    d. Adapting Maturity Models

e. Creating Maturity Models

The literature review that follows separately addresses each of these topics in order to provide relevant context to the dissertation and to position this research in the appropriate body of knowledge. As stated, the current knowledge regarding both Hurricane Sandy and the dual status commander arrangement is sparse. Pertinent policies, laws, and research studies examining DSC are summarized and synthesized in order to illustrate the short evolution and complexity of this important military command initiative and its eventual first ever activation for a no-notice type incident during Hurricane Sandy. In this regard, the DoD response to Hurricane Sandy under the DSC arrangement will be examined to illustrate the process complexity as well as the noted gaps and deficiencies. Expanding on the need to mature this newly implemented arrangement, the literature review addresses performance management and evaluation research with emphasis on process improvement techniques including Lean, Six Sigma, Total Quality Management, and Capability Maturity Models. The review of the selected process improvement literature demonstrates the connection, applicability, and potential of CMM/CMMI techniques to generate significant process improvements to future DSC operations. In this light, the history of CMM/CMMI is explored along with a discussion of other uses and approaches to maturity modeling and process improvement. Since maturity models and process improvement bring an established base of scholarly research, the development and applications of these tools will be addressed in order to demonstrate the theoretical connection to the proposed area of research. However, there is minimal research using maturity models for military operations from which I can draw for comparison. Therefore, this research is grounded in theoretical concepts but uses a research-supported approach to create the

finished product. Lastly, the literature review addresses a small sample of studies

using similar approaches and methodologies to this research design as a way to

illustrate the maturity model development process for an operational organization such

as the US military.

2.1   The Dual Status Commander: Concept and Explanation

The current state of knowledge regarding the DSC concept is limited to its ten

year existence in national law and policy (2004-2014). During this time, most of the

research literature emphasizing the DSC concept as a primary investigative

phenomenon has come from our various military institutions (Army War College,

Naval Post-Graduate School, National Defense University, etc). Outside of military

strategy and policy circles, research examining the DSC concept is almost entirely

absent. Even within the federal government, congressional reports and various military

procedural manuals address the DSC concept as a matter of guidance for

implementation rather than from a critical research perspective. Despite the limitations

in breadth and depth of research on this topic, we do have a consistent basis of

knowledge regarding the history, development, and performance of the DSC concept

during DSCA operations.

The existing research tells us that DSC developed out of a need for improved

coordination efforts during domestic military operations involving both state National

Guard and federal military forces. Integrating National Guard forces with federal

military forces for a combined response effort presents a complex management

challenge rooted in political posturing, constitutional and legal limitations, and

military command authority.

While military assets can provide a valuable service during civil support operations, establishing a unified effort between National Guard and federal military forces has proven to be problematic in past civil support efforts. The DSC concept offers a command arrangement legally authorizing one military officer to assume simultaneous but mutually exclusive command authority over both state National Guard and federal military forces. According to the draft DoD Instruction 3025.xx, "Dual-Status Commanders for Defense Support of Civil Authorities," a dual status commander is:

> A military commander who may, in accordance with the law, serve in two statuses, Federal and State, simultaneously while performing the duties of those statuses separately and distinctly (Department of Defense, n.d.).[2]

The Government Accountability Office (GAO) defines dual status commanders as:

> Military officers who serve as an intermediate link between the separate chains of command for state and federal forces—have authority over both National Guard forces under state control and active duty forces under federal control during a civil support incident or special event (Government Accountability Office, 2012, p. 2).

More simply stated: a DSC is "responsible for performing two separate and distinct but related jobs with two separate and distinct teams for two separate and distinct bosses, all at the same time" (Office of the Secretary of Defense, 2013a, p. 1).

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[2] At the time of this writing, DoD Instruction 3025.xx – "Dual Status Commanders for Defense Support of Civil Authorities" – is in draft status and currently awaiting DoD approval for publication. As a subordinate publication to the more widely circulated DoD Directive 3025.18 – "Defense Support of Civil Authorities," DOD Instruction 3025.xx will address many of the current issues of confusion concerning dual status commander-led DSCA operations.

The DSC receives orders from the state Governor and U.S. President respectively during designated civil support operations. In doing so, the DSC commands federal and state assets in a simultaneous but mutually exclusive manner (Gereski, 2006; Jensen, 2007; Schwabel, 2007; Gereski and Brown, 2010; Prendergast, 2011; Prosch, 2011; McHale, 2012; Blum and McIntyre, 2012). While this was a significant policy change and an improvement compared with previous domestic response operations that divided state and federal military command structures, the DSC construct still experienced notable limitations during the Hurricane Sandy response that must be addressed for future improvement.

As an initiative with a goal of facilitating unity of effort among National Guard and federal forces, the DSC structure has been used during planned military support efforts since 2004 (Gereski, 2006; Topp, 2006; Jensen, 2007; Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011; Government Accountability Office, 2012).. However, until Hurricane Sandy, dual status commanders had not been used during a no-notice/limited-notice incident (Office of the Secretary of Defense, 2013b; 2013c). The government's response to Hurricane Sandy was the first time in U.S. history that this arrangement was employed for a disaster response effort (Ibid). While DoD's assessment of the efficacy of the DSC construct was positive, there are still areas for improvement. Stakeholders representing the National Guard, the Federal Emergency Management Agency (FEMA), state government, and the Defense Department require tools to enhance their knowledge and understanding of this important operational concept. Without the necessary knowledge, our state and federal military forces will continue to experience difficulty in coordination and communication during no-notice/limited-notice DSCA operations. Addressing these

issues through new command architecture, however, is a complicated matter rooted in, among other things, our federalist system of government and the long history of legal authorities governing the use of military forces in a domestic capacity.

2.2   History and Evolution of the Dual Status Commander

United States military forces have played a role in supporting civil authorities in varying locations and capacities from the Whiskey Rebellion to Hurricane Sandy. As discussed previously, major disasters and emergencies often require the combined support of both state National Guard and federal military forces. Since politics, policies, and laws govern military force allocation and decision making, effectively integrating state and federal forces has been a repeated challenge in past civil support scenarios. Conversations aimed at improving such operations, both in the research and in practice, regularly emphasize the legal framework and laws, both historic and current, which continue to influence the roles and responsibilities of both the National Guard and Armed Forces during domestic operations. Reviewing the pertinent national strategies, policies, authorities, and legislation governing military operations in the homeland is necessary to understand the evolution of the DSC initiative and place its significance in the ongoing national policy conversation.

2.2.1   Legal Framework

To start, the U.S. Constitution outlines a federalist construct that emphasizes a system of shared powers between individual states and the national government. These powers, as related to command and control of military forces, are defined in the Constitution and establish the legal authorities and limitations for the employment of the military in domestic operations. Figure 1 depicts the complex relationships of the

many laws influencing domestic military operations.[3] The figure also serves as a reference for the subsequent discussion of the domestic military legal framework. In addition to authorizing Congress to "raise and support Armies" (U.S. Constitution, 1789, Article I, Section 8), the Constitution also states:

> Congress shall have the power…To provide for calling forth the militia to execute 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 (Ibid.).
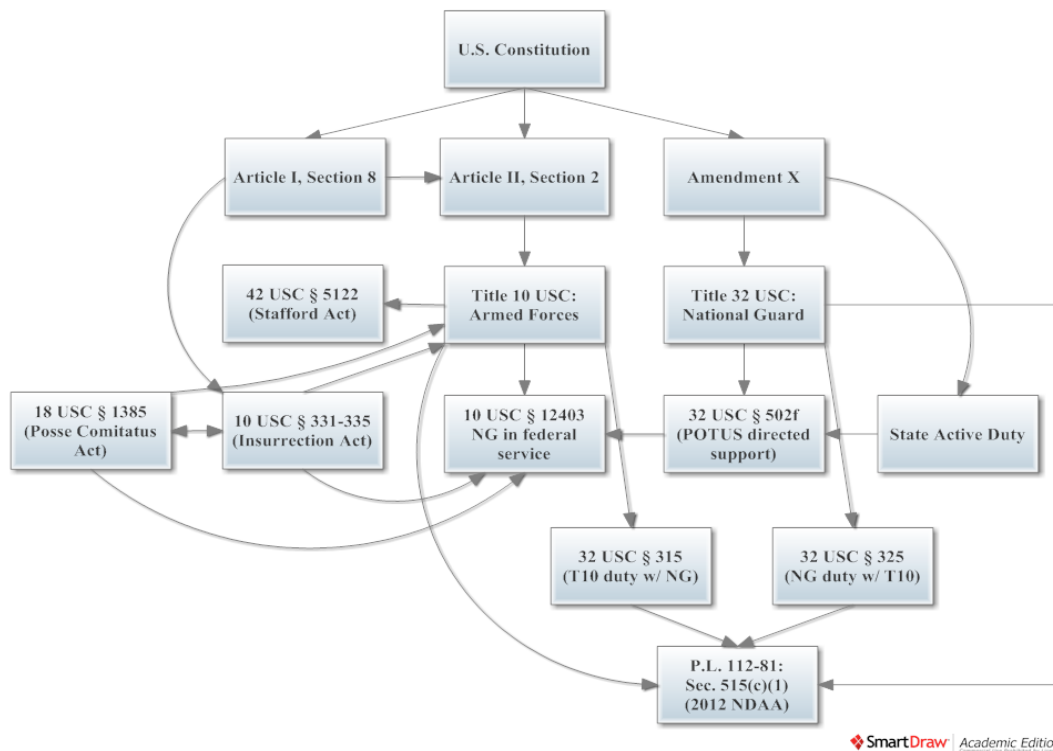
Figure 1: Domestic Military Law and Relationships

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[3] Appendix C contains a table describing each of the laws or authorities referenced in Figure 1.

While these authorizations ensure states' rights to maintain a militia, or what is now the National Guard, the language also ensures individual states' rights are subordinate to the power of Congress under certain conditions. Article II Section 2 of the Constitution upholds this authority by stating:

> 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 (U.S. Constitution, 1789, Article II, Section 2).

The federalist construct and its associated law, as applied to domestic military force operations, is intended to provide the legal mechanism for enabling a unified military response under the order of the President during incidents of national significance requiring a combined response from the National Guard and federal military. However, as we have seen in past operations, most notably Katrina, the federal government's Constitutional authorities conflict with the perceived rights and responsibilities of the individual states and territories. The issue of federal control versus state sovereignty presents a significant point of friction between the states and the federal government that continues to challenge the effective command and control of the military, specifically with regard to the National Guard and the various duty statuses under which it serves during domestic operations. Moreover, the actual extent of emergency powers and the range of discretionary authority state governors can exercise under the 10th Amendment of the Constitution is not a well-settled area of law or public policy that needs further examination.[4]

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[4] The 10th Amendment to the Constitution states: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people" (U.S. Constitution, 1791). This Amendment ensures states maintain the rights and individual authority to govern themselves in

At the center of the issue is the role and operational duty status of the National Guard during domestic emergencies. The National Guard, unlike federal military forces, can serve in three different duty statuses during a domestic operation, each of which is associated with a different mix of command authorities, pay and benefits, and restrictive duty functions. When activated in State Active Duty (SAD) status, the National Guard serves under the command of the state governor through The Adjutant General (TAG), receives state pay and benefits, and is not subjected to the restrictions of Posse Comitatus;[5] that is, they can engage in law enforcement activities when directed. When supporting operations undertaken at the request of the President or Secretary of Defense (SECDEF), the National Guard serves under the authority of 32 United States Code (U.S.C.) § 502f; or in Title 32 status. Unlike State Active Duty, a Title 32 designation must be requested by the Governor and approved by the President. Once approved, Title 32 status entitles National Guard forces to receive federal pay and benefits while remaining under state command and control. This is advantageous for operations spanning multiple states, as it eliminates the disparity in state pay rates and ensures state governors command integrity of their National Guard forces. Title 10 U.S.C. pertains to the laws regulating the Armed Forces. In accordance with the language of the Constitution, Title 10 provides the legal authority for the President to "call into actual service" (U.S. Constitution, Article II, Section 2)

those situations not covered in the Constitution or other federally applicable laws and regulations.

[5] 18 U.S.C. § 1385 (1981): Use of Army and Air Force as Posse Comitatus. Except under extraordinary circumstances (invocation of the Insurrection Act), Posse Comitatus restricts the President from using federal military forces in a law enforcement capacity.

elements of the National Guard for federal duty. This ability to federalize state National Guard forces sets the legal precedent for the President to assume full authority over the militia. While the National Guard can serve under Title 10 status, this authority is almost exclusively used in support of overseas operations. Table 1 summarizes the authorities and responsibility for different aspects of the National Guard under various duty statuses (State Active Duty, Title 32 and Title 10).

In contrast, all active and reserve components of the Army, Navy, Air Force, and Marine Corps – Constitutionally referred as "Armed Forces" – are considered federal military forces and serve under Title 10 authority at all times. Title 10 forces, as they are referred to during civil support scenarios, receive federal pay and benefits and are subjected to the restrictions of Posse Comitatus. Further, the President of the United States serves as the Commander-in-Chief of the Armed Forces at all times, regardless of operational location. These duty status distinctions are financially and legally necessary to distinguish the roles, responsibilities, and authorities between the states, federal government, and their respective military assets during domestic operations. The above discussion also serves as the basis for the development of the dual status commander construct.

Table 1: National Guard Duty Statuses

Duty Status	State Active Duty	Title 32	Title 10
Command Authority	Governor		President
Pay and Benefits	State	Federal	
Posse Comitatus Act	N/A		Yes

2.2.2 Federalism and Sovereignty

The interpretation of authority and legality concerning the command and control of military forces in the homeland continues to create tensions between states and the federal government. The conflict between state power and federal authority introduces confusion during response operations involving both federal military and National Guard force structures. Without clearly established chains of command, lines of authority, and mission tasks, achieving unity of effort has proven difficult in past operations of large magnitude (Topp, 2006; Jensen, 2007; Teague, 2007; Tussing, 2007; Burkett, 2008; Hall, 2009; Prendergast, 2011; Prosch, 2011; Tussing, 2011; Poirier, 2012; Blum and McIntyre, 2012). U.S. Army Field Manual (FM) 3-28 "Civil Support Operations" articulates the command complexities between federal forces and the National Guard conducting simultaneous domestic operations:

> There is not a chain of command in the military sense between the President and the Governors. The President as head of the federal government and military commander in chief may only exercise the authorities granted in the Constitution and U.S. law. Within their respective states, the Governors retain executive authority, to include command over their state's national guard (Air and Army), until such time as the President mobilizes it for federal service. This is unique to this operational environment, and commanders at all levels need to understand the impact it has on the conduct of operations (Department of Defense, 2012c, p. 1-4).

As a result of the several duty statuses the National Guard can occupy during domestic response missions, combined with the possibility of integration with federal military assets, there are currently four command and control models for consideration when coordinating a combined state and federal response effort (Table 2). As the table shows, the four models represent unique command arrangements, each of which offers advantages and disadvantages depending on one's perspective.

Table 2: Domestic Military Command Options

Command Option	National Guard	Federal Military
State*	Governor	
Parallel	Governor	President
Dual Status	Dual Status Commander (32 U.S.C § 315/325)	
Federal	President	

* = Conceptual model – While such a model has been proposed in past legislation, currently, there is no legal basis for the governor of a state to assume direct command authority over federal military forces.

A unified and effective response is a desired end state of civil support operations involving military assistance. However, the constitutional impediments discussed above fuel the noted tension between states and federal government during domestic response missions. The notable conflict between federalism and state sovereignty during past DSCA missions often resulted in parallel but separate chains of command employing redundant force capability in overlapping areas of operation while simultaneously creating gaps in other areas of responsibility thereby reducing response efficiency and effectiveness (Topp, 2006; Teague, 2007; Burkett, 2008; Schumacher, 2011; Prendergast, 2011; Blum and McIntyre, 2012; McHale, 2012). In essence, the same objectives approached from different perspectives resulted in conflicted operational response and the need for significant improvements in the DSCA command process. However, the issue of federalism versus state sovereignty is not the only reason for process gaps and operational issues. There is also a complex history of legislative posturing, policy revisions, and changes to laws that have further influenced the development of the dual status commander concept and its eventual adoption as the preferred command mechanism during joint military response operations.

2.2.3 Origin of the Dual Status Commander Legislation

The brief legislative history of the DSC concept dates back to the 2004 NDAA and the adoption of 32 U.S.C. § 325 allowing a National Guard officer to temporarily hold both a state and federal commission simultaneously; or serve in a "dual status" (32 U.S.C. § 325, Relief from National Guard duty when ordered to active duty, 2004). Since the 2004 enactment, DSC's have commanded operations in support of national security special events (NSSEs) such as the 2004 national political conventions, the G8 Summit in Atlanta, GA, Operation Winter Freeze (border security exercise along the Canadian border), and the 2010 Scout Jamboree in Fort A.P. Hill, VA (Gereski, 2006; Topp, 2006; Jensen, 2007; Teague, 2007; Schumacher, 2011; Blum and McIntyre, 2012; Government Accountability Office, 2012, Office of the Secretary of Defense, 2013b). A complete listing of dual status commander operations is included in Appendix D. Each of these planned events afforded military commanders the luxury of time to coordinate and establish clear lines of authority and communication. As such, the management of these operations was viewed as a success by most (Topp, 2006; Jensen, 2007; Teague, 2007; Burkett, 2008; Hall, 2009; Schumacher, 2011; Prendergast, 2011; Prosch, 2011; Bentley, 2012; Blum and McIntyre, 2012). In contrast, no-notice/limited-notice incidents like hurricanes, earthquakes, and wildfires are less certain and can lead to significant coordination challenges, such as those observed during Hurricane Katrina.

2.2.3.1 Katrina Failures Lead to Legal and Policy Changes

The 2005 military response to Hurricane Katrina was widely criticized. During this incident, the Bush administration proposed using a DSC under a similar authority to 32 U.S.C. § 325. Citing 32 U.S.C. § 315 (2000), this proposal suggested detailing

an active duty Army General, Lieutenant General Russell Honore, as the DSC with authority over all National Guard forces in Louisiana and surrounding states. However, Louisiana's Governor Blanco declined this proposal in favor of maintaining authority over state military assets rather than relinquishing command to the federal government (Lipton, Schmitt, and Shanker, 2005; Bowman et al., 2005; Topp, 2006; Jensen, 2007; Teague, 2007; Burkett, 2008). As a result, the military response during Katrina operated under the traditional parallel command and control relationship (Figure 2) used in past civil support scenarios. This command architecture separates state National Guard and federal forces under distinct chains of command and limits operational and tactical coordination between the two force structures (Teague, 2007; Burkett, 2008). The parallel command structure, in many cases, leads to gaps in operational coverage and force redundancy. According to both military and academic researchers, the state and federal government response to Katrina was plagued by failures largely due to the lack of communication and coordination between the parallel commands (Bowman et al., 2005; Milliman et al, 2006a; 2006b; Tierney et al., 2006; Gereski, 2006; Topp, 2006; Jensen, 2007; Schwabel, 2007; Teague, 2007; Tussing, 2007; Burkett, 2008; Osterholzer, 2008; Dunphy and Radel, 2009; Hall, 2009; Porter, 2010; Apte and Heath, 2011; Prendergast, 2011; Prosch, 2011; Schumacher, 2011; Tussing, 2011; Bentley, 2012; Blum and McIntyre, 2012; McHale, 2012; Government Accountability Office, 2012).
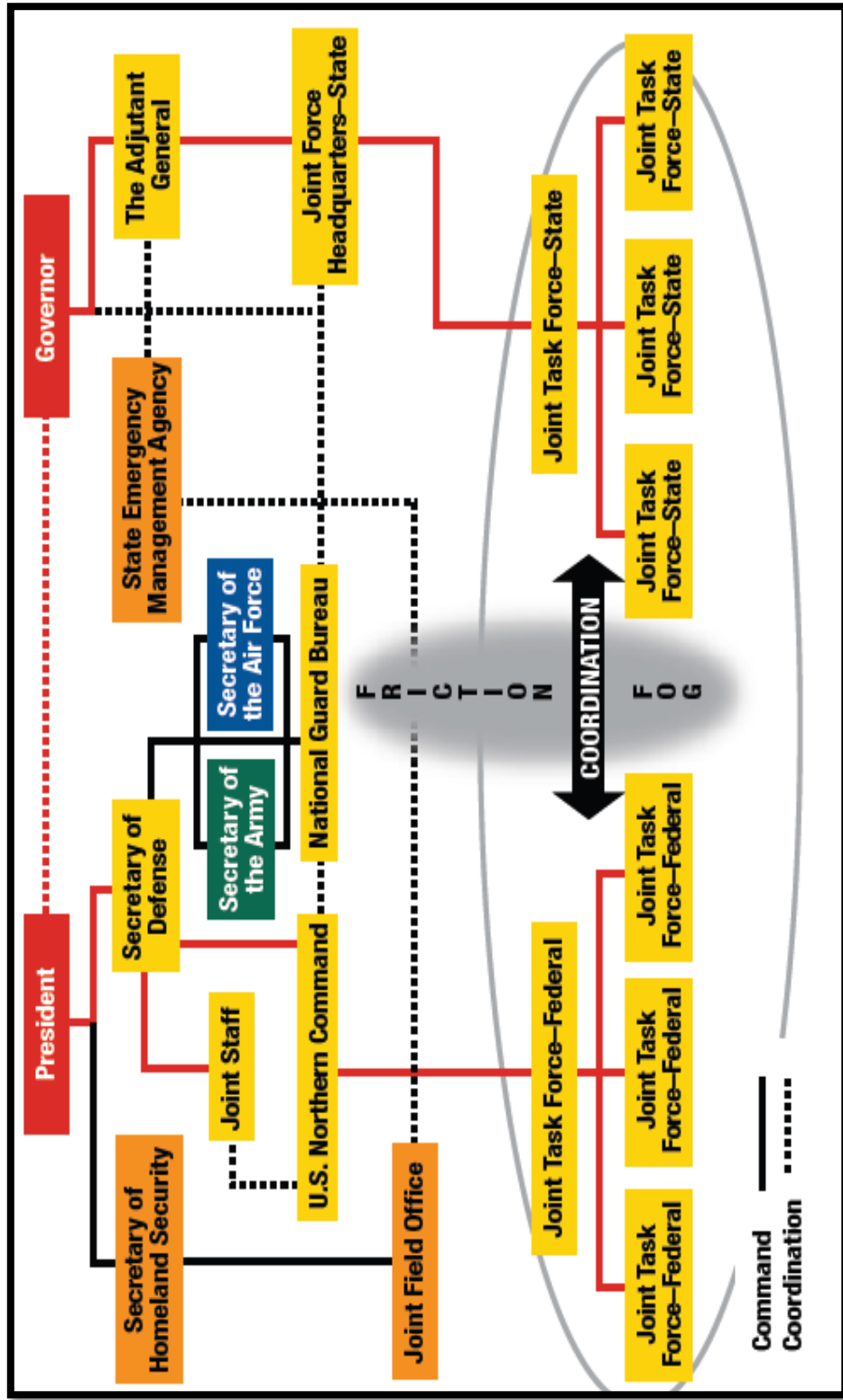
Figure 2: Parallel Command Model
(Burkett, 2008, p. 23)

2.2.3.2   Learning from Katrina

Since Katrina, the conversation regarding the most effective command arrangement for civil support scenarios has evolved. While the legislative authority to use a DSC existed prior to Katrina, tensions between the state and federal government resulted in the employment of the traditional parallel command model previously noted. In the years following the divided military response to Katrina, state governors and DoD officials realized the urgent need for policy changes and the requirement for an improved coordination mechanism between state government, federal government, National Guard forces, and federal military forces. Realizing the legal precedent in place under 32 U.S.C. § 315 and 325 (a)(2), a new series of conversations developed in an effort to simplify the orders process, reduce force redundancy, and close the operational gaps within the DSCA environment; all while simultaneously addressing the noted tension between state sovereignty and federalism, the legality and constitutionality of using military forces for domestic response, and the financial barriers present when combining National Guard and federal military forces. This began a lengthy debate over legislation outlining how military forces would operate in future domestic operations.

Because of the notable successes of DSC during planned events, military strategists continue to praise the DSC construct as an effective arrangement for coordinating the complex interactions and social dynamics between National Guard and federal forces operating in the same area of responsibility (Burkett, 2008; Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011). Further, military commanders and DoD public affairs officials recently lauded the decision to use a DSC during the Hurricane Sandy response efforts:

The Dual Status Command (DSC) concept of having one commander over both Title 10 and Title 32 forces proved beneficial. The DSCs are authorized to command both federal and state National Guard forces. This special authority enables them to effectively integrate the defense support operations and capabilities that governors request. This concept was validated during Hurricane Sandy as DoD took aggressive steps to support FEMA and state authorities in saving lives and protecting property (Office of the Secretary of Defense, 2013c).

The limited body of knowledge concerning the DSC concept remains consistent in addressing both the advantages and disadvantages of using a DSC. Benefits of the DSC construct (Figure 3) include the promotion of unity of effort, improved integration, a common operating picture for all forces, reduced redundancy, minimized operational conflict, closure of gaps in support efforts, increased situational awareness across the area of operations and area-specific knowledge from a local commander (Topp, 2006; Teague, 2007; Burkett, 2008; Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011; Blum and McIntyre, 2012; Government Accountability Office, 2012; Department of Defense, 2012f; Office of the Secretary of Defense, 2013a; 2013c). Disadvantages include conflicting mission assignments from higher authorities (i.e. President and Governor issuing conflicting orders), overwhelming responsibility for one commander to absorb, and potential violations of law due to over-estimation of command authority (i.e. commanding Title 10 forces to support Title 32 status forces in conducting law enforcement operations without prior approval) (Burkett, 2008; Prendergast, 2011; Schumacher, 2011). Most researchers position themselves in favor of the DSC arrangement noting that the benefits outweigh the costs in most operational scenarios. Regardless, the literature shows us that the conceptual nature of a DSC arrangement presents a complex management challenge rooted in disjointed policy guidance, issues of legality and constitutionality, as well as friction over command authority among all participating actors. Despite these

challenges and owning to the failures noted during the Katrina response, DSC is gaining acceptance in both the research and practitioner communities as the preferred command architecture during civil support scenarios involving both state and federal force structures. As such, efforts to improve the DSC process are ongoing.
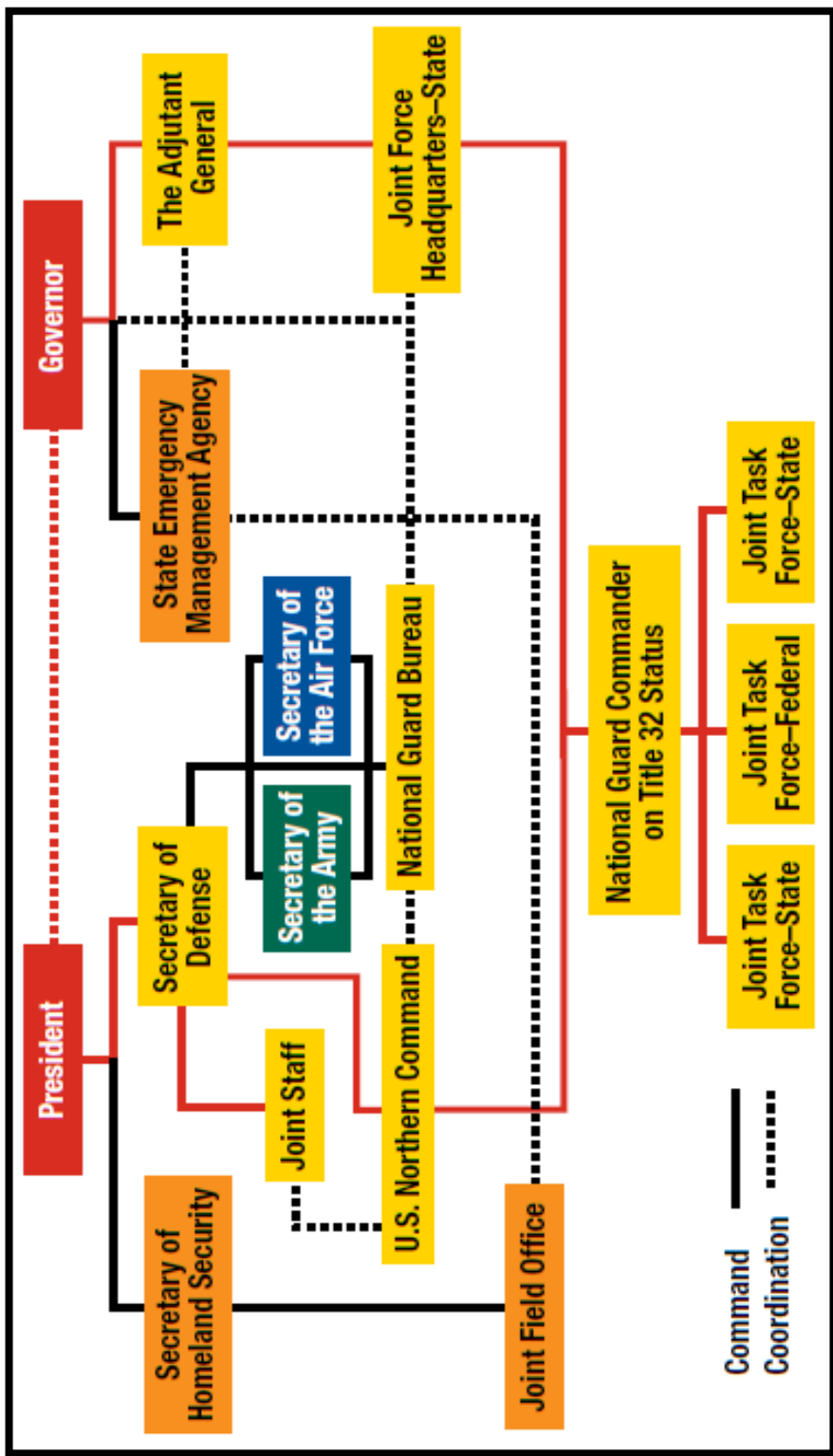
Figure 3: Dual Status Commander Model
(Burkett, 2008, p. 25)

2.2.4 Narrative of Legislative History

As evidenced in Louisiana during Hurricane Katrina, the tension between state sovereignty and federalism is ongoing. Using DSCs for no-notice/limited-notice incidents is a result of a series of concessions between the DoD and state governors in response to criticisms from events such as Katrina (Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011). Between 2006 and 2010, annual NDAAs contained legislation that outlined changes to the authority and control of Title 10 and Title 32 forces operating in support of domestic emergencies. Following repeated failed attempts between state and federal leadership to legislate a mutually agreeable command and control mechanism for disaster response, the DoD and a previously appointed Council of Governors came to an agreement on the use of dual status commanders during such events (Gereski and Brown, 2010; Prendergast, 2011; Schumacher, 2011). In a 2010 agreement, DoD and the Council of Governors settled on an arrangement to appoint a DSC with mutually exclusive control over both state and federal assets during joint response incidents (Department of Defense, 2010a). The goal of this agreement – known as the Joint Action Plan for Developing Unity of Effort (henceforth referred as the Joint Action Plan) – was to establish a common operating picture between state and federal governments regarding the employment of military forces in response to domestic emergencies or disasters. This common operating picture, according to Gereski and Brown (2010), will lead to "greater efficiency, less redundancy, and greater unity of effort" (p. 73). With this goal agreed upon by both the states and DoD, the Joint Action Plan effectively established the guidance authorizing a DSC, in a simultaneous but mutually exclusive manner, to command both state and federal military forces during incident response scenarios. The Joint Action Plan provides a conceptual mechanism in which state sovereignty

and federal interests can be equally balanced (Department of Defense, 2010a). While this was an important achievement in the long debate between the states and DoD, getting to this point required a great deal of negotiation.

After Katrina and prior to the adoption of the Joint Action Plan, it was evident that states and DoD needed to address military command arrangements during civil support missions. The long lists of limitations and failures of the response have been well-documented in numerous reports, papers, and other sources. Looking specifically at the command issue, state and federal government representatives began discussions intended to improve the operational construct of the military during civil support roles. In accordance with the 2006 Quadrennial Defense Review (QDR), DoD proposed legislation to give the Secretary of Defense (SECDEF) the authority to involuntarily order to active duty units and members of the Title 10 reserve components for the purpose of providing assistance during responses to major disasters and emergencies in the United States. The originally proposed legislation was included in the 2007 NDAA and was subsequently passed by the House of Representatives but not the Senate (U.S. Congress, 2007). The Senate also passed a 2007 amendment to the Insurrection Act authorizing the President to expand federal military presence and activities during civil disturbances. Coupling the 2007 Insurrection Act amendment with the proposed legislation to expand the President's power to federalize the National Guard, state Governors and their Adjutant Generals (TAG) "erroneously perceived the two separate and distinct provisions as attempts by DoD to legislate federalization authority of National Guard forces" (email communication with an employee in the Department of Defense, 2013). Tensions between the Governors and DoD regarding command and control of the National Guard continued through

subsequent NDAA provisions (U.S. Congress, 2008; 2009; 2010b). Unwilling to relinquish control of their state Guard forces to federal authority, the Governors continued to oppose any changes in annual NDAA legislation until both the DoD and Governors could agree on a Unity of Effort concept for the employment of military forces during domestic operations (email communication with an employee in the Department of Defense, 2013).

In February 2010, the SECDEF hosted the inaugural meeting of the Council of Governors; a group of state Governors designated by Executive Order 13528 to "strengthen further the partnership between the Federal Government and State Governments to protect our Nation against all types of hazards" (United States, 2010a, p.1). The intent of this meeting was to establish an agreed upon concept of unity of effort between state and federal military forces during no-notice/limited-notice domestic emergencies. According to an employee in the Department of Defense who participated in this meeting (2013), the Governors' desired full tactical control of federal military forces operating in their respective states. The SECDEF and other senior DoD representatives in attendance disagreed with this proposal. In the following months after the meeting, the DoD and Council of Governors worked to develop the Joint Action Plan for Developing Unity of Effort. The final version of this document establishes five key initiatives for improving unity of effort between states and the federal government during civil support missions (Department of Defense, 2010a):

1. Dual Status Commander
2. Shared Situational Awareness
3. Joint Reception, Staging, Onward Movement, and Integration (JRSOI)
4. Mission Assignments/Pre-Scripted Mission Assignments
5. Planning

With the DSC concept listed as the primary initiative to support unity of effort, this document was approved by both the DoD and Council of Governors in February 2011. In April 2011, a Memorandum of Agreement (MOA) between DoD and the Governors was drafted and now serves as a formally recognized agreement for the DSC initiative (Department of Defense, 2011b). With the Joint Action Plan signed and agreed upon in early 2011, DSCs were authorized to command the DSCA response for both Hurricane Irene and Isaac in 2011. However, DSCs were either not activated for these events or did not receive both federal and state military forces for the operations.[6] Nonetheless, these events provided a valuable opportunity for governors and DoD Officials to test the DSC activation process and further endorse its concept. With the notable success of past negotiations and the noted potential of the command concept following Irene and Isaac, legislators included the dual status commander concept in the 2012 NDAA. The 2012 NDAA codified the dual status commander construct into law as the default command arrangement during incident response scenarios, specifying the DSC as the "usual and customary command and control arrangement, including for missions involving a major disaster or emergency" (U.S. Congress, 2012, p. 98). Figure 4 depicts the various laws and their influence on the dual status commander concept.

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[6] Interviews with various DoD personnel both in the Pentagon and U.S. NORTHCOM with relevant knowledge of past dual status commander authorizations and operations, January – March 2014.
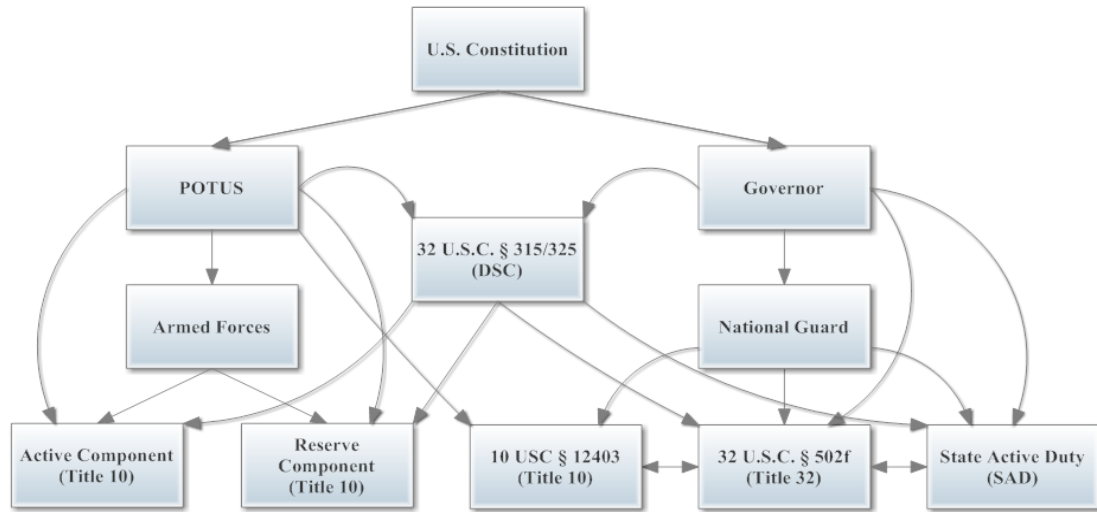
Figure 4: Dual Status Commander Influence Diagram

Less than 10 months after the 2012 NDAA was signed into law, Hurricane Sandy became the first time a dual status commander received state National Guard and federal military forces to execute unplanned civil support operations. However, the response experienced notable challenges due to a lack of formal guidance and instruction on the DSC concept. Since approval of the Joint Action Plan, there has been an ongoing effort to update pertinent national military strategies, civil support guidelines, and other such publications.

2.3   National Strategy and Civil Support Guidance

Within the context of our national military strategies for domestic operations, there are several documents contributing to the strategic direction and guidance of military actions during homeland defense, security, and civil support scenarios. Due to the dynamic political, financial, and operational environment, military guidance publications and references require constant revisions and updates. While the

agreement that the Joint Action Plan represents is a significant advancement toward promoting enhanced coordination and unity of effort between state National Guard and federal military forces, the policy change occurred quickly rendering numerous military reference publications incomplete or inaccurate as they did not contain specific dual status commander guidance and instructions. A brief review of the content and context of these documents reveals a need for significant revisions in future iterations to include dual status commander-specific guidance.

Among the standing guidance influencing domestic military strategy, many documents advocate for a coordinated approach to defense, security, and civil support. Documents like the 2010 National Security Strategy (NSS), Presidential Policy Directive 8 (PPD-8), various Homeland Security Presidential Directives (HSPD), the National Military Strategy of the United States of America (NMS), and both the 2010 and 2014 Quadrennial Defense Reviews (QDR) each call for the need to strengthen and maintain interagency partnerships as well as stakeholder engagement and cooperation (United States, 2010b, Department of Defense, 2010b; Department of Homeland Security (DHS), 2011; Mullen, 2011; Department of Defense, 2014). These documents also affirm that in the context of homeland defense and security, the protection of the American people is paramount. According to the National Security Strategy, "this (presidential) Administration has no greater responsibility than the safety and security of the American people" (United States, 2010b, p. 4). To meet this responsibility, there is a national expectation that federal agencies will establish needed coordination mechanisms and interagency relationships designed to facilitate enhanced security and/or response operations. Creating and maintaining the required relationships requires clear and distinct guidance concerning the various roles and

responsibilities of federal agencies during homeland defense, homeland security, and civil support operations. With regard to the military role, these distinctions are significant and need to be examined.

2.3.1 Homeland Defense, Security, and Civil Support

The DoD Homeland Defense and Civil Support Joint Operating Concept (JOC) was published by NORTHCOM in 2007 and discusses how the DoD fulfills its role in supporting and defending the nation during domestic operations when required (Department of Defense, 2007b). In addition to discussing how DoD plans to detect, deter, prevent, and, if necessary, defeat external threats and aggression, this JOC clearly articulates the important distinctions between homeland defense, homeland security, and civil support. The JOC pulls from other national guidance documents and defines each (Department of Defense, 2007b, p. 5):

> Homeland Defense (HD): The protection of US sovereignty, territory, domestic population, and critical defense infrastructure against external threats and aggression, or other threats as directed by the President. The Department of Defense is responsible for (HD).

> Homeland Security (HS): A concerted national effort to prevent terrorist attacks within the U.S., reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur.

> Civil Support (CS): DoD support to U.S. civil authorities for domestic emergencies and for designated law enforcement and other activities.

These are important distinctions for determining the roles and responsibilities of our various military capabilities during domestic missions meeting the above criteria. The JOC further clarifies that while DoD is the lead federal agency (LFA) for HD operations, it operates strictly in a support role for both HS and CS (Figure 5). In

contrast, non-federalized National Guard forces (Title 32 or SAD) can provide an often needed military capability to state and federal authorities during HS and CS missions. The National Guard is trained and equipped by DoD and unless federalized under Title 10 authority is "responsive to state sovereign authorities and free of many of the limitations that constrain federal forces" (Department of Defense, 2007b, p. 57). In the context of our national military capabilities, therefore, the National Guard is a key security and response resource for the states and federal government alike. While the dual status commander policy change is intended to enhance these combined state and federal response operations, it is not addressed in many other relevant national-level documents.

Homeland
Security

Homeland
Defense

Civil
Support
(DSCA)

DoD Leads   (Adapted from DoD HD and CS Joint Operating Concept, 2007, p. 5)   DoD Supports
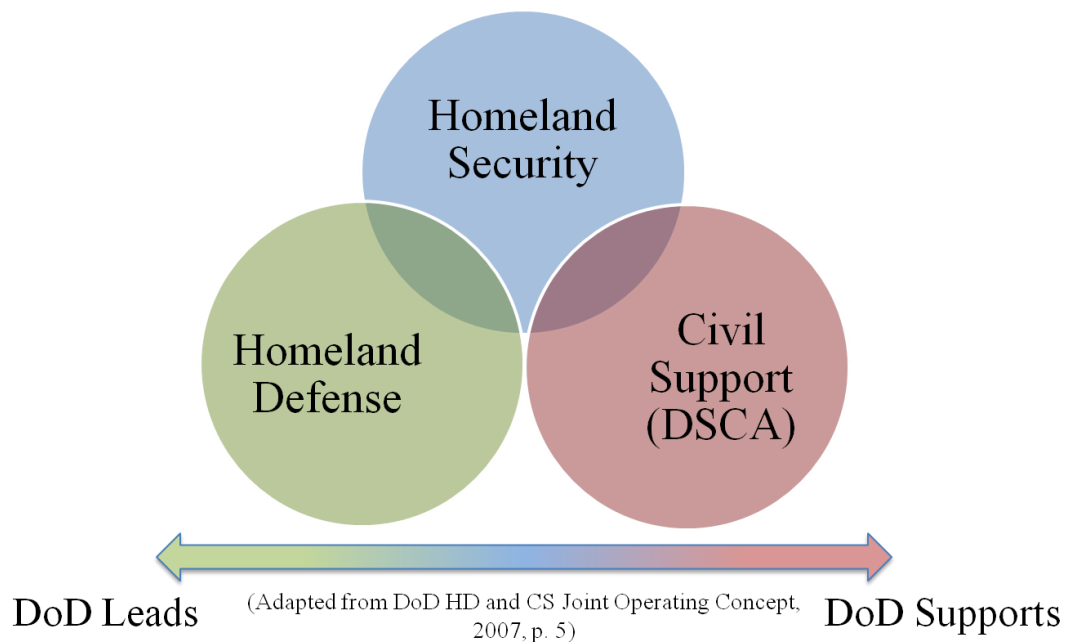
Figure 5: DoD HD-HS-CS Paradigm (adapted)

2.3.2 Other Relevant Resources

Policies such as the National Preparedness Goal (NPG) and the National Response Framework (NRF) establish broad requirements for the reduction of threats, increased resilience, and coordinated government and whole community response to emergencies. These policies and other national-level guidance documents label federal and National Guard forces as contributing resources to the national emergency management context. However, specific discussions and information outlining the military's role in domestic civil support is left to other references (Department of Homeland Security, 2008; 2011). More specific to the military, the United States maintains several documents outlining military priorities during homeland defense, security, and other civil support scenarios. The National Security Strategy (NSS) notes that DoD is tasked with "preparing for increasingly sophisticated adversaries, deterring and defeating aggression in anti-access environments, and defending the United States and supporting civil authorities at home" (United States, 2010b, p. 14). Similarly, the National Military Strategy of the United States of America (NMS) promises to continue to dedicate resources to train and equip the National Guard for homeland defense and DSCA operations (Mullen, 2011). Likewise, the 2010 and 2014 Quadrennial Defense Reviews (QDR) designated civil support missions as a key DoD mission area moving forward, specifically noting the need to "improve the responsiveness and flexibility of consequence management response forces" (Department of Defense, 2010b, p. vii) during domestic support operations. The 2014 QDR takes this a step further and labels homeland defense – where DoD is the LFA – as one of the three core pillars of our future national defense strategy (Department of Defense, 2014). Adding to the growing emphasis of domestic military operations, the 2013 Unified Command Plan and Combatant Commands report by the Congressional

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Research Service (CRS) identifies and addresses the evolving mission priorities for DoD forces operating in the homeland. With a specific focus on U.S. Northern Command (NORTHCOM) and its subcomponents, the CRS report addresses a range of DSCA mission areas and provides background knowledge on the functional responsibilities of the geographically distributed combatant commanders (Feickert, 2013).

The collective focus of these documents on the evolving civil support, homeland defense, and security role of the U.S. military illustrates the priority placed on these critical mission areas on the national strategic level. With the current war in Afghanistan coming to a close, there will be a strategic re-balancing of military priorities in the future. The likely shift of priorities back to homeland defense and civil support means increased attention will be placed on the current command challenges limiting our capacity to execute more effective domestic response missions. As the conversation moves toward generating solutions for future domestic command operations, it will likely require revisiting other pertinent policies that are shaping the status of DSCA operations today.

In a 2012 memo, the SECDEF ordered a comprehensive review and revision of critical domestic military policies pertaining to responding to complex catastrophes. The memo – titled "Actions to Improve Defense Support in Complex Catastrophes" – requires updates to all pertinent DoD guidance regarding complex catastrophes and other potentially significant events in the homeland. This SECDEF memo directs DoD and other supporting agencies to improve guidance and documentation regarding unity of effort concepts including dual status commander-led operations (Office of the Secretary of Defense, 2012). In addition to the SECDEF memo and with respect to

promoting unity of effort between federal and state response agencies, the 2013

Strategy for Homeland Defense and Defense Support of Civil Authorities clearly

indicates that DoD is committed to improving dual status commander operations

noting that "DoD will continue to refine processes for dual-status commanders and

their associated command structures" (Department of Defense, 2013c, p. 21).

The ongoing refinements to DSC policy and guidance are evident in many of

the core guidelines, policies, and authorities governing DSCA operations with the

potential for the activation of a DSC. In addition, it is also apparent that much of our

current military references need to be updated to include necessary DSC discussions

for both planned and unplanned events. The continued revisions and overall lack of

specific guidance points to a critical need to assess and develop more detailed and

robust guidance concerning the processes and procedures for dual status commander-

led operations.[7]

2.4   Updates Needed

National military strategy and procedural references must be updated to

include DSC-specific guidance. More specifically, guidance regarding the

implementation and processes for employing a dual status commander need to be

drafted and included in future resources. This is not a new requirement or observation.

A report by the Government Accountability Office (GAO) on October 26, 2012 – ten

months after the approval of the 2012 NDAA and four days prior to Hurricane

Sandy's landfall – addressed the gaps in homeland defense and civil support guidance

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[7] Appendix E contains a brief description of the pertinent military policy and
procedural publications related to dual status commanders.

with specific emphasis on the need to address DSC policies and procedures for domestic operations. These findings summarize the theme of the argument above and provide additional motivation and justification for this research effort:

> …gaps in guidance remain because DOD has not yet developed comprehensive policies and procedures regarding the use and availability of dual-status commanders, including specific criteria and conditions for when and how a state governor and the Secretary of Defense would mutually appoint a commander…As a result, DOD's ability to adequately prepare for and effectively use dual-status commanders for a range of civil support events, including those affecting multiple states, may be hindered (Government Accountability Office, 2012, p. 1).

2.5   Dual Status Commanders during Hurricane Sandy

As if foreshadowing future events, GAO's 2012 comments issued days prior to Sandy offered an accurate prediction of the resulting military response under the dual status commander. While there were several notable successes, the military response to Sandy experienced challenges as well. After the storm, a GAO report noted that "the roles and responsibilities of the dual status commander, joint coordinating element, and defense coordinating officer were unclear" (Government Accountability Office, 2013, p. 20). According to the report, this issue and others created confusion among the responding military forces that hindered the military's ability to establish unity of effort; the principal intent of the dual status commander arrangement during civil support missions. Beyond the GAO report and since October 2012, the majority of the information available regarding the military response to Hurricane Sandy is from news reporting. To this end, there is a wealth of knowledge to be gained from the media accounts of this storm.

Much of the media coverage to date recounts the day-to-day activities of the response efforts and addresses the military's efforts to employ DSC's in both New York and New Jersey (Miles, 2013a; 2013b; 2013c). Such sources provided valuable information to help reconstruct the storm's response and the associated military activities as discussed later in Chapter 4. In addition, chronological and descriptive media coverage supplemented many of the other sources of data gathered during the conduct of this research. In addition to the scores of news reporting, some of the military components responding to Hurricane Sandy released various forms of after action reports (AAR) that provide valuable insight into the lessons learned from the Sandy response under the DSC arrangement including successes, failures, and areas for improvement. These AAR's were especially valuable sources for completing the dissertation research.

2.5.1 Military After Action Report Findings

The U.S. military has a robust and effective Lessons Learned program within each of the four service components. After significant operations such as Hurricane Sandy, military units regularly draft detailed AARs addressing some of the significant issues, challenges, successes, and failures of their respective participation in the designated operation. These sources are vetted among varying levels of military command personnel and then gathered for publication and distribution by centers such as the Center for Army Lessons Learned (CALL) or the Marine Corps Center for Lessons Learned (MCCLL). In the case of Hurricane Sandy, there are several relevant and useful military AARs that helped to reconstruct this historic event and further develop this research.

No matter the source, there is an apparent consensus across the DoD that command, control, coordination, and management of forces presented as one of the most challenging aspects of the Sandy DSCA operation (United States Fleet Forces Command (USFF), 2013; Marine Corps Center for Lessons Learned, 2013a; 2013b; Office of the Secretary of Defense, 2013c; Naval Warfare Development Command (NWDC), 2013; Muser, 2013). Despite the positive image portrayed in most media accounts of the military's role during the storm response, actual military and government AARs provide more objective, self-critical assessments of performance. These documents highlight the coordination issues between National Guard and federal military forces while addressing the apparent lack of familiarity regarding DSC arrangements (United States Fleet Forces Command, 2013; Marine Corps Center for Lessons Learned, 2013a; 2013b; Office of the Secretary of Defense, 2013c; Naval Warfare Development Command, 2013; Muser, 2013). The reports simply confirm what the GAO had previously reported: there is a lack of sufficient DSC policies and procedures that leads to questions and confusion during certain operational situations employing the DSC architecture. Now in the aftermath of Sandy, it is even more critical to take action and improve these known deficiencies before the next event requiring military support. The lessons learned from the military's response to Hurricane Sandy under the DSC arrangement continue to offer knowledge and opportunities for developing improved tactics, techniques, procedures, and processes.

2.6 Dual Status Commanders and the Need for Process Improvement

Hurricane Sandy presented a timely and relevant opportunity and to learn and ultimately improve future DSC processes. Every year, students at the Naval Post-Graduate School, Naval War College, Army War College, Air War College, Marine

Corps University, National Defense University, and other service-oriented Command and Staff Colleges conduct research on issues of importance to national security and the military. Senior military officers and government planners author many of the products developed within these institutions. As such, there is a wealth of research within DoD circles detailing issues related to DSCA. While many studies address the roles and responsibilities of federal military forces compared with National Guard forces during civil support functions, there is a dearth of attention given specifically to the DSC concept. From a scholarly research perspective beyond the DoD institutions, there is even less knowledge on DSC as a primary investigative phenomenon.

Hurricane Sandy gave us an opportunity to test the DSC arrangement during a no-notice/limited-notice incident in support of civil authorities. While some successes were evident, there is room for improvement in the way the military executes DSCA operations under DSC authority. The available literature helps us to understand the history and development of the DSC construct. It also shows us that there is a need for improved knowledge and understanding of the complexities of this command arrangement. Military policies, procedural manuals and other such publications provide our largest source of information regarding the DSC concept. Even still, there is a limit to the extent of coverage as this is still a relatively new initiative. This is a critical vulnerability – noted by both DoD and GAO – that needed to be addressed through detailed research and analysis of the DSC arrangement. Despite this, some of the most senior military commanders responsible for leading homeland defense and DSCA operations maintain that the concept works and should be improved for future operational situations. The two ranking generals during the Sandy response, Generals

Jacoby and Grass, US NORTHCOM Commander and Chief of the National Guard

Bureau (NGB) respectively, affirmed this in an article following the Sandy response:

> While this inaugural use of Dual-Status Commanders wasn't flawless,
> in the end we can say with conviction that the concept works. It is
> simply the best command and control construct that exists for
> responding effectively and efficiently to complex disasters, because it
> can bring the full weight of the DoD response to the worst man-made
> or natural disasters while maintaining the authority of state and local
> governments (Jacoby and Grass, 2013, p. 2).

As the Chief of the NGB during the federal response to Hurricane Katrina,

Lieutenant General Blum (USA, Ret.) along with Lieutenant Colonel Kerry McIntyre

(USA, Ret.) of the Maryland Army National Guard note the benefits of the DSC

arrangement compared with the traditional parallel model of commander and control

in which the National Guard and federal troops operate simultaneously but under

separate command structures. In their 2012 Strategic Studies Institute (SSI) study

based largely on personal experience during Katrina, the authors contend that the

operational processes governing the military response under DSCs need to be

improved:

> Dual status command works. It should be the rule, not the exception;
> and better methods must be developed for placing useful military capa-
> bilities under dual status command, when requested and if available, for
> homeland response (Blum and McIntyre, 2012, p. 31).

Based on the 2012 NDAA legislation and the endorsement of many senior

military commanders and DoD officials, the DSC construct will remain a central focus

of current and future efforts to improve domestic response capabilities of the U.S.

military. There is a need, then, to mature this command construct in order to attain and

maintain the level of proficiency and effectiveness expected in future response

missions. However, improving such a complex mission capability under a seldom-used command arrangement is quite literally easier said than done.

As I attempt to demonstrate in this dissertation, maturing this concept can be achieved through the application of process improvement strategies and the development of the aforementioned DSC capability maturity model. Using process improvement, we can build such a tool that provides commanders with the information necessary to ensure deference to the necessary laws and policies governing military civil support missions without sacrificing speed, efficiency, effectiveness, or urgency. As such, grounding this approach in the relevant performance management and process improvement literature is an important piece of the analysis and literature review.

2.7   Measuring and Managing Performance

The maturity model concept referenced is rooted in management science and performance research. The maturity model uses similar architecture to a range of performance management tools found throughout management and performance literature. Much of this literature emphasizes that successful organizations conduct strategic planning and performance measurement through the identification and implementation of goals and objectives (Poister, 2003; Pollitt and Bouckaert, 2004; Van Dooren, Bouckaert, & Halligan, 2010; Bryson, 2011). Some of the literature also suggests that many government organizations employ a "management by objectives" (MBO) philosophy; or a "what gets measured, gets managed" approach (Poister, 2003; Van Dooren et al., 2010). With the emphasis on performance management – particularly in government organizations – the maturity model concept is seemingly well-suited to military operations.

According to Dr. Elaine Kamarck, Brookings Fellow and Professor of Policy at Harvard's Kennedy School of Government, federal agencies typically assess performance in relation to adherence to rules and procedures. Based on her ongoing research, Dr. Kamarck contends that governments are trending towards implementing performance metrics to measure and evaluate organizational processes. According to Dr. Kamarck, "In the near future, government performance will revolve around metrics and a performance-based accountability system" (Kamarck, 2013). Building on the requirements of the Government Performance and Results Act (GPRA) (U.S. Congress, 1993) and the 2010 Modernization Act revision (U.S. Congress, 2010a), performance management in government has evolved. There is an extensive body of research in public policy and management science citing well-established methods for measuring and managing performance. With regard to their business operations, DoD uses many of the approaches in the performance literature to guide and assess their processes as well.

2.7.1 Performance Management and Measurement in DoD

As the largest federal government agency in terms of personnel and budget (Defense.gov, 2013), DoD maintains a detailed and comprehensive performance measurement system that receives annual updates based on the evolving political, financial, and operational landscape. In order to comply with GPRA and the Modernization Act revision, every four years the DoD publishes an updated Quadrennial Defense Review (QDR). The QDR satisfies DoD's legislatively mandated GPRA requirement to establish a Strategic Plan. Strategic planning, according to Bryson (2011) is a "deliberative, disciplined approach to producing fundamental decisions and actions that shape and guide what an organization is, what

is does, and why" (p. 7-8). The strategic plan should incorporate a vision and mission statement and can viewed as a tool that helps leaders determine the appropriate course of action(s) for their organization (Bryson, 2011). In order for an organization to perform its mission and vision, it must establish performance measures that include a series of goals and objectives relevant to its strategic plan. To achieve an organizational goal, the objectives of each goal must be accomplished. Poister (2003) suggests that for an objective to be valid, it must incorporate specific, measurable, attainable, relevant, and time-bound components (SMART). The 2010 QDR establishes five strategic goals and twenty strategic objectives, each of which are mapped to one of the five goals. Each year, DoD updates and releases its fiscal year (FY) budget plan overview which establishes the specific performance measures for each of the strategic goals and objectives contained within the QDR. These goals and objectives are reiterated in the DoD Strategic Management Plan (Department of Defense, 2011d). This information is then adapted and translated into performance measures for military forces to use during training and readiness evaluations.

As the Combatant Command (COCOM) responsible for supporting domestic military civil support operations, U.S. NORTHCOM maintains a robust performance measurement capability. With the development of tools such as the Homeland Security Exercise and Evaluation Program (HSEEP) (Department of Homeland Security, 2007), NORTHCOM's performance measurement process has adapted to fit the evolving national security and civil support trends and requirements. Building on this, NORTHCOM's performance requirements are directly measured based on unit performance during training and simulations designed to replicate real-world scenarios the military may face in the future. The government document for this training and

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NORTHCOM's default performance measurement rubric is the Joint Training System (JTS) (Chairman of the Joint Chiefs of Staff (CJCS), 2012b). The JTS is a guidance document that establishes a list of performance measures used to assess military unit readiness compared to listed standards and requirements. The JTS:

> assists commanders at all echelons in defining the required level of individual, staff, and collective performance; determining the current level(s) of performance; executing training programs to improve performance; and, finally, assessing those levels of performance relative to mission capability requirements (Chairman of the Joint Chiefs of Staff, 2012b, p. A-2).

By aligning missions to strategies, the JTS defines requirements for ensuring the training and readiness of military units. Military units use the performance measures set forth in the JTS and other such publications to assess their overall readiness to complete a given mission. A unit that has achieved a specified capability level according to the parameters set forth in the JTS is expected to be able to perform on a level commensurate with this rating during an actual operation. Through a series of logic-model-based designs, the JTS and its corresponding publication, the Joint Training Manual (JTM) (Chairman of the Joint Chiefs of Staff, 2011), present a comprehensive list of operational requirements by phase. Each phase of a military operation is separated into a process flow chart (Figure 6) that defines the needed inputs, processes, and outputs of the phase of the operation. The desired outcome of JTS and JTM guidance is a to establish a list of baseline performance measures used to provide the president with a trained and capable military force ready to execute a wide range of missions in support of U.S. interests (Chairman of the Joint Chiefs of Staff, 2011; 2012b).

Inputs

- Current National Military Strategy (NMS)
- Defense Planning and Programming Guidance (DPPG)
- Guidance for Employment of the Force (GEF)
- Joint Strategic Capabilities Plan (JSCP)
- Presidential and SecDef Directives
- Treaty Obligations
- Unified Command Plan (UCP)
- Security Cooperation Plans
- DoD Directives
- Command Plans (Theater Campaign Plans/OPLANs/ CONPLANs)
- Joint Training Strategy
- Higher HQs JMETL *
- Joint Doctrine
- Commander Guidance *
- UJTL/Service Task Lists *

* Supported by JTIMS

Processes

- Conduct Mission Analysis to ID Tasks
- Select Tasks from UJTL *
- Select/Apply Essentiality Criteria
- Select JMETs
- Select Responsible Organizations
- Determine and select relevant Conditions and Standards
- Staff Tasks and Command-linked Tasks
- Commander Approves JMETL

Outputs

JMETL*

Tasks, Conditions, Standards, Organizations (T/C/S/Org)

Figure 6: Sample JTS Logic Model
(Chairman of the Joint Chiefs of Staff, 2011, p. C-3)

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Much of the military planning process, from both a macro and micro perspective, uses the basic "if-then" approach inherent in the logic model concept. Many DoD plans, including the Strategic Goals, Objectives, and Performance Measures discussed here contain core logic model elements including inputs or resources, activities/processes, and even some examples of outputs. Operations are procedural in nature and often involve extensive planning. Van Dooren et al. (2010) define procedural organizations as those organizations that "have outputs that are observable and outcomes that are less well-defined" (p. 28). In this context and according to Van Dooren et al., the military is an example of an organization whose peacetime outputs are observable (i.e. meals delivered during humanitarian assistance/disaster response (HA/DR) operations). These outputs are achieved through the execution of processes; some defined, others improvised.

Given the procedural focus of military operations coupled with the uncertainty associated with commanding civil support missions, there is a need for an improved tool map military civil support operations; a tool that excludes specific numerical requirements that are in many cases not applicable and instead emphasizes the institutionalization of core processes to ensure improved operational performance. Within the core performance management literature, there is one common aspect of the tools, strategies, and approaches to management: they are process-oriented. Poister (2003) reaffirms this process-oriented focus by suggesting "performance measurement is often a *process* of sequential specification from very general goals to specific indicators" (p. 60). Therefore, rather than approaching performance management from a macro-level perspective, a micro-level, process-specific approach may be more appropriate.

2.8   Why Process Improvement?

Process improvement is "a program of activities designed to improve the performance and maturity of an organization's processes and the results of such a program" (Chrissis et al,, 2007, p. 628). Process improvement advocates argue that the quality of a product or service is proportional to the quality of the process (Ibid.). In the most basic sense, process improvement offers users a structured approach to move from ad hoc and immature processes to disciplined, mature processes and enhanced performance. In order to mature processes and improve product or service delivery, process improvement strategies emphasize identification and performance of consistent practices deemed essential to providing quality products or services. Business organizations that employ process improvement techniques do so in order to limit time spent performing unnecessary or wasteful practices while ensuring essential tasks or practices are not only performed, but consistently and predictably repeated.

Through the diagnosis and assessment of critical practices, process improvement is a modification for most business organizations. By identifying wasteful practices for removal and essential tasks for consistency and repeatability, businesses are better able to improve the quality of their services and product delivery. Leading companies including Lockheed Martin, Raytheon, Boeing, IBM, Booz Allen Hamilton, and Federal Express (FedEx) representing a range of industries employ process improvement methods as a way to improve product and service delivery (Chrissis, et al., 2007; Ahern, Clouse, and Turner, 2008; Garcia and Turner, 2007). As such, there are several examples of the benefits of process improvement to support this argument. The next section offers a brief example of how FedEx used process improvement techniques to solve a service delivery issue and improve overall operational performance. This example is relevant to the current argument because it

illustrates how an operationally-oriented service provider was able to apply similar concepts and techniques as presented in this analysis to improve a critical operational function and mature its delivery capabilities. While the circumstances and specifics are different, this example offers support to the argument and its potential application to military operations.

2.8.1   FedEx and Process Improvement

According to a senior executive at Federal Express (FedEx), one of the company's top business priorities is to "always seek to improve our processes" (interview with FedEx executive, June 2014). As a leader in global package delivery services, the complexities of FedEx's day-to-day operations rival any in the service delivery industry. As a result, the company regularly looks for ways to maintain or improve its market share by improving processes and overall performance. FedEx employs a cadre of professional analysts whose primary role is to diagnose processes by identifying areas of weakness or inefficiency, as well as best practices. These analysts then apply a range of process improvement strategies to re-engineer critical processes aimed at improving efficiency and effectiveness of their parcel services.

In 2007, for example, FedEx analysts noted a sharp rise in service demand along with a growing trend among customers for greater access to package tracking and location services. After providing improved tracking capabilities to its customers, FedEx noted an increase in customer complaints regarding delivery delays, as their customers were able to see real-time status updates including arrival and departure times in various sorting facilities located along a shipment route. What was originally intended to be an enhancement in customer satisfaction resulted in a growing dissatisfaction over perceived delays and inefficiencies in package delivery times. In

order to meet evolving customer demands for speed and efficiency, while also noting

an insufficient data tracking capability, FedEx used process improvement methods to

diagnose and enhance their critical sorting processes. In doing so, FedEx identified

inefficiencies in its parcel tracking system related to increased volume and the

system's inability to effectively service growing requirements. As a solution, the

company deployed a new internal operating system to enhance parcel tracking and

data processing at its many sorting facilities. This improved operating system

enhanced FedEx's receiving and sorting processes for standard ground packages (non-

priority). As a result of this process improvement approach to meet a growing

customer demand, FedEx Ground lowered its average parcel delivery time in over

50% of its network by nearly 24 hours over a three year period (Ibid.).[8] Although a

different context, this example illustrates how process improvement techniques can be

applied to operationally-focused organizations such as civilian emergency

management agencies or the DoD.

2.8.2   Process Improvement in Emergency Preparedness

Few examples of process improvement applications to emergency management

are available for review. Of those reviewed for this dissertation, even fewer drew a

direct connection between emergency management operations and process

improvement applications. Further, some studies described certain process

improvement approaches like maturity models as too robust and complicated to

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[8] See "FedEx Ground meets rising customer expectations by shortening its package processing cycle," at: ftp://public.dhe.ibm.com/software/solutions/pdfs/ODC00297-USEN-00.pdf, pp. 1-4, 2007, for more.

improve the uncertainties and complexities inherent in disaster response (Charles, Lauras, and Wassenhove, 2010). While Charles et al. (2010) suggest maturity models are inappropriate for the comprehensive challenges of humanitarian relief operations, the authors do note the potential benefits of applying process improvement concepts to specific elements of these operations, such as supply chain operations. Similarly, Weyns, Host, and Helgesson (2010) assert the benefit of using process improvement to improve the understanding and integration of information technology considerations and functions into emergency management operations. Earlier works from Gunderson (2005) and Gallagher (2002) also support the idea of using process improvement concepts – specifically maturity models – for improving operationally focused approaches to systems risk analysis and firefighting operations, respectively. So while the research literature supporting process improvement in operational contexts is admittedly thin, such concepts are noted and supported as usable approaches by national-level emergency management standards like the Standard on Disaster/Emergency Management and Business Continuity Programs.

The National Fire Protection Agency (NFPA) develops codes and standards designed to help people and organizations prevent, manage, and protect against disasters. The published codes and standards produced by the NFPA offer ways for users to minimize the effects of disaster-related occurrences (National Fire Protection Association, 2013). As an adopted standard of national preparedness by the 9/11 Commission, NFPA 1600: Standard on Disaster/Emergency Management and Business Continuity Programs addresses the "development, implementation, assessment, and maintenance of programs for prevention, mitigation, preparedness, response, continuity, and recovery" (National Fire Protection Association, 2013). As a

whole, NFPA 1600 offers a comprehensive overview of emergency management from the perspective of business continuity. With an emphasis on training for and managing the events of a disaster, the document provides users with knowledge to consider regarding the implantation of best practices and useful methods of management to ensure operational continuity during a disaster. Developed by a cadre of experienced emergency managers and researchers, this document integrates dozens of valuable perspectives for assessing and managing disasters. So, when a 2013 update to this document incorporated a discussion on the use of process improvement techniques – emphasizing self-assessment rubrics and maturity models – as ways to improve emergency management functions (National Fire Protection Association, 2013, p. 25-38; p. 52), it supports the position that process improvement can and should be used as a way to mature disaster response operations.

2.8.3   Process Improvement in DoD

FedEx is just one example of a company that uses process improvement as a way to improve their business practices, operations, and profitability. While the private sector uses process improvement as a means to generate profit, process improvement can – and does – provide a benefit to government services as well. Given its size and breadth of operations, the Department of Defense regularly requires improvement to its various processes and programs. As such, process improvement is not foreign to the Department of Defense. Military personnel in certain occupational specialties are familiar with process improvement methods and techniques including Lean Six Sigma (LSS) and Capability Maturity Models-Integrated (CMMI), among others. Recognizing the importance and utility of these methods, DoD, in 2007, established the Office of Continuous Process Improvement (CPI) and Lean Six Sigma

(LSS) within the Office of Business Transformation and housed under Acquisition, Technology, and Logistics (AT&L). CPI/LSS' primary mission is to ensure the integration of process improvement methods into current business operations within DoD (Department of Defense, 2007a; 2009). By integrating process improvement methods into defense business operations, DoD has a vehicle for business process optimization through the identification and reduction of wasteful practices. Process improvement methods such as LSS and CMMI provide DoD with the necessary techniques to diagnose and improve critical business processes and meet mission requirements. As such, these techniques are used throughout DoD in a variety of capacities, albeit mostly administrative in nature.

Other process improvement-based assessment practices like the Manager's Internal Control Program (MICP), the Commander's Evaluation Program, and similar continuous improvement approaches are regularly applied to improve the efficiency and effectiveness of business practices within DoD. Given the ongoing application of process improvement techniques to enhance administrative elements of DoD, as well as the proven application to private sector operations like FedEx, these same principles can be used to mature military operations. With a degree of creativity and flexibility, DoD can apply these proven techniques to their operational environment as a way to measure current performance and improve future performance. In order to identify the best process improvement technique for application to the complexities of military civil support operations, it is necessary to understand the key elements of process improvement and its many alternative approaches.

2.9   Key Elements of Process Improvement

With several process improvement alternatives – each with a specific concentration – it is helpful to discuss some of the most common approaches and the potential application to military operations. Early process improvement literature dates back to the 1930's and the work of Walter Shewhart (Chrissis et al., 2007). Shewhart, whose work emphasized quality control principles, is credited with creating the "Plan Do Check Act" (PDCA) concept – or the Shewhart Cycle – which is now used throughout managerial mediums as a simple means to improving procedures (Curtis, Hefley, & Miller, 2002; Chrissis et al., 2007). Shewhart's early work was expanded by modern process improvement scholars and has since evolved into a research area casting a wide scope across the management and engineering fields alike. Scholars including Deming (1986), Crosby (1979), Juran (1988), and Humphrey (1989) are among those credited with building the process improvement research literature and ultimately providing the foundation for the first maturity model concept.

Unlike performance management approaches that are focused on achieving pre-determined measurable results or outcomes (Aristigueta, 2008), process improvement in contrast emphasizes adherence to established steps or procedures to improve the quality of a product or service (Curtis et al., 2002; Chrissis et al., 2003; 2007; Garcia and Turner, 2007; Ahern et al., 2008). In other words, "the quality of a system or product is highly influenced by the quality of the process used to develop and maintain it" (Chrissis et al., 2007, p. 5). There are several methods for process improvement that have been applied to organizations seeking to improve the delivery of their products and/or services. Some of the more commonly used approaches to process improvement include Total Quality Management (TQM), Lean, Six Sigma, IDEAL, and the Maturity Model as summarized in Table 3. In order to provide

broader context to the following maturity model discussion, each of these approaches is briefly discussed below.

Table 3: Process Improvement Alternatives

Process Improvement Alternatives					
Method	Total Quality Management	Lean	Six Sigma	IDEAL	Maturity Models
Focus Area	-Management practices	-Production optimization (manufacturing)	-Process variability (minimize)	-Process definitions and activities	-Process mapping (best practices)
Purpose	-Continuous improvement of products / services	-Eliminate "waste" and enhance productivity	-Remove defects -Increase repeatability / parity	-Program improvement	-Identify process goals / objectives
Feature(s)	-Defined requirements and responsibility	-Value driven practices	-Quantifiable performance targets	-Cyclical process of key activities	-Capability / target profiles -Sequential

2.9.1 Total Quality Management

Crosby (1979) championed the "zero defects" approach to management. According to Crosby, organizations could increase their performance by identifying and eliminating defects in key processes. Crosby's philosophical approaches lead him to develop the Quality Management Maturity Grid that identified five levels of organizational maturity based on demonstrated levels of process institutionalization and cultural adoption (Crosby, 1979). The Quality Management Maturity Grid established the conceptual foundation for the creation of the first capability maturity

model and the furthering of a process improvement approach known as Total Quality Management (TQM).

As one of the earliest process improvement methodologies, TQM seeks to provide a method for continuously improving product and service delivery through emphasis on management practices. By emphasizing core management practices such as requirements generation and process responsibility, TQM devalues quantifiable results or outcomes (Aristigueta, 2008). Building on Crosby's zero defects philosophy and Deming's (1986) fourteen points for management, TQM suggests that the institutionalization of processes will improve organizational performance and culture (Curtis et al, 2002; Aristigueta, 2008; Garcia and Turner, 2007). TQM's philosophies were widely adopted by large people-centric organizations. Manufacturing and other more technology-dependent processes required other methods of process improvement to enhance their operations.

2.9.2   Lean

As an early process improvement methodology famously adopted by Toyota as a means of optimizing their manufacturing production (Holweg, 2007), Lean Manufacturing, or Lean, emphasizes the elimination of wasteful activities in order to enhance manufacturing productivity. By focusing on value-driven approaches to processes, Lean methods provide a vehicle for organizational improvement. This process improvement approach when fully adopted leads to more productivity and ultimately greater profit margins (Holweg, 2007). Building on the popularity of TQM and the publicized success of Lean in the manufacturing industry, other process improvement techniques began to surface.

2.9.3 Six Sigma

Six Sigma is a process improvement method sharing a similar philosophical approach to Crosby's (1979) Zero Defects management concept. In attempting to achieve a zero-defect environment, Six Sigma provides users a way to minimize process variability and increase productivity. This, according to Six Sigma advocates, results in increased parity and/or repeatability of processes which leads to the establishment of quantifiable targets that can ultimately guide process improvement. Six Sigma emphasizes an improvement framework known as DMAIC (Define, Measure, Analyze, Improve, Control) (Garcia and Turner, 2007). In recent years, Lean and Six Sigma suites have been combined into the Lean Six Sigma (LSS) approach that is now championed by a variety of organizations including the U.S. military (DoD, 2007).

2.9.4 IDEAL

IDEAL is a process improvement life-cycle developed by the Software Engineering Institute (SEI) at Carnegie Mellon University (CMU). The IDEAL cycle, or Initiation Diagnosis Establishment Action Learning, provides organizations with a list of established activities to follow in order to improve programs as shown in Figure 7. IDEAL expands on the basic concepts in Shewhart's PDCA cycle and provides organizations with a cyclical, repeatable process map intended to guide program and process improvements (Garcia and Turner, 2007).
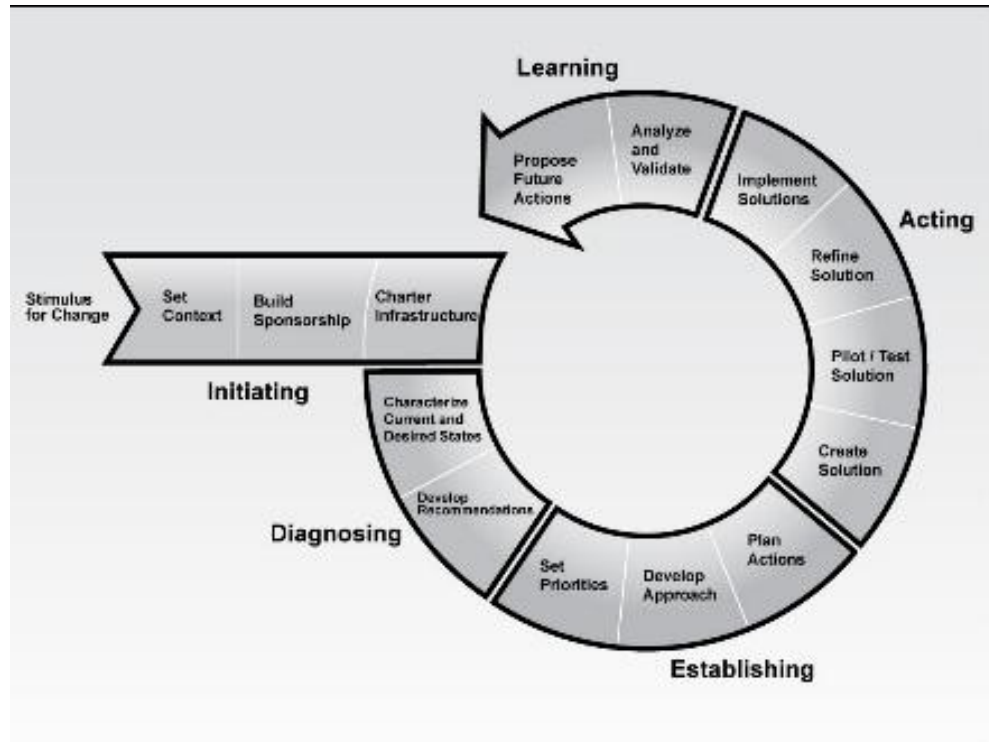
Figure 7: IDEAL Cycle
(Dunaway and Masters, 1996, p. 3)

2.9.5   Maturity Models

Unlike the process improvement methods discussed that have minimal variation in their content, maturity models are often represented in numerous alternative architectures. Regardless of design and content, the chief intent of a maturity model is to provide a structured list of tasks representing organizational best practices for a particular focus area (Chrissis et al., 2003). Like these other methods, maturity models also seek to provide a mechanism for improving process performance by eliminating wasteful work practices and instead focusing on institutionalizing proven best practices. However, the maturity model presents the identified best practices in a logical sequence of progression that allows an adopting organization to more directly focus process improvement efforts.

2.10 Selecting a Process Improvement Approach

As discussed, several choices exist for guiding process improvement efforts within an organization. Some methods are more appropriate than others based on the specific direction and intent of an organization and its need for process improvement. Each alternative strategy brings a unique focus and approach to improving processes with associated strengths and weaknesses. Despite the differences, each of the process improvement approaches discussed offers users a structured method to improve their processes, regardless of functional area. Some of the model-based strategies like maturity models facilitate the consolidation of best practices into a single medium for all users. Having a model that articulates user-defined best practices or essential tasks helps organizations work smarter – not harder – and with improved consistency. So, the applied benefit of process improvement is potentially significant. However, most of the above approaches are grounded in software engineering and other well-defined practices and are therefore best suited for the inherent predictability of such functions. This makes adapting process improvement concepts and techniques challenging for the operational uncertainty and fluidity of military operations.

Process improvement techniques can provide a unique way to examine the complexities involved in dual status commander operations and help stakeholders develop a structure for improving these complex missions. Because maturity models owe their existence to the DoD as the primary funding source (Gallagher, 2002; Chrissis et al., 2003; 2007; Ahern et al., 2008; Garcia & Turner, 2007; Forrester, Buteau, & Shrum, 2009; Carnegie Mellon University, 2010), there is a unique connection between these models and current defense practices. Maturity models, therefore, offer a suitable approach to this research as a natural extension of an already

endorsed DoD product. This is not to say that the other strategies are ill-suited for application to military operations, however.

Since little work has been done in this area assessing the potential – much less actual – utility of process improvement techniques on military operations, we simply do not know which methods are more or less appropriate. Most process improvement approaches are designed to assess and improve the "assembly line" structure and predictable systems associated with software and systems engineering. These approaches focus on the identification of wasteful practices and direct their removal in order to improve system performance. The concept suggests that small changes or improvements in larger processes have a cascading effect on each subsequent process thereafter (Comfort, 2000). This results in larger changes or improvements to predictable outcomes. Military operations of any kind are rarely predictable, however.

While situations and scenarios can be anticipated with some accuracy during the conduct of a military operation, there is always a degree of uncertainty. As such, some process improvement techniques provide little logical utility for most military operations where flexibility and improvisation are highly valued. However, if we instead shift the focus of our improvement efforts to mapping the relevant processes and essential tasks that occur during the normal conduct of these operations – like the maturity model approach suggests – we can generate significant improvements in overall operational efficiency. Therefore, there is an opportunity to pursue the application of maturity modeling approaches to military civil support operations with the ultimate goal of improving these often complex processes through the identification and structured representation of operational best practices.

2.11 A More Detailed Look at Maturity Models

A maturity model is like a map, it helps you determine where you are relative to where you want to go. It also identifies places along the way that are intermediate destinations on the journey to maturity (Alberts, Huber, and Moffat, 2006, p. 21).

Maturity models are useful tools for identifying goals, objectives, practices, and standards needed to improve process consistency and performance. The model provides a practical framework for the sequential organization of best practices along an evolutionary path of interconnectivity (Chrissis et al., 2003; 2007; Ahern et al., 2008; Garcia and Turner, 2007). Just as a driver might plan a route complete with street names, turning directions, distances traveled, etc to arrive at a desired destination, formal organizations must plan a route towards the achievement of their goals. Maturity models can provide the directions for arriving at the desired destination. In their most basic design, maturity models are semantic models incorporating task descriptions and indicators of success into tiered maturity levels to allow for sequenced progression through processes. Conceptually, as an organization's process progresses through the model components, risk and waste decrease while productivity and effectiveness increase (Figure 8).
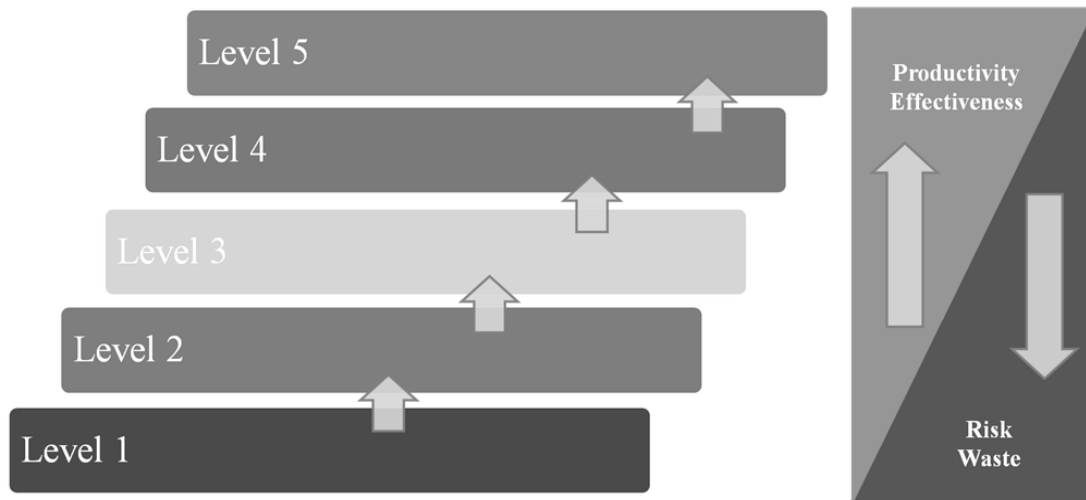
Figure 8: Maturity Model Concept

In a more advanced form, a maturity model will provide a structured representation of a process listing goals and practices specific to each ascending level of maturity within the defined process. Organizations progress through maturity levels by completing the specific practices and goals of each process area within the desired maturity level. In this context, maturity models are relatable to "how-to" manuals. Complex processes, whether changing a tire, building a computer program, or managing a disaster response operation, require some form of guidance to facilitate proper user application leading to the desired outcome. Maturity models can be used to guide and assess performance against an accepted list of standards that also help to focus future process improvement efforts (Carnegie Mellon University, 2010). Moreover, due to the flexibility in creating an organizationally specific model, maturity modeling is a common technique employed by industry experts from software engineering to business management and other process-oriented

organizations. However, applying maturity model concepts and techniques to military operations is a relatively unexplored area of research with endless possibilities.

Expanding on this, maturity models can be useful for assessing, mapping and improving military civil support functions and performance by focusing on the relevant processes inherent in every dual status commander-led mission. As a proven process improvement tool, maturity models such as CMMI present a viable option for application to current DSCA operational processes. As seen in the literature within the DSCA arena, dual status commander arrangements lack sufficient tools to guide these critical processes. Developing a maturity model specific to the dual status commander arrangement for a no-notice/limited-notice incident is a unique and needed contribution to this critical mission area. In order to ensure validity and credibility, the development of such a model for this dissertation was guided by key themes contained in the maturity model literature.

2.12 Capability Maturity Model Integrated (CMMI)

The first Capability Maturity Model (CMM) was developed in 1987 by researchers at Carnegie Mellon University (CMU) and the Software Engineering Institute (SEI) (Garcia and Turner, 2007). The CMU researchers designed the initial model in response to a request from DoD for a tool to evaluate contractor performance against a series of standardized procedural best practices (Garcia and Turner, 2007). The SEI has continued its research and development of CMM's since the late 1980's. Noting an increasing number of maturity models throughout various industries, in 2002 SEI researchers developed the Capability Maturity Model Integrated (CMMI) as a way to integrate industry best practices from organizations outside of the traditional software engineering fields which maturity models were originally designed. Since

2002, several versions of CMMI models have been developed for application both in and out of DoD. Today, DoD remains the principal funding agency for the SEI and its CMMI-related research. The maturity model focus area within SEI has since evolved into the CMMI Institute (CMMI Institute, 2013). Due to the nature of this project, replicating SEI's maturity model design for application to DSC operations is a natural extension of an already endorsed DoD product.

2.12.1 CMMI Application

The origination, history, funding, and ongoing connection of CMMI models to DoD has been addressed in the literature many times over (Gallagher, 2002; Chrissis et al., 2003; 2007; Garcia and Turner, 2007; Ahern et al., 2008; Forrester et al., 2009; Carnegie Mellon University, 2010). CMMI in its most basic form is "a framework of management, engineering, and support best practices organized into topics called process areas" (Garcia and Turner, 2007, p. 21). The models are not prescriptive checklists for accomplishing tasks. Rather, they provide a consolidated, logically and sequentially structured list of organizational best practices that, when interpreted and implemented into a process management approach will lead to improved service and product delivery. As they are not prescriptive, CMM/CMMI models do not tell users how to perform but instead point out the process shortfalls. CMM/CMMI is intended to diagnose problems and improve performance through the application of the best practices for processes (Chrissis et al., 2007; Carnegie Mellon University, 2010). Since the first CMM was developed in 1987, CMM's and CMMI process improvement models have been successfully applied to different industries (Garcia and Turner, 2007; Chrissis et al., 2003; 2007; Ahern et al., 2008; Forrester et al., 2009). As noted by Phillips and Shrum (2011):

Businesses that adopt CMMI experience significant improvements in performance. Many improve their on-time delivery, error detection rates, and accuracy of work estimates. Others reduce overhead rates and increase productivity. Because CMMI covers a wide range of activities and it works hand-in-hand with business objectives, improvements focus on the needs of the business (p. 1-2).

Most CMMI-based research contributions are concentrated in software engineering (Garcia and Turner, 2007; Chrissis et al., 2007; Forrester et al., 2009), risk management (Gunderson, 2005) information technology (Weyns et al., 2010; Lamb and Yu, 2011), business process management (Rosemann and de Bruin, 2005; de Bruin et al., 2005; Poppelbub and Roglinger, 2011; Yimam, 2011), project management (Crawford, 2007), and supply chain management (Garcia and Giachetti, 2010). So while maturity models have been successfully implemented to help a variety of industries, there is potential for additional application to the military that presents a unique opportunity to further connect this DoD-supported concept with a different element of military operations. CMM/CMMI model architecture is well-suited to military application because of its emphasis on process mapping and best practices identification.

2.12.2 Overview of CMM/CMMI Structure

CMM's focus on improving processes in an organization. They contain essential elements of effective practices for one or more disciplines and describe an evolutionary improvement path from ad hoc, immature practices to disciplines, mature processes with improved quality and effectiveness (Chrissis et al., 2007, p. 8).

CMM/CMMI models approach process improvement from two distinct angles: 1) individual process "capability" assessment and 2) organizational "maturity" benchmarking; hence the name Capability Maturity Model (Integrated). Unlike other

process improvement tools that offer benchmarking strategies for improving

organizational efforts, CMM/CMMI uses tiered levels to represent an organization's

current and targeted capability and/or maturity levels. Capability levels range from 0-5

and maturity levels range from 1-5; 5 being the most mature or "best" level in both the

capability and maturity representations (Ahern et al., 2008). Each capability and

maturity level contains a number of key components (Figure 9) to assist users in

assessing their process performance and status. The main elements of every

CMM/CMMI model include Process Areas (PA), Specific Goals (SG), Specific

Practices (SP), Generic Goals (GG), and Generic Practices (GP). In order to use the

model per its intent, users must decide which process improvement approach is

necessary and whether the desired emphasis is on improving an individual capability

(continuous) or overall organizational maturity (staged).
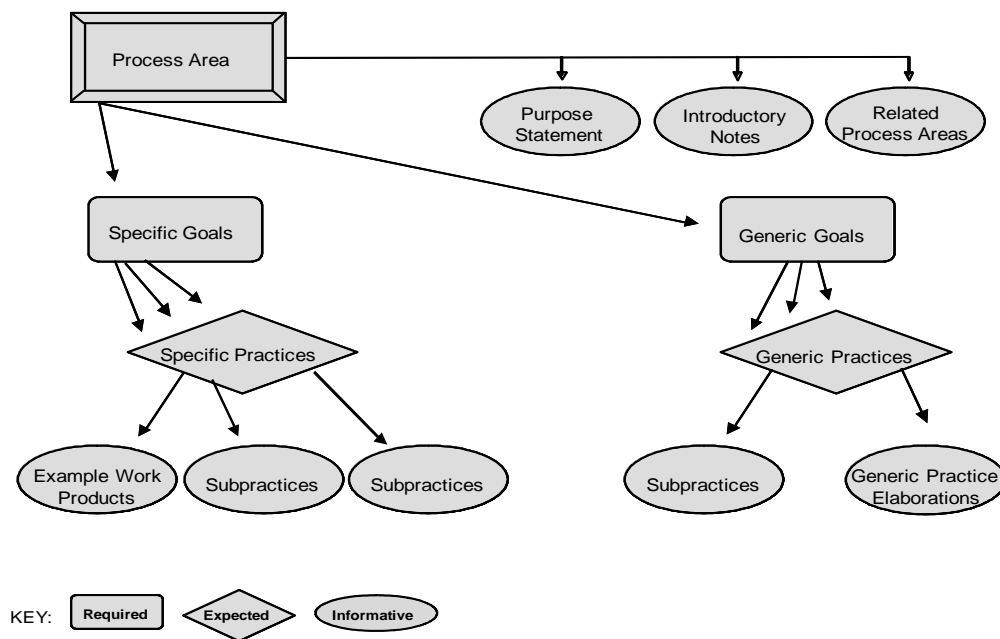
Figure 9: CMMI Model Components
(Carnegie Mellon University, 2010, p. 10)

2.12.2.1 Continuous Representation

Capability and maturity level components differ in their intent and representations. Capability levels are structured in a tiered system of generic goals and practices that are intended to be applied to a desired process area(s). The continuous representation approach emphasizes the completion of these generic goals and practices relative to the specific process area(s) chosen for improvement (Carnegie Mellon University, 2010). In other words, within the continuous representation approach, an organization chooses individual process areas from the model and completes the listed goals and practices of the chosen area to focus their improvement efforts. The goal of this approach is to improve process capabilities specifically related to selected process areas rather than improving overall organizational performance. In order to achieve a higher capability level for a given process area, the organization must achieve all of the Generic Goals (GG) and Generic Practices (GP) within the desired capability level (1-5) as applied to the chosen process area (Figure 10). The mechanism for approaching this improvement method is through the development of a target profile (Figure 11).

The target profile helps users identify specific process improvement targets for a focused improvement effort. Users select desired process areas for improvement from the existing CMMI structure and determine their desired capability level (1-5). The target profile determines the specific set of goals and practices that the organization will address through its process improvement efforts (Carnegie Mellon University, 2010). Capability level 1 requires the achievement of all SG and SP for the chosen process area listed in the maturity model. Capability levels higher than 1 are independent from a process area's SP and SG's. Rather, higher capability levels

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require the institutionalization of processes through a focus on the GG and GP referenced above (Carnegie Mellon University, 2010).

Capability Level 1-*N*

Generic Goal 1

Generic Practice 1.1	Generic Practice 1.*N*
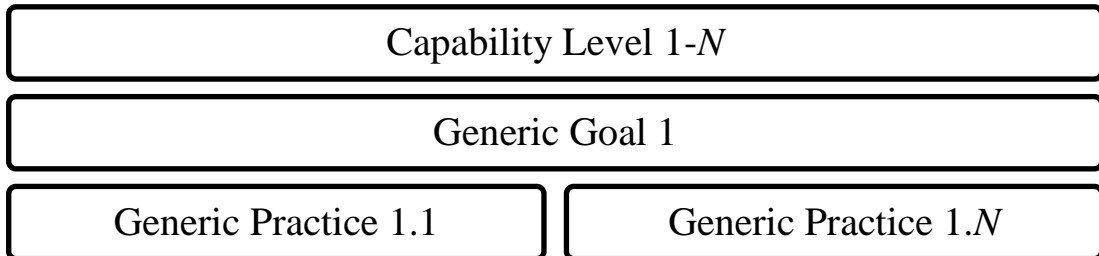
Figure 10: CMMI Capability Level Structure
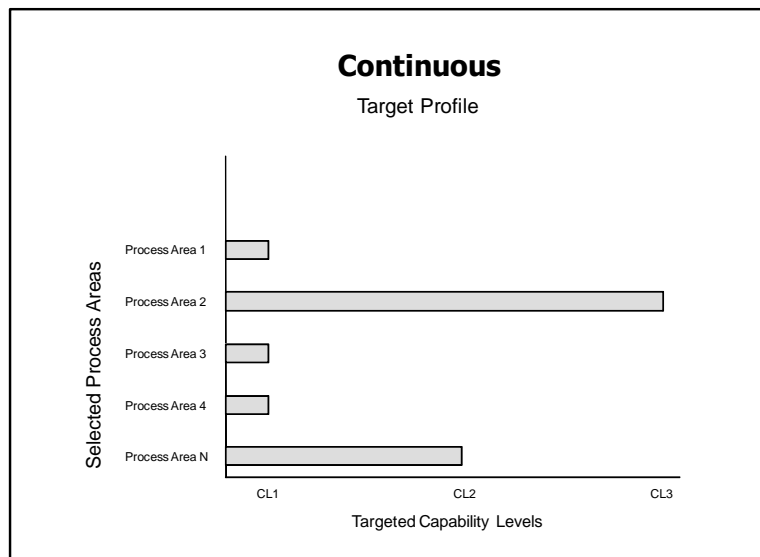
Figure 11: Continuous Representation Target Profile
(Carnegie Mellon University, 2010, p. 31)

2.12.2.2 Staged Representation

Unlike continuous representation that focuses improvement efforts on specific process areas based on perceived gaps or individual improvement needs, staged

representation improvement methods require the completion of the specific goals and specific practices relative to process areas within increasing maturity levels. This is a more linear and sequenced approach than continuous representation and emphasizes a macro-level focus on organizational improvement. Each process area within the CMM/CMMI models contains Specific Goals (SG) and Specific Practices (SP) relative to the PA focus. In order to progress through the maturity levels and achieve increased organizational maturity, an organization must satisfy all PA requirements within a maturity level. The PA's are grouped into corresponding levels that represent increasing maturity. A staged improvement approach requires an organization to start at maturity level 1 and progress through each of the five maturity levels within the CMM/CMMI structure (Figure 12) (Chrissis et al., 2003; 2007; Garcia and Turner, 2007; Ahern et al., 2008; Forrester et al., 2009; Carnegie Mellon University, 2010). Table 4 notes the difference in capability and maturity levels between continuous and staged representation.

Maturity Level N							
Process Area A				Process Area B			
Specific Goal 1		Specific Goal N		Specific Goal 1		Specific Goal N	
Specific Practice 1.1	Specific Practice 1.N	Specific Practice 2.1	Specific Practice 2.N	Specific Practice 1.1	Specific Practice 1.N	Specific Practice 2.1	Specific Practice 2.N
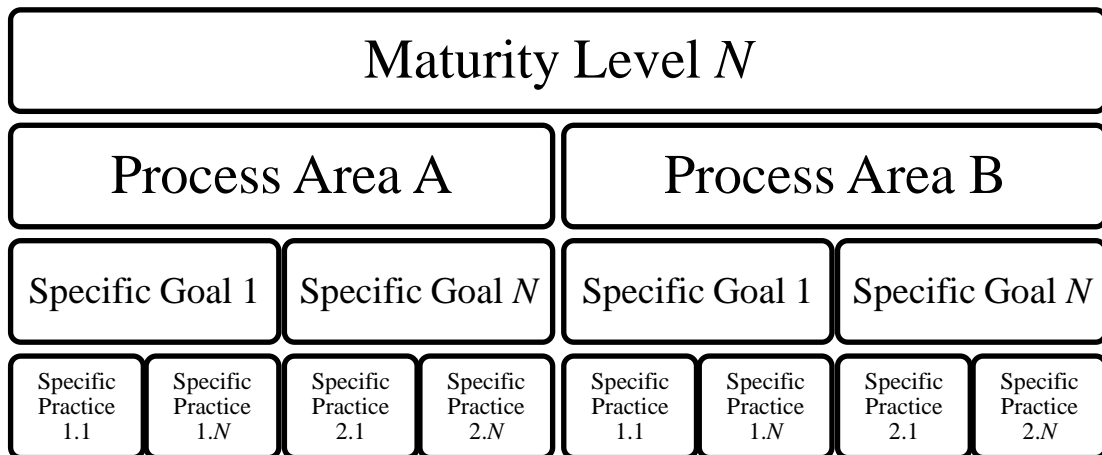
Figure 12: CMMI Maturity Level Structure

Table 4: Comparison of Capability and Maturity Representations
(Carnegie Mellon University, 2010, p. 23)

Level	Continuous Representation Capability Levels	Staged Representation Maturity Levels
Level 0	Incomplete	
Level 1	Performed	Initial
Level 2	Managed	Managed
Level 3	Defined	Defined
Level 4		Quantitatively Managed
Level 5		Optimizing

2.12.3 Adapting Maturity Models

The original CMMI, as an adaptation of the CMM, was created to provide a standard against the growing variance of maturity models in the software and systems engineering industry. According to SEI researchers, this saturation of models and lack of consistent standards was the chief motivation for the development of an integrated maturity model, or CMMI (Chrissis et al., 2003; 2007; Garcia and Turner, 2007; Ahern et al., 2008).With the prevalence of model designs, DoD required a standardized, industry-wide model of best practices that could serve as a universal benchmark for assessing and comparing contractor performance (Ahern et al., 2008). CMMI advocates argue that the new models are reflective of comprehensive industry best practices and are adaptable and flexible enough to be applied or "mapped" to any organization's processes (Garcia and Turner, 2007; Ahern et al., 2008; Carnegie Mellon University, 2010). Despite this position, many have chosen instead to continue

using the concept, design, and intent of CMM/CMMI to create maturity models specific to their own organization and/or processes.

Researchers have taken concepts inherent in CMMI and adapted them to fit a variety of industries. As mentioned above, the variance in maturity model design, content, and intent is great. Findings regarding the usefulness and influence of the various models are as disparate as the details of the models. While many researchers laud the development and application of maturity models unique to an organization's processes and goals (Rosemann and de Bruin, 2005; de Bruin et al., 2005; Holmes and Walsh, 2005; Alberts and Hayes, 2007; Alberts et al., 2009; Lamb and Yu, 2011; Popplebub and Roglinger, 2011; Yimam, 2011) others are more critical. Charles et al. (2010) criticized the use and application of CMMI concepts in a humanitarian logistics organization. Some limitations noted dealt with CMMI's complexity and unsuitability for flexible organizations relying on agile processes:

> CMMI cannot readily be used either. The design of a specific model for agility capabilities is necessary as CMMI has more than 500 pages. This leaves little room for interpretation and makes it a time-consuming process, and therefore not usable in humanitarian organizations. Moreover, the emphasis on strict procedures and their documentation could lead to a bureaucratic behaviour. It also aims to have stabilized processes, which is not a fundamental characteristic of agile processes (Charles et al., 2010, p. 728).

While the researchers above express concerns over the procedural structure of CMMI and the tendency to encourage bureaucratic behavior, application of CMMI concepts and designs to military DSCA processes is a natural extension of an already procedurally-based organization with heavy bureaucratic leanings. In addition, there is a basis of conceptual support for process improvement in the existing disaster literature. Harrald (2006) and Comfort (2000) discuss elements of organizational

process maturity and the importance of achieving a balanced approach to operations. The proposed application of CMMI process improvement builds on the conceptual argument presented by Harrald's organizational typology model and incorporates Comfort's non-linearity principle. Harrald's (2006) contention that organizations must achieve a balance between agility and discipline is in consonance with the foundation of CMMI: well-defined processes can guide effective performance by facilitating speed of operation (Garcia and Turner, 2007). In his article, Harrald (2006) further notes:

> Response organizations must possess agility and discipline to respond to extreme events. It is interesting to note that the advancements in discipline (structure, organization, and procedures) have originated from within the emergency management profession (p. 263).

Similarly, CMMI co-developers Suzanne Garcia and Richard Turner suggest "We want our processes to be the perfect balance of discipline and agility so they enable us to create the most value with the least cost" (Garcia and Turner, 2007, p. 9-10). Expanding on this, Comfort's (2000) discussion of complex adaptive systems presents further support for these concepts by arguing that, similarly to the intent of maturity models, small incremental changes in processes over time will result in large changes in performance outcomes. These excerpts provide us with peripheral support and motivation to examine the basis of the research question: how do we develop a capability maturity model to represent the dual status commander processes during no-notice/limited-notice incidents?

2.12.4 Creating Maturity Models

As mentioned, many organizations and management researchers have adapted the concepts and philosophies of CMM/CMMI and developed their own maturity

models. Because of this, there are several studies available to use for replication of methods. While others have developed their own models using techniques such as the Delphi Method (Garcia and Giachetti, 2010) and focus groups and interviews (Holmes and Walsh, 2005; de Bruin, Rosemann, Freeze, and Kulkarni, 2005; Alberts and Moffat, 2007; Alberts et al., 2009; Popplebub and Roglinger, 2011), only one study reviewed presents a detailed discussion of framework and methodology for the design and development of a generic maturity model.

De Bruin et al. (2005) authored "*Understanding the Main Phases of Developing a Maturity Assessment Model.*" This paper proposes a defined methodology for the creation and development of a maturity model based on the tenets of other accepted models, most notably CMMI. Within their discussion, de Bruin et al. (2005) review five well-established maturity model architectures from domains including project management, IT management, and business management. Based on a review of the other maturity models present in the literature, the paper establishes six phases for the development and eventual implementation of a generic maturity model (Figure 13). Similar to the aforementioned development framework proposed by Garcia and Turner (2007), each phase contains suggested research methodologies for data collection primarily using the Delphi Technique, focus groups, and/or stakeholder interviews. The researchers conclude by suggesting the approach methodology offered is generic enough to be replicated across industries and suited to meet the needs of a range of mission areas. The benefit this study is that it provides a basic approach to developing a maturity model that can be adjusted as needed to meet specific organizational requirements. The methods proposed in this paper provided a basis for the development of my own research design using a similar approach.

Scope ⟩ Design ⟩ Populate ⟩ Test ⟩ Deploy ⟩ Maintain

Figure 13: Maturity Model Development Phases
(De Bruin et al., 2005, p. 2)

The other group of studies of interest to me as I completed this research was a series of projects by researchers from the DoD Command and Control Research Program (CCRP). Over the past ten years, the United States has been engaged in combat operations in Iraq and Afghanistan. Unlike past military operations, the enemies in these wars employ unconventional tactics requiring constantly adapting command and control structures. As a result, much research has been done on the characteristics of command structures during military campaigns. In 2001, researchers from the CCRP took the maturity model concept and developed a military-specific command and control maturity model known as the Network Centric Maturity Model (Alberts and Hayes, 2007). This concept evolved through the years and became known as the North Atlantic Treaty Organization (NATO) Network Enabled Command and Control Maturity Model (N2C2M2). With defined maturity levels and associated command characteristics designed to represent a range of military operations, the N2C2M2 is a basic maturity model without any capability level representation. This model was useful in the development of my research, however, by offering unique considerations for military command structures not found in any other body of literature. My model went beyond the current design structure of the N2C2M2 by adding capability levels to the model, thereby qualifying the model as a true Capability Maturity Model by design.

2.13 Opportunities for Improvement

The literature review illustrates the issues and gaps with regard to dual status commander arrangements during no-notice/limited-noticed incident response. There is an opportunity to learn from events like Hurricane Sandy and improve our knowledge and understanding of dual status commander structures and ultimately improve this critical mission capability. Using maturity models to guide these process improvement efforts is a unique contribution with both theoretical and applied benefits. The applied benefit of improving the operational processes during civil support missions has been addressed. In addition to providing a tool for process improvement, this research presents a research design that can be applied to other areas of research as well. While the specific methods employed are not unique, the analysis and end product that was developed from combining these methods is.

By using Hurricane Sandy as a case study platform to develop a capability maturity model of dual status commander-led operations, this research adds new knowledge in a variety of ways. We simply do not have a wealth of knowledge regarding Hurricane Sandy at this stage post-event. Moreover, we have limited research knowledge of any kind on dual status commander processes. And while there is a significant body of research dedicated to the study of maturity models and process improvement, the application of this concept to military operations is a completely open area of research. In essence, the DSC2M2 shares the intent of CMM/CMMI but incorporates different terminology, content, and design architecture to create a unique model specific to the complex challenges represented during dual status commander operations in support of no-notice/limited-notice incidents.

Chapter 3

RESEARCH METHODOLOGY AND PROCESS

3.1 Introduction

Creating a common operating picture for military disaster response operations involving both state-controlled and federal military forces is a challenge. Understanding the complexities and requirements of this operational landscape is necessary to appropriately manage these unique civil support operations. Because of the multiple stakeholder perspectives represented during dual status commander-led operations and the lack of shared knowledge across participating organizations, agencies, and departments, there are notable gaps in DSCA operations using the dual status commander arrangement. In order to answer the research questions and contribute knowledge to this unique area of research, I developed a multi-step research process designed to facilitate the creation of two primary research products: 1) a detailed case study of the military response to Hurricane Sandy in New York and 2) a comprehensive operational maturity model representing the complexities of dual status commander-led response missions.

In order to perform the case study and develop the Dual Status Commander Capability Maturity Model (DSC2M2), I used the existing literature to guide the design and implementation of a qualitative research approach with four core methods for data collection and an analytical, iterative coding process for data analysis. By using multiple recognized and complementary methods for data collection and analysis, I could triangulate the data to enhance the credibility of the final DSC2M2.

The following sections address the philosophical logic for this research approach, the research perspective applied, the research design, the data collection and analysis process, as well as issues concerning credibility, validity, and reliability of the research data.

The procedures for data collection had to meet the Human Subjects requirements for the university and were subject to review by the Institutional Review Board (IRB). Appendices F-I contain the relevant documentation including the approval letter, informed consent form, interview guide and recruiting email.

3.2   Philosophical Logic

This research seeks to understand, analyze, and improve a complex military command arrangement by combining the knowledge and perspectives of individuals and organizations as well as written documents. The dual status commander arrangement presents a unique organizational structure integrating issues of coordination and governance. It is chiefly an interactive coordination mechanism designed to improve command governance and multi-stakeholder communication efforts in order to enhance combined state and federal military disaster response efforts. Since the research generally emphasizes human interaction and managerial processes, a qualitative research approach was appropriate to gain a deeper understanding of the dual status commander process and context. A qualitative approach also facilitates greater flexibility in the perception and subjective determination of the significance of the data collected (Berg and Lune, 2012). Using qualitative methods for this study provided an opportunity to develop unique interpretations of the patterns, processes, relationships, concepts, and themes within the data collected (Patton, 2002; Berg and Lune, 2012). Therefore, the qualitative

approach was ideal for this particular research and was an effective way to analyze the complexities of DSC operations.

According to many, the disparate perspectives among relevant stakeholders within a DSC operation have led to confusion and misinterpretations of processes, policies, legal authorities, and other critical mission components (United States Fleet Forces Command, 2013; Marine Corps Center for Lessons Learned, 2013a; 2013b; Office of the Secretary of Defense, 2013a; 2013c; Naval Warfare Development Command, 2013; Muser, 2013). Without knowing the specific issues and differences influencing DSC operations, it was necessary to take an inductive approach to this research in order to gain a holistic perspective without interpretive confines or limitations.

3.3 Research Perspective, Biases, and Entrée

Because the intent of this research was to examine a particular type of military operation in order to identify key processes, patterns, and themes for further analysis, an inductive rather than deductive approach was necessary to allow for open and unrestricted interpretation of the data. Inductive research and analysis, according to Patton (2002), "involves *discovering* patterns, themes, and categories in one's data" (p. 453). An inductive approach to data collection and analysis, therefore, provided the best perspective for conducting this research. While the data collection and analysis was approached inductively leaving room for open interpretation, my unique perspective and past professional experience also had to be considered as a potential source of influence and bias.

As a former Marine Corps officer and Pentagon-based defense contractor, I have personal and professional experience with and exposure to a range of Department

of Defense matters; both operational and administrative. As such, my military background presented an obvious source of potential bias during the conduct of this research. Fortunately, any potential biases were mitigated by my lack of exposure to and knowledge of the dual status commander concept. Because I did not have any previous experience with this command arrangement, I did not approach the research with any preconceived notions or biases that would have influenced the analysis or conclusions. So, while I was able to mitigate, or at least marginally reduce biases in this research, my background did influence perhaps the most valuable aspect of this research: entrée.

Performing research on any DoD topic can be problematic for a variety of reasons. Collecting data often requires access to secure government facilities or credentialed electronic databases. Every research interview and focus group I conducted for this research effort occurred in or on military bases that are property of the federal government. Beyond this, gaining contact information and actually speaking with personnel who perform sensitive work is nearly impossible without prior personal connections or other means of accessibility. My past military service and defense contractor experience, coupled with an extensive network of personal contacts and an active Secret security clearance provided me with the necessary access requirements to ensure entrée into this restrictive research environment. In addition, my experience provided an initial perception of credibility seemingly valued by the relevant stakeholders who participated in this research effort. Without these pre-existing connections, this research would not have been possible.

3.4 Building the Case Study and Maturity Model

Since Hurricane Sandy was, at the time of this research, the only no-notice/limited-notice incident response to use a dual status commander for the integration of federal and state military forces, I performed a detailed case study analysis of the military response in New York in order to learn about the successes, failures, and areas needing improvement for future operations. The case study (presented in Chapter 4) provided the foundational basis of data to allow me to address these issues and bring together the perspectives of all participating entities to form a singular process model populated with the necessary essential tasks for successful preparation, deployment, execution, and withdrawal of military forces during domestic disaster response efforts.

The literature review illustrates the apparent lack of comprehensive knowledge regarding the dual status commander arrangement and the need for tools to improve our understanding and execution of this mission area. The literature review also supports my argument that using process improvement techniques – specifically maturity models – can offer a useable method for assessing and improving future military civil support operations. Therefore, the intent of creating a capability maturity model for dual status commander operations is to link policy and written procedures with valuable practices not contained in any official document. Linking this material in the form of a single process model is a useful contribution to research with applied operational benefits. The data collected during the case study facilitated the eventual development of the final maturity model.

3.5   Research Design

After gathering documents and performing a comprehensive literature review, the next step was to design the approach to the research. In order to answer the research questions, perform the case study, and build the DSC2M2, I needed to design a research approach that was both rigorous and methodologically sound. To do this, I used the literature review to determine a research-supported and suitable approach for both data collection and analysis. Given the nature of the topic and its emphasis on human interaction, coordination, management, and governance, I determined that a qualitative design and associated methodologies were appropriate to generate the case study and maturity model.

Using Yin's (2003) work on case studies as well as de Bruin et al's (2005) maturity model development guidance as a basis for my decisions, I decided to use a combination of four well-defined data collection methods as tools for developing the Sandy Case Study and the DSC2M2. As such, I employed a combination of document collection/review, semi-structured interviews, focus groups, and non-participant observations to inform the development of the research products through eventual analysis (Figure 14).
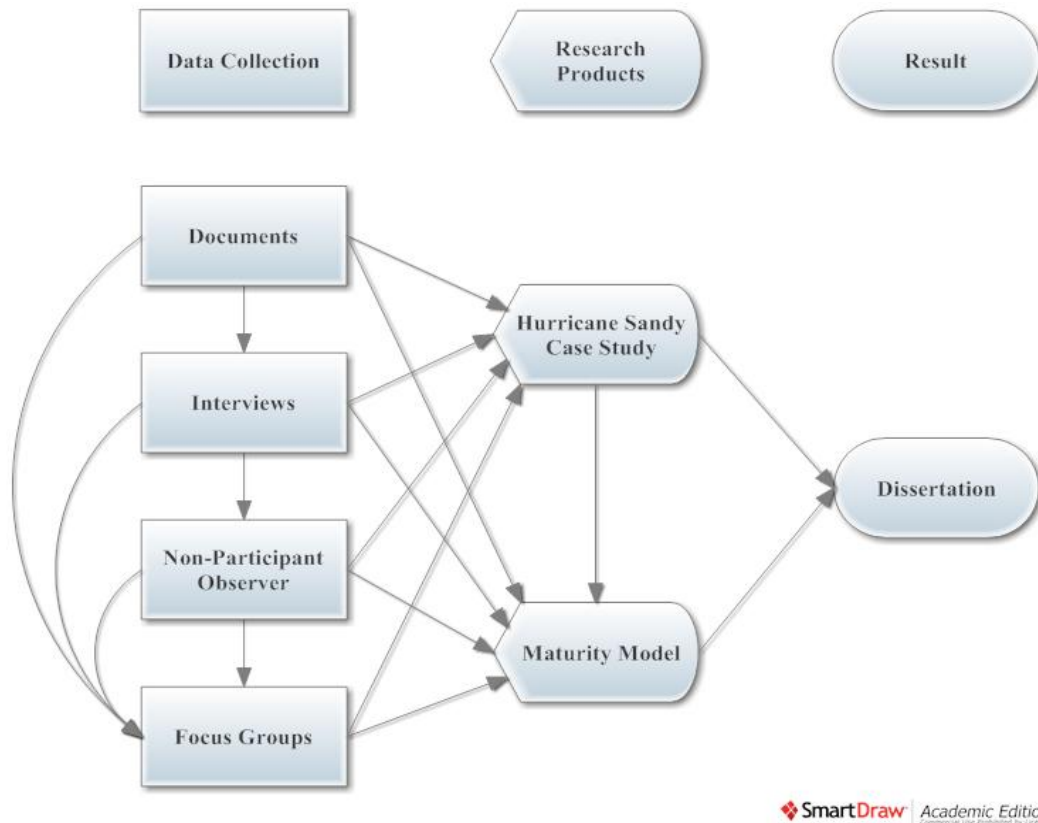
Figure 14: Research Design

Using four methods of data collection was important for triangulation of the data. In qualitative research, triangulation is a process involving the "use of multiple data-gathering techniques to investigate the same phenomenon… (and)… is interpreted as a means of mutual confirmation of measures and validation" (Berg and Lune, 2012, p. 6). Using these four methods to perform the research helped me to triangulate the data as well as to ensure comprehensive coverage of the material from

a range of perspectives and enhance the credibility of the final case study and maturity model.

3.5.1 Sampling Criteria and Sample Selection

After determining the appropriate research design for the completion of the dissertation, I then needed to establish the criteria and limitations for my data collection efforts. Since this research process required collecting data on a narrowly focused topic with few people capable of providing relevant data, I had to establish clear interview sampling criteria to guide the recruitment and selection of participants. I used purposeful sampling techniques to generate an initial base of interview subjects from which I then employed snowball sampling to recruit additional subjects. My initial target was 20 (N=20) individual interviews. At the conclusion of the dissertation, I completed exactly 20 individual interviews. Appendix J contains a more detailed discussion of the specific sampling techniques and criteria used for this dissertation.

3.5.2 Subject Recruitment

After establishing Hurricane Sandy and the dual status commander as a suitable dissertation research topic early in 2013, I began initial efforts to identify potential research subjects. Through a series of referrals initiated by my personal network of professional contacts in the U.S. military, I was able to establish a connection with various interview subjects for this research. Appendix J contains further details regarding the subject recruitment process.

3.6 Data Collection

After designing the research and completing the initial subject recruitment, I began my data collection efforts. Using four methods of data collection (document review, interviews, focus groups, and non-participant observer) required a significant effort to plan. In order to generate the dissertation proposal and literature review required for this research, I spent nearly nine months collecting and reviewing documents relevant to both the dual status commander concept and the military response to Hurricane Sandy in New York. This initial effort to collect materials provided a valuable foundation to begin the actual data collection effort required for this dissertation.

3.6.1 Document Review

Building on the research previously completed to generate the dissertation proposal, I continued to review and collect documents as a principal method of data collection. As the main source of research data during the beginning stages and prior to conducting interviews, documents contributed a great deal of important historical and conceptual background to this project. I used several approaches to collect relevant documents for eventual analysis. Table 5 provides a brief overview of the types of documents reviewed for this research. The document collection and review for this research provided several useful topics of further inquiry helpful in designing the interview guides for use in subsequent phases of this research. Appendix K contains additional discussion on the document review process used for this dissertation.

Table 5: Document Review

Type of Document	# of Items Reviewed	# of Pages
Military Reference Publications	16	2,371
After Action Reports	34 (11 Sandy-specific)	768 (282 pages – Sandy)
Misc. Reports / Presentations	36	1,746
Laws / Statutory Authorities	14	N/A
National Policies / Guidance	11	505
Pentagon Briefings	13	27
Papers / Articles / Books	63	5,885
Total	187	11,302

3.6.2   Interviews

Having spent the previous nine months collecting relevant documents, performing a literature review, and speaking with stakeholders, by January 2014 I was ready to begin conducting individual interviews as my primary source of data collection. While there are several forms of interviews in qualitative research, this study used a semi-structured approach to interviewing; or "the type of interview that involves the implementation of a number of predetermined questions and special topics" (Berg and Lune, 2012, p. 112). This form of interviewing facilitated the use of an established instrument that posed questions to the interviewee in a specified order while remaining flexible enough to accommodate departures from the guide as the conversation dictated (Berg and Lune, 2012). Prior to conducting the interviews, I developed an interview guide with questions specific to both the case study element of

this research effort and the maturity model development process. A copy of this guide is provided in Appendix H.

Table 6 summarizes the interview process including the dates, locations, and interview focus of each of the 20 individual interviews conducted for this dissertation. As shown in the table, I conducted interviews in several locations and representing a wide range of perspectives within the Department of Defense including: I Marine Expeditionary Force (MEF), U.S. Northern Command (NORTHCOM), the United States Coast Guard (USCG) Atlantic Strike Team (AST), the Office of the Assistant Secretary of Defense (ASD) for Homeland Defense and America's Security Affairs (HD/ASA), Joint Task Force (JTF) Sandy, JTF Civil Support, and JTF Katrina. Appendix K contains a more detailed discussion of the logistics and processes used to schedule and perform the interviews. Further, each interview location and process is discussed separately in Appendix K as well.

Table 6: Summary of Interviews

Interview Label	# of Interviews	Interview Location	Interview Date	Interview Focus
IMEF	9	Camp Pendleton, CA	7-10 Jan 2014	DSC law/operations
NORTHCOM	1	Phone	21 Jan 2014	DSC operations
USCG AST	1	Fort Dix, NJ	23 Jan 2014	Inter-service / operations
HD/ASA	4	Pentagon	6 Feb 2014	DSC policy
JTF Sandy	1	Phone	20 Feb 2014	Sandy response

Table 6 continued

JTF Civil Support	1	Phone	4 Mar 2014	Sandy response
JTF Katrina	1	Skype	4 Mar 2014	DSC operations
HD/ASA # 2	1	Pentagon	11 Mar 2014	DSC and maturity models/process improvement
HD/ASA # 3	1	Pentagon	29 May 2014	DSC policy
TOTAL	20	Miles Traveled: ~6800	Interview Hours: ~30	

3.6.3   Non-Participant Observation

After beginning my data collection efforts, I was presented with an additional
(unanticipated) data collection opportunity. During the interview with the subject at
NORTHCOM, we discussed the possibility that I could attend an actual dual status
commander exercise and observe the execution of a domestic response to a simulated
disaster. While I did not originally include non-participant observation as a data
collection method in my dissertation proposal, an opportunity to observe a live dual
status commander-led exercise offered a significant enhancement to my overall
research effort. Observing such an exercise also provided the opportunity to view
tangible examples of the particular command arrangement I had been researching for
the past year at that point. After coordinating schedules, I was invited to Fort
Indiantown Gap – a National Guard training center near Hershey, PA – to observe
Vigilant Guard – an emergency response exercise sponsored by NORTHCOM and run
on a quarterly basis in conjunction with the National Guard.

I observed the National Guard and federal military – along with FEMA and the Pennsylvania Emergency Management Agency (PEMA) – participate in Vigilant Guard on May 13, 2014. As an invited guest of a NORTHCOM staff member, I was provided a credentialed observer pass and added to the list of additional observers representing area congressional districts, businesses, and others with a stake in this military exercise. As I was a non-participant in this exercise, I was able to freely move throughout the Command Operations Center (COC), listening in on operational briefings and other relevant conversations while taking notes. Non-participant observation – or onlooker observation (Patton, 2002) – is an unobtrusive measure of data collection separate from interviewing or other directed interactions. While I did not participate in the exercise and remained separated from conversations, I could be considered an overt rather than covert observer because I was identifiable in the COC. I spent five hours observing the exercise while taking notes and having informal (non-data related) conversations with military and civilian personnel alike.

3.6.4 Focus Groups

After conducting the individual document review, interviews, and non-participant observation of a DSC exercise, I used the collected data and began work on the development of the initial version of the DSC2M2 (the process of developing the DSC2M2 and subsequent versions is discussed in detail in Chapter 6). Per my research design, my intent was to use focus groups as an assessment and validation tool for the DSC2M2. "A focus group interview is an interview with a small group of people on a specific topic" (Patton, 2002, p. 385). As a recommended method of data collection for the development of maturity models (Chrissis et al., 2003; de Bruin, et al., 2005; Garcia and Turner, 2007), focus groups were well-suited to this research. With regard

to this study, the focus groups served as both a research validated and cost-effective method of data collection. Additionally, the focus groups provided a formal mechanism for refining and validating the proposed maturity model through group assessments and discussion of the issues and challenges associated with DSC operations. To ensure a well-defined and agreed upon model structure, I sought to conduct two focus group sessions with two groups of stakeholders involved in DSC operations: policy-oriented and operations-oriented. Using two distinct focus group orientations to refine and validate the model also enhances the credibility of the final DSC2M2.

Both focus groups were conducted in person to gain the benefit of face to face interaction, discussions, and clarity of expression. Additionally, because the proposed model is a visual tool first, I preferred to present the tool to the expert panel in this setting to facilitate more effective analysis and refining of the design, content, and structure of the model.

3.6.4.1   Focus Group 1: Policy Emphasis

After developing an initial populated model based on the aforementioned interviews, document review, and non-participant observations, I scheduled my first focus group with a selected panel of subject matter experts chosen from the sample of previous interview subjects in HD/ASA. The intent of the first focus group session was to present, analyze, and refine the initial version of the DSC2M2 based on the collective assessment of the expert panel. This first session was held in the HD/ASA offices in the Pentagon with three participants; all with administrative and policy experience related to the dual status commander initiative. Appendix K discusses the specific details of this focus group session.

3.6.4.2 Focus Group 2: Operational Emphasis

Following the first focus group, I assessed my notes and the comments received from the participants in order to determine the necessary model revisions. Once the necessary revisions to the DSC2M2 were completed, I began to coordinate my second focus group with a separate expert panel representing the operational perspective of DSC missions.

The original intent of the second focus group was to present the revised model, further refine if needed, and validate the proposed DSC2M2 to the expected standards, goals, practices, and process areas required of a successful DSC operation. After speaking with my committee chair about the results of my first focus group, we agreed that I would instead take the same original version of the model presented to the first group to the second focus group for a comparative assessment of the same model. I would then be able to compare two different assessments of the same model to develop a final revised version integrating both focus group comments. With a revised plan in place, I began efforts to coordinate the second focus group.

To expand the perspective on the model by incorporating operationally oriented experience, I coordinated a focus group session with my contact at NORTHCOM. As I was scheduled to attend the Natural Hazards Workshop in Boulder, CO in late June 2014, I felt this would be an ideal time to arrange travel to NORTHCOM's headquarters in Colorado Springs. I was originally scheduled to do the focus group in NORTHCOM during the week of my travel to Boulder. Due to unforeseen scheduling issues, this focus group session had to be postponed. Fortunately, we were able to reschedule the focus group for October 8, 2014 – the same week I was in Colorado Springs presenting research at a conference. Appendix

K also discusses the specific details of this focus group session. Table 7 summarizes each of the two focus groups to include the number of participants, location, and date.

Table 7: Focus Group Summary

Focus Group	# of Participants	Location	Date
OSD HD/ASA	3	Pentagon	29 May 2014
NORTHCOM	3	Colorado Springs	8 Oct 2014
TOTAL	2 Sessions – 6 Participants		

3.7   Data Analysis

The intent of my data analysis was to two-fold. First, I needed to assess the data to develop a comprehensive and systematic review of the events of Hurricane Sandy. This portion of the analysis would help me to develop the case study discussed in Chapter 4. Through this analysis, I was able to build a chorology of the events as well as determine areas of success and shortfalls for discussion in the final chapters of this dissertation. In addition to the case study development, I also had to analyze the data to assist in the development of the DSC2M2. To do this, I had to determine the key process areas and practices – or essential tasks – that are representative of a dual status commander-led operation. I also needed to determine appropriate design architecture to structure these elements in a way that would provide a usable interface for future operations. As I used qualitative methods of data collection, I also used qualitative strategies to perform the data analysis and develop the case study and maturity model components of the dissertation.

The data that I analyzed included interview transcripts, hand written notes, memos, computer-based document notes, military after action reports, and media accounts of the event. After concluding the document review, semi-structured interviews, non-participant observation, and focus group discussions, I began to analyze the data using a variety of techniques intended to identify key themes and commonalities in the data. I used a combined approach integrating both inductive and deductive interpretations of the data to ensure the data assessment and analysis was, to the greatest extent possible, open and unbiased. The two primary methods of analysis used were open and axial coding.

3.7.1 Open Coding

The principal intent of open coding in qualitative research is to promote inquiry and interpretation of the data by analyzing what is or is not significant (Berg and Lune, 2012; Patton, 2002). To do this, researchers generally approach qualitative data systematically and with a defined unit or level of analysis for assessment (words, sentences, paragraphs, etc) (Berg and Lune, 2012). While there are "textbook" methods of coding, according to Berg and Lune (2012) "there is no single best way to code data" (p. 366). Given the breadth and depth of the data collected for this research, I had to develop a method of coding conducive to the unique types of data I had to work with. This required a systematic and methodical approach to analyzing each piece of data in order to both organize and adequately interpret the data collected. I approached the initial open coding process inductively in order to allow the themes and patterns emerge from the data (Patton, 2002). Appendix L contains a more thorough discussion of the specific coding strategies and processes used during the initial open coding phase of my data analysis.

3.7.2 Axial Coding

After completing open coding of the data, I began the process of axial coding. According to Strauss (1987), axial coding involves sorting through coded data in order to identify and group the data into categories for analysis. Axial coding occurs after open coding (Ibid.) and "consists of intensive coding around one category" (Berg and Lune, 2012, p. 367) to help the researcher develop coding frames. Since I needed to code for two specific areas of research in order to develop my findings, I used a deductive approach to axial coding that involved the development of coding frames relevant to the needed material to develop my case study findings and the content of the maturity model. Therefore, I assessed the previously open coded data and subsequently designed a deductive coding scheme in which I coded around an existing framework including successes, failures, and lessons learned of the dual status commander-led response to Hurricane Sandy in New York. Additionally, in order to develop a maturity model that accurately represents a DSC operation, I had an existing model framework in mind in which I needed to identify essential tasks deemed necessary for effective performance. Therefore, I deductively analyzed and coded my data against this pre-existing model framework (Patton, 2002). As such, data related to task performance, recommended actions, and essential tasks became code frame categories during my axial coding process. Appendix L contains a more thorough discussion of the specific coding strategies and processes used during the secondary axial coding phase of my data analysis. Figure 15 is a flowchart depicting the research process used for this dissertation from data collection to analysis.
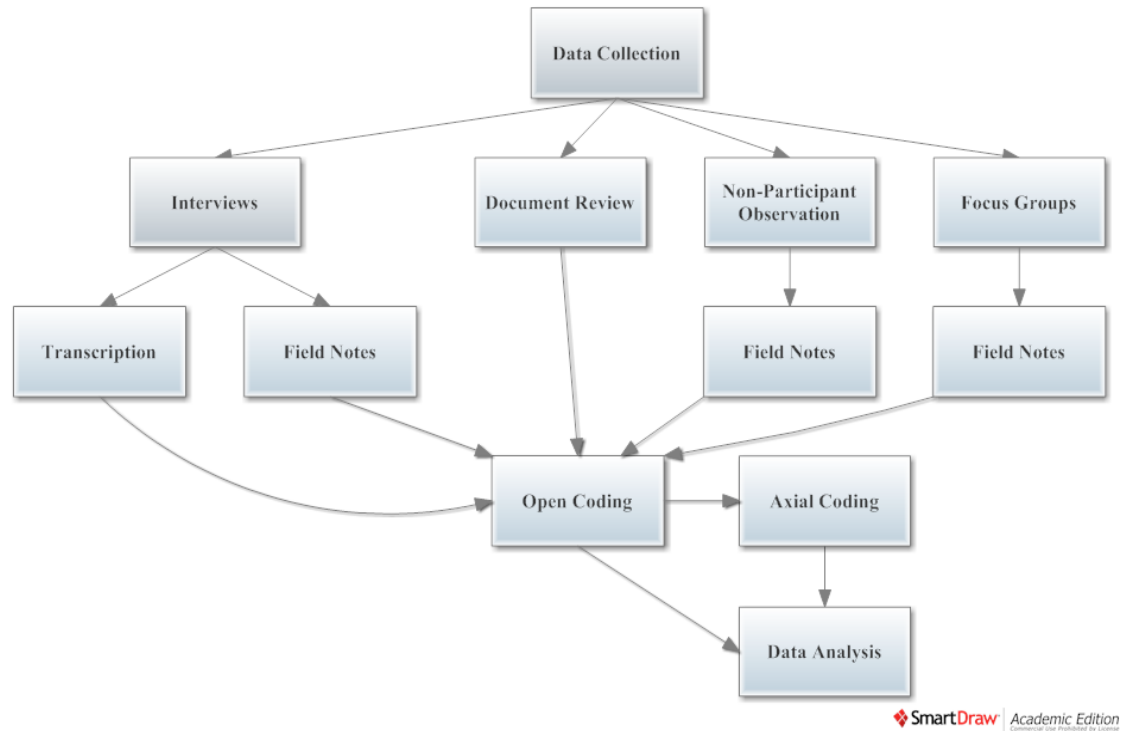
Figure 15: Research Process

3.8   Validity, Reliability, and Limitations

Although the research uses traditional methods of data collection and a rigorous analytical approach to the analysis, it is a qualitative research effort based largely on interpretations of complex data representing human interaction. As Patton (2002) notes, "in lieu of statistical significance, qualitative findings are judged by their substantive significance" (p. 467). While the resulting products of this research are unique, there are limitations of the research leading to questions of validity and reliability.

To mitigate these concerns, I attempted to triangulate the data collected in order to ensure an appropriate variance in the perspectives represented. Additionally,

using a variety of data collection techniques helps to strengthen the perceived quality of my analysis and findings. Further, the interview subjects – while few in numbers – are the principal experts on dual status commander policy, operations, and the events surrounding the military response to Hurricane Sandy. Despite the limited pool of interview subjects due to the specific nature of this study, the data collected absolutely represents perspectives of the most knowledgeable personnel on the subject available. This approach of combining expert knowledge with rigorously applied research methodology supports the perceived credibility of the research. However, there are questions regarding the perceived validity and reliability that must be addressed.

According to Poister (2003), validity refers to "extent to which an indicator is directly related to and representative of the performance dimension of interest" (p. 88). Given this definition, determining direct causal linkage between the essential tasks identified in the DSC2M2 and improved performance cannot be verified without deployment and testing of the model in a controlled experiment. The research meets the description of consensual validity; in that it is validated by multiple expert opinions. However, the final DSC2M2 product falls short of the requirements of correlational validity; or results that have been tested with proven measures (Poister, 2003). Additionally, the appropriateness of the data to the dimension of interest, according to Poister (2003), is a contributing factor when assessing the validity of research data. This data, I argue, maintains a high degree of appropriateness to the research dimension which therefore strengthens the perceived validity.

Reliability, according to Poister (2003), is "a matter of objectivity and precision" (p. 88); or the degree to which results can be repeated through multiple subsequent iterations of the same methodological approach. This research undoubtedly

presents questions of reliability as it is grounded in qualitative interpretation of data and analysis. While the research results may not be repeatable by others with the same precision, the uniqueness of the interpretation and analysis as well as the collection of data from key experts in the field, I argue, strengthens the overall quality and value of the final product despite the questions of data reliability. While the results of both the case study and DSC2M2 may not be exactly the same with a reproduction of this research, the methodological approach can be repeated with precision. The major limitation to this research that reduces the reliability, however, was the inability for me to audio record 80% of my personal interviews.

Since most of my interviews occurred on military bases or in secure, controlled access government facilitates (e.g. the Pentagon), audio recording devices were not permitted in most instances. While I took extensive notes and attempted to capture any and all relevant material during the course of the discussions, no amount of hand written note taking can match the depth of data collected through an audio recording and subsequent transcription. This presents an obvious limitation in the research. However, given the nature of the topic and the need to speak with personnel about sensitive material and in limited access facilities often requiring a security clearance, there was no option to record these conversations. So, while this was a notable limitation of the research, the only other option was to abandon the effort all together and pursue a less restrictive research project.

Chapter 4

HURRICANE SANDY CASE STUDY

Hurricane Sandy was the largest and most damaging Atlantic Hurricane on record and was the second most costly in U.S. history eclipsed only by Hurricane Katrina (Blake, Kimberlain, Berg, Cangialosi, and Beven, 2013).[9] At the peak of the military response to Hurricane Sandy in New York, a joint force of over 4,000 Soldiers, Sailors, Airmen, Marines, and National Guard personnel were engaged in supporting civil authorities as part of Joint Task Force Sandy. Most of our substantive post-Sandy knowledge is found in various Department of Defense (DoD) after action reports and lessons learned publications.[10] Beyond DoD publications and a small body of news reports, there is a dearth of knowledge to date specifically analyzing the DoD response to Hurricane Sandy available for public consumption. Further, this particular DSCA response marked the historic first-time use of a dual status commander to simultaneously command both federal and state military forces in support of a no-notice/limited-notice incident. Owing to the newness of the concept and because it had not been used in an actual disaster before Sandy, this case study illustrates a range of

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[9] Referenced source located at *www.nhc.noaa.gov/data/tcr/AL182012_Sandy.pdf*

[10] DoD generated more than 10 after action reports specifically addressing the response to Hurricane Sandy. The Office of the Secretary of Defense, NORTHCOM, the U.S. Marine Corps, Naval Warfare Development Command, Joint Task Force-Sandy, Joint Task Force-Civil Support, and others developed and published individual reports made available to me for assistance with this research.

perspectives among DoD and state personnel; some advocating for and supporting the concept, others noting the concept's limitations and challenges. Regardless of position, it is clear that the dual status commander arrangement has several benefits and limitations when applied to a no-notice/limited-notice DSCA response environment. This case study analyzes the dual status commander-led DSCA response to Hurricane Sandy in New York. Through this lens, the study illustrates and discusses the perspectives of the dual status commander construct and provides a contextual basis for the recommendations in Chapter 7.

Less than a year after its adoption in the 2012 NDAA as the usual and customary command arrangement for significant disaster response efforts, the dual status commander concept was tested as Hurricane Sandy made landfall along the coast of New Jersey. As noted, the military response to Hurricane Sandy in New York was the first time a dual status commander commanded both federal military and state National Guard forces during a no-notice/limited-notice response operation. As such, the events of this storm provide a timely and relevant opportunity to examine the use of the dual status commander construct and learn from the successes and shortfalls of this particular operation.

This case study examines the use of the dual status commander arrangement in response to Hurricane Sandy in New York. To complete this effort, I employed a rigorous case study investigation emphasizing the combined state and federal response to Hurricane Sandy in the New York City metropolitan area from October 22 – November 15, 2012. The research examines the events of the storm response under the command of Brigadier General (BG) Michael Swezey, the designated dual status commander for the storm response in New York. It combines personal interviews with

extensive document analysis to form the substance of the analysis and recommendations contained in Chapter 7. In performing this research, I was fortunate to interview several high-ranking civilian and military officials with practical and relevant knowledge of both the evolving dual status commander conversation and the Hurricane Sandy response effort in New York. In addition to reviewing over 1,000 pages of material relevant to dual status commanders and Hurricane Sandy, I conducted 20 individual interviews and two focus groups with civilian and military personnel representing the Office of the Secretary of Defense (OSD), United States Northern Command (NORTHCOM), the National Guard (NG), and federal Armed Forces.

The case study represents a broad range of perspectives within state and federal government and offers one of the most comprehensive and detailed studies on Hurricane Sandy and the dual status commander construct to date. In order to fully understand the complexities involved with not only the tactical decision making but the political influences as well, it is necessary to understand the distinctly different geo-political makeup of the New York City. Therefore, the study begins with an overview of the unique geo-political landscape present in the New York metropolitan area. From here, I divide the event chronology into five time phases for individual discussions. The discussion starts with an evaluation of the preparations undertaken by the federal government the week prior to the storm's landfall. It continues with a presentation of selected noteworthy events from the remaining two weeks of the military response. The chronology provides a basis for the subsequent section of analysis of the post-event lessons learned.

The last substantive section of the case study, Post-Event Lesson Learned, offers a categorical summation of several research-based observations gleaned from the analysis of this event. Here, I discuss successes related to coordination, the use and distribution of liaison officers, and the aggressive, forward-leaning approach used by DoD to prepare for and respond in the aftermath of the storm. I also address some of the notable shortfalls from the event. Based on the interviews and data collected, the shortfalls discussed include issues related to process integrity and command structure, lack of Title 10 awareness with regard to the dual status commander construct, misunderstandings of the mission assignment process, lack of relevant education for officers, and an overall lack of dual status commander guidance or formal instruction. These lessons learned serve as the foundation for the discussion in Chapter 7 outlining the separate recommendations for future consideration based on the external analysis of the military response to Hurricane Sandy in New York under the dual status commander construct.

Parts of this chapter are also contained in a monograph written for and funded through the External Research Associates Program (ERAP) at the Strategic Studies Institute (SSI) of the U.S. Army War College under contract #W911S0-13-P-085. As such, parts of this chapter have been reviewed and previously published as "Towards a Unified Military Response: Hurricane Sandy and the Dual Status Commander," (Burke and McNeil, 2015a).

4.1   Case Study Context

In October 2012, Hurricane Sandy came ashore along one of the most densely populated regions in the country. Even though Sandy was downgraded to tropical storm status prior to landfall, it was a massive storm that effected east coast cities from

Washington, D.C. to New York City. As was the case with Katrina, the storm's magnitude overwhelmed state and local responders. Requests for military support were widespread, resulting in an over-convergence of military forces inside the region within days of the storm's arrival. Again like Katrina, National Guard forces in State Active Duty (SAD) status operated alongside Title 10 federal forces in support of civil authorities responding to the storm's damage. Unlike Katrina, however, this DSCA response effort was a historical first for the U.S. military. For the first time, state National Guard and federal military forces executed unplanned civil support operations under the tactical command of dual status commanders.

In addition to being the first no-notice/limited-notice operation to combine state National Guard and federal military forces under the command of a single dual status commander, a complex endeavor in its own right, several additional factors further complicated the Hurricane Sandy response effort. While the storm made landfall nearly 100 miles south of New York City, the leading northern edge of the storm – often the strongest part of a hurricane – directly affected New York City, its surrounding boroughs, and parts of northern New Jersey. This ultimately resulted in a multi-state incident spread across a large area of some of the most densely populated counties in the United States. But perhaps the most significant complication, as it turns out, was the storm's unprecedented timing. The 2012 presidential election was set to take place nearly a week to the day following the storm's landfall. As we have seen with past disasters and emergencies, such events can serve as a serious political setback for elected officials; or as an opportunity to exercise leadership in a way that builds political support for elected state and federal executives. The unique political landscape at the time of the storm presented yet another challenge for the military

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response that would ultimately generate significant influence on the actual conduct of response operations.

4.2 The Military Response to Hurricane Sandy

The following sections offer a brief chronological description of the events of Hurricane Sandy under Joint Task Force Sandy in New York from October 22 – November 15, 2012. This discussion is limited to the events surrounding the dual status commander arrangement and any associated circumstances or considerations. To provide context, the discussion begins with a review of the unique geo-political environment in the New York metropolitan area. The events are then grouped into five similarly named categories representing a defined date range:

- Shaping and Anticipation: October 22 – 29
- Initial Response: October 30 – November 2
- Continued Operations: November 3 – 5
- Stabilizing Operations: November 6 – 9
- Transition Operations: November 10 -15

These categories align with existing DoD reference publications detailing DSCA response phases. Also to provide context, Figure 16 provides maps of the study area and snapshots of the military presence in three periods: October 30 – November 2; November 3 – 5; and November 6 – 9. The placement of unit symbols within the counties (circles for National Guard and pentagons for federal military) is not representative of their actual locations during the response. If military activities occurred in a particular county during the defined date ranges, I placed a single unit graphic near the center of the county in order to illustrate a force presence. Force strength numbers for federal forces involved in the Sandy response were either inconsistent or unavailable. I did not scale the unit graphics for federal forces as a

result. Consistent National Guard force strength estimates, however, were available via daily DoD press briefings detailing the ongoing storm response. The circles representing National Guard forces are scaled in size according to the average daily force strength estimates provided for the New York metropolitan area:

- October 30 – November 2: approximately 2,300 Guardsmen
- November 3 – 5: approximately 3,200 Guardsmen
- November 6 – 9: approximately 4,100 Guardsmen
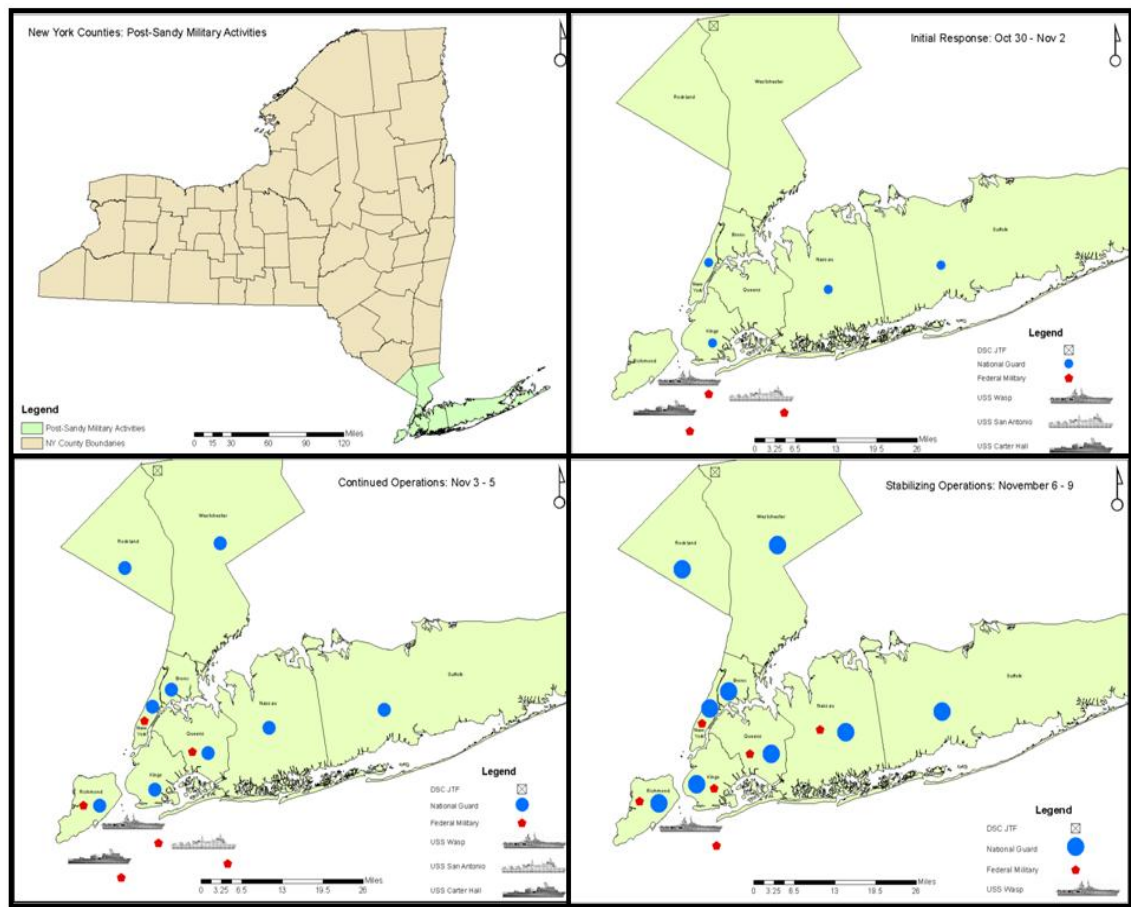
Figure 16: Hurricane Sandy Military Activities

4.3 New York's Geo-Political Landscape

Hurricane Sandy's near-direct hit on the most populated city in the United States[11] and the financial center of our economy less than one week prior to a presidential election was unprecedented; a coincidence noted by multiple interviewees.[12] In addition to the timing of the storm's landfall, the ensuing state and federal response was largely influenced by the region's unique geo-political structure. Given this fact, it is important to understand the organizational context of the response by discussing some of the complexities within the system of government in and around New York City.

New York is a home-rule state. Therefore, local municipalities below the state level can, with some restrictions, create and enact laws and govern themselves as they see fit without state legislature approval. As a city municipality, New York City is no exception to this rule. Where New York City differs is in the unique structure of its governmental leadership within its five boroughs (Manhattan, Brooklyn, Queens, Bronx, and Staten Island). Each of the five boroughs, all of which maintain separate state county distinctions (New York, Kings, Queens, Bronx, and Richmond counties, respectively), is represented by a Borough President rather than a county seat. The Borough Presidents are elected officials and interact directly with the Mayor of New

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[11] See "Annual Estimates of Resident Population for Incorporated Places of 50,000 or More, Ranked by July 1, 2013 Population: April 1, 2010 to July 1, 2013 – United States – Places over 50,000 Population," *factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk, for details.*

[12] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

York City, who serves as the representative of all five counties. In addition, the Port Authority of New York and New Jersey operates each of the airports, bridges, maritime ports, and ground transportation terminals in the New York City metropolitan area, including property in New Jersey. The complexities of the transportation network and commuting patterns within the New York metropolitan area, coupled with the diversity of its local commerce, further complicates city management functions. Adding to the confusion is the influence of and interactions with the counties surrounding New York City's boroughs to the north (Essex, West Chester, and Rockland) and on Long Island to the east (Nassau and Suffolk). This layered bureaucracy creates complexity in the simplest of government activities and is often influenced by state versus local politics, and in some cases, personality conflicts. Beyond this, state and federal politics do not function the way a military command structure functions. Whereas the military uses an extensive hierarchical system of command delineation, civilian leaders operate under local and state jurisdictions. Therefore, the Governor cannot dictate orders to city mayors just as the President cannot dictate orders to a state Governor. Coordinating a regional response effort incorporating town, borough, county, state, and federal entities across a divided geo-political landscape can prove a daunting task. As suggested by multiple interviewees, the timing of Sandy's landfall prior to the upcoming presidential election, combined with New York City's unique geo-political environment, may have prompted more aggressive involvement by the federal government and had a significant influence on the conduct of the joint state and federal military response activities.[13] Figure 17 presents a timeline of events and activities that also provide context for the case study.

[13] *Ibid*.

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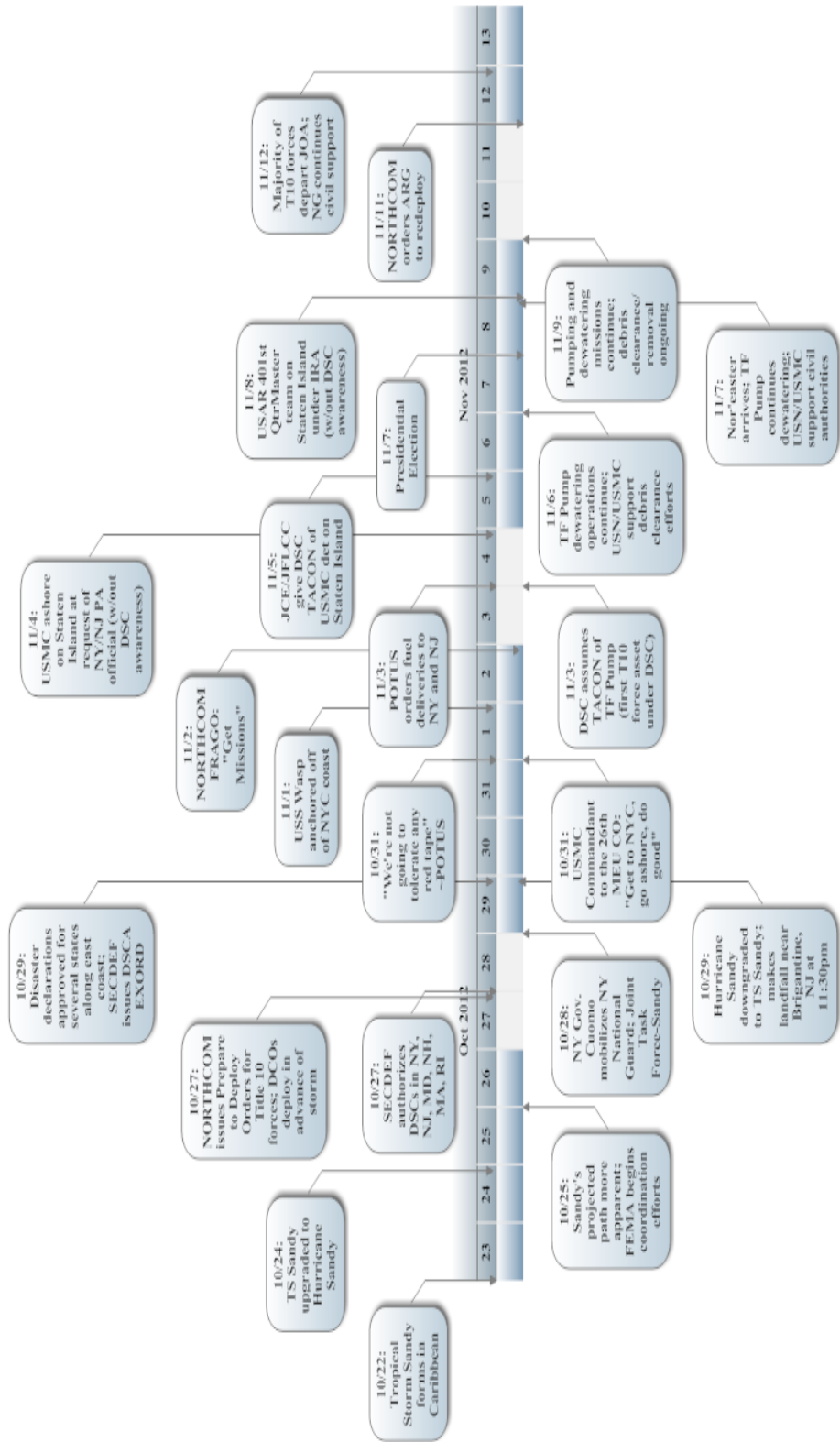
Figure 17: Sandy Event Timeline

4.4   Shaping and Anticipation

The 2012 Atlantic hurricane season was a particularly active one, with 19 named storms, 10 of which became hurricanes.[14] On October 22, 2012, the 18th tropical depression of the season formed over the southwestern Caribbean Sea and quickly strengthened into Tropical Storm Sandy late that day. On October 24, less than two days after its initial formation, Tropical Storm Sandy was upgraded to Hurricane Sandy near Kingston, Jamaica.[15] A day later, on October 25, Hurricane Sandy's projected path had become more apparent. As a result, the federal government, led by the Federal Emergency Management Agency (FEMA), began coordinating with several states in the mid-Atlantic region likely to be impacted by Sandy in the coming days. With the growing likelihood of a significant event unfolding, DoD, through NORTHCOM, issued deployment preparation orders for pending DSCA operations on October 27.[16] Shortly thereafter, NORTHCOM deployed multiple Defense Coordinating Officers (DCOs)[17] to FEMA regions 1 (New England), 2 (Northeast), and 3 (Mid-Atlantic) to assist in future DoD resource coordination efforts. While DoD

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[14] See "2012 Atlantic Hurricane Season," *www.nhc.noaa.gov/data/tcr/summary_atlc_2012.pdf*, for details.

[15] *Ibid*., p. 4.

[16] See "The Department of Defense Prepares for Hurricane Sandy" (Release No: 854-12, October 27, 2012), *www.defense.gov/releases/release.aspx?releaseid=15646,* for details.

[17] A Defense Coordinating Officer (DCO) is a single point of contact for domestic emergencies that is assigned to a joint field office to process requirements for military support, forward mission assignments through proper channels to the appropriate military organizations, and assign military liaisons, as appropriate, to activated emergency support functions (Department of Defense, 2014a, p. 67).

coordinated its preparations, Connecticut, Massachusetts, New York, Pennsylvania, New Jersey, Delaware, and Virginia each activated National Guard troops in their states. Over a period of six days, states and the federal government went from routine operations to a heightened state of alert in preparation for the arrival of this historic storm.

As the storm approached the coast on October 28, President Obama signed Stafford Act emergency declarations for Connecticut, Washington D.C., Maryland, Massachusetts, New Jersey, and New York. Over the next 24 hours, Hurricane Sandy weakened from a category 1 hurricane to a tropical storm. The storm made landfall slightly north of Atlantic City near Brigantine, NJ at approximately 11:30 p.m. on October 29, 2012.[18] That same day, President Obama signed additional disaster declarations for Delaware, Rhode Island, and Pennsylvania; and declared major disaster areas in New Jersey and New York following massive storm surges along each coast. With the new disaster declarations approved, the Secretary of Defense (SECDEF), through the Chairman of the Joint Chiefs of Staff (CJCS), issued a standing execution order (EXORD) directing NORTHCOM to provide direct support to FEMA in the affected states.[19] These preparations began the unprecedented combined state and federal military response under the dual status commander arrangement.

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[18] See 2012 Atlantic Hurricane Season, *www.nhc.noaa.gov/data/tcr/summary_atlc_2012.pdf*, p. 4, for details

[19] See Hurricane Sandy: Timeline, *www.fema.gov/hurricane-sandy-timeline*, for details.

Owing to the Joint Action Plan and 2012 NDAA, state governors had the

option to request a dual status commander for the pending DSCA response.

Ultimately, six states received authorization to employ a DSC: New York, New

Jersey, Maryland, New Hampshire, Massachusetts, and Rhode Island. Of the six states

receiving DSC authorizations, only two – New York and New Jersey – actually

activated a DSC to lead the military response efforts.[20] While the military response in

New Jersey under Brigadier General Bud Grant did receive both state National Guard

and federal military forces, this response effort was neither as geographically or

politically complex as the New York response nor did it experience the challenges

noted in the DSC-led response in New York. For these reasons, the DSC-led response

in New York under Joint Task Force Sandy commanded by Brigadier General Michael

Swezey is the primary focus of this case study.

4.5   Initial Response

As this was the first ever use of dual status commanders during a no-

notice/limited-notice incident combining state and federal response forces, Hurricane

Sandy was, undeniably, an event of national and historic significance. In addition to

the significance of the military response, Sandy also led to the first two-day closure of

the New York Stock Exchange since 1888 (Blake et al., 2013). The storm also

precipitated only the second mandatory evacuation ever issued for low-lying parts of

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[20] Interviews with various DoD employees, January – March 2014.; See also "The
Department of Defense Prepares for Hurricane Sandy" (Release No: 854-12, October
27, 2012), *www.defense.gov/releases/release.aspx?releaseid=15646*, for details.

New York City. In total, 375,000 people were ordered to evacuate prior to the storm.[21] Post-storm assessments suggest that over 305,000 homes were destroyed in New York; most of which were located along major coast lines and subjected to storm surge (Blake et al., 2013). The storm surge also flooded an estimated 2,700 homes and businesses in the city (Gibbs and Holloway, 2013) and rendered more than 2,000 homes on Long Island uninhabitable (Blake et al., 2013). The storm disrupted power to more than 1.5 million New York City residents and killed 43 people statewide (Gibbs and Holloway, 2013). In total, New York experienced an estimated $19 billion dollars in damages, including $5 billion for the transportation system alone (Blake et al., 2013). The storm had a profound effect on the New York metropolitan area that ultimately led to a large military response. The events that followed during the two-week military response to the storm provide us with several relevant topics to consider as we attempt to improve future dual status commander-led DSCA response efforts.

In the first days following Hurricane Sandy's landfall, the DoD took a proactive, if not aggressive, forward-leaning approach in its response efforts. In anticipation of the need for military support, Governor Cuomo requested a dual status commander through the Office of the Assistant Secretary of Defense for Homeland Defense and America's Security Affairs (HD/ASA). Following this request and routing through the various approving authorities,[22] the decision was made to establish

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[21] See "Mayor Bloomberg issues order for mandatory evacuation of low-lying areas as Hurricane Sandy approaches," *www1.nyc.gov/office-of-the-mayor/news/377-12/mayor-bloomberg-issues-order-mandatory-evacuation-low-lying-areas-hurricane-sandy*.

[22] See "Dual Status Commander Designation Process – Governor Requested" flow chart in Appendix E.

a dual status commander-led Joint Task Force in New York to coordinate the military response within the state. In addition, members of Joint Task Force – Civil Support (JTF-CS), commanded by Major General (MG) Jeff Mathis, deployed to Joint Base McGuire-Dix-Lakehurst (JBMDL) in New Jersey to coordinate the multi-state response effort as part of the Joint Coordinating Element (JCE). As the Commanding General (CG) of this detachment, MG Mathis served as the JCE to the Joint Force Land Component Commander (JFLCC), Lieutenant General (LTG) James Caldwell of U.S. Army North (ARNORTH). In his capacity as the JFLCC JCE, MG Mathis coordinated Title 10 activities between the DSCs in NY and NJ and ARNORTH. As the ARNORTH CG, LTG Caldwell reported directly to General Charles Jacoby, Commanding General of NORTHCOM, who subsequently reported to the Secretary of Defense, through the Joint Chiefs of Staff, and ultimately to the President. On the state side, BG Swezey, the appointed dual status commander, reported to MG Patrick Murphy, The Adjutant General (TAG) for New York. As the NY TAG, MG Murphy reported directly to Governor Cuomo and represented the state's military decision-making authority (Figure 18).

Command & *Coordination*
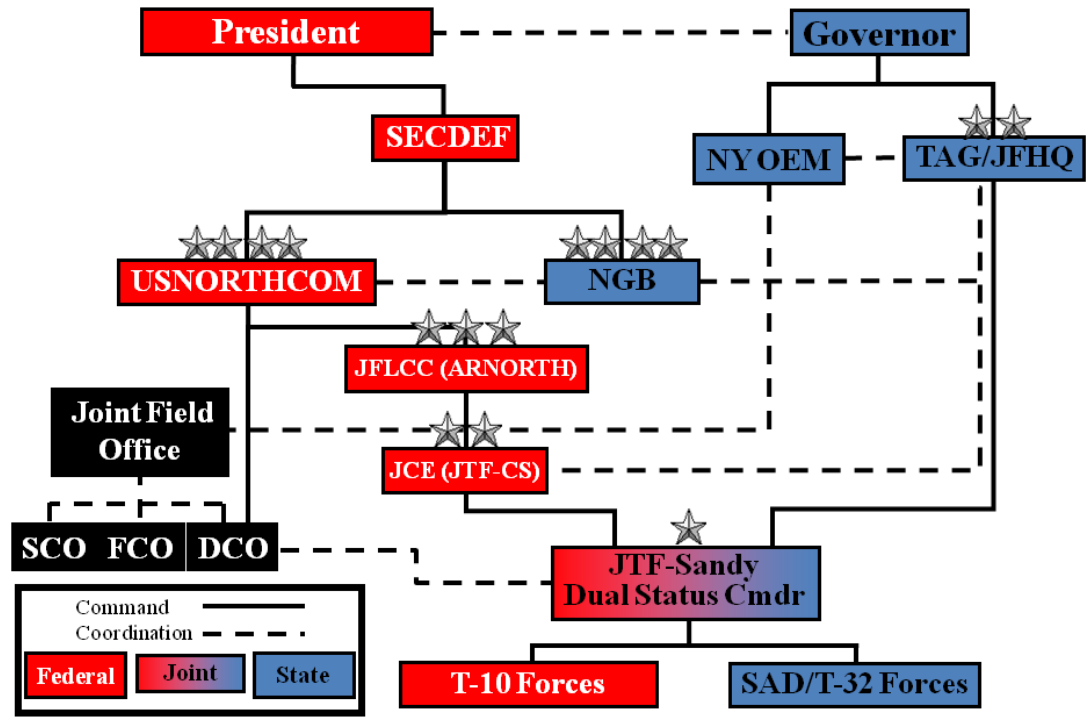
Figure 18: Sandy Command Structure

Within two days of Hurricane Sandy making landfall in Brigantine, NJ, the command structure had been established, and military assets from around the United States deployed to Joint Base McGuire-Dix-Lakehurst in New Jersey. An Amphibious Ready Group (ARG) comprised of three U.S. Navy (USN) ships (USS Wasp, USS Carter Hall, USS San Antonio) sortied from Norfolk Naval Station towards the New York harbor as part of routine hurricane avoidance maneuvers. The USS Wasp was the first to arrive and was anchored off the New York City coast on November 1. A reduced force contingent of the 26th Marine Expeditionary Unit (MEU) would arrive

aboard the USS Wasp shortly thereafter. The USS San Antonio and Carter Hall arrived a day later on November 2. Meanwhile, personnel from the Office of the Secretary of Defense were engaged in administrative oversight of the response while the Defense Logistics Agency (DLA), with the help of U.S. Transportation Command (TRANSCOM), began sourcing and transporting supplies to affected areas. The U.S. Army Corps of Engineers (USACE), as the lead federal agency for National Response Framework (NRF) Emergency Support Function (ESF) 3 – Public Works and Engineering, was also heavily involved in the early stages of the response. Further, NORTHCOM, the National Guard Bureau (NGB), the Joint Chiefs of Staff, and other mission-critical DoD entities actively coordinated with FEMA as well as state and local authorities throughout the Mid-Atlantic region in an effort to get ahead of the storm response and provide support. This "go big, go early, go fast" approach[23] employed by DoD during the response to Hurricane Sandy would ultimately influence the remainder of the operation and provide us with several opportunities for lessons learned toward improving such complex operations in the future. Additionally, the national significance of the storm on the financial center of the U.S. economy less than a week before the 2012 presidential election prompted an increased sense of urgency from the federal government.

> "We're not going to tolerate any red tape. We're not going to tolerate
> any bureaucracy." ~ President Barack Obama, October 31, 2012[24]

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[23] Interviews with various DoD employees, January – March 2014.

[24] See "Obama, Christie Tour Hurricane Ravaged NJ," *www.msnbc.com/the-last-word/obama-gov*. Quote from the President's address to residents of Atlantic City two days after the storm's landfall.

In hierarchical organizations, public statements from senior leaders and executives can greatly influence the actions of subordinates, regardless of whether such statements comply with organizational policies. In these "policy-by-speech" moments, such comments can be interpreted as standing guidance for future actions. President Obama's comment after Sandy's landfall is no exception. In this case, red tape and bureaucracy can be found in national disaster guidance documents such as the National Response Framework (NRF) and National Incident Management System (NIMS). When the President publicly states that red tape and bureaucracy will not be tolerated, such guidance tends to be ignored or circumvented in order to make things happen in the most expeditious manner possible. The Administration's encouragement to abandon established strategies and policies during the conduct of a domestic military response is problematic. Operational strategies guide tactical decision making and are designed to accomplish a given mission in accordance with the rule of law. DoD conducts military operations in accordance with clearly established strategies and associated tactics. The military needs to know its mission but it also needs to know the rules. Encouraging noncompliance leads to messy, chaotic, and inefficient operations. In some cases, this is precisely what we saw during the military response in New York. The NRF, NIMS, and other such guiding documents and processes are not law. However, departing from the traditional forms of instruction tends to create additional problems as orders and missions begin to fall outside of established guidelines for conducting domestic response. In essence, these policy-by-speech moments, well intentioned as they may be, sometimes serve the opposite intent and introduce greater confusion and/or challenges in the response.

While this is not an indictment of the President, it is also not an endorsement of the NRF and its associated guidance. National disaster response guidance is robust and detailed. Following such guidance can often be counter-productive during disasters and emergencies. However, federal disaster response is complex, so there is a reason for such formal guidance. Aggressive, mission-oriented decision making by military commanders stimulated by the White House and reaffirmed by senior DoD leadership can accelerate the sometimes mechanistic response process, often leading to more effective deployment and support operations. However, this accelerated disregard for policies, procedures, and in some cases laws, sometimes comes at the expense of unity of effort, sacrificing the principal focus for any combined state-federal response under the dual status commander construct.

Despite the challenges noted above, military commanders and the National Guard successfully navigated the geo-political landscape of New York City. In the early stages of the military response in New York, National Guard troops conducted operations in Manhattan as well as Nassau, Kings, and Suffolk counties. New York-based National Guard units established supply points of distribution, executed search and rescue missions, assisted in resident evacuations, and supported local law enforcement by conducting security and presence patrols in areas affected by the storm.[25] In addition to coordinating the myriad initial response efforts spread across Manhattan and several surrounding counties and boroughs, personnel assigned to JTF Sandy were busy setting up an operational command center and establishing a routine

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[25] Interviews with various National Guard officers who participated in the Joint Task Force Sandy response effort, February 2014.

for the coming days' efforts. By most accounts, the first days of the JTF Sandy response were largely effective and free of any noteworthy challenges.

As the days passed, effects of the storm compounded. Three days into the combined state and federal response, power outages still plagued areas within the five boroughs; flooding from the recent storm surge continued to hamper restoration and recovery efforts; fuel shortages led to increasing lines at area gas stations. As a result of these cascading effects, the likely influence of expanding media coverage of the storm's impacts in and around New York City, and the President's "no red tape" speech, new guidance was issued from DoD leadership to begin integrating federal military forces into the response effort. This guidance, according to sources knowledgeable on the matter,[26] was relayed from the highest levels of DoD to NORTHCOM commanders, down to the tactically focused Title 10 commanders specifically directing them to:

- Get missions
- Do not wait for mission assignment paperwork
- Apply total force capabilities to accomplish missions
- When you get a mission: execute. Clean up paperwork later[27]

This external pressure to integrate Title 10 force activity into the Sandy response, despite a lack of formal requests by New York authorities at the time, would

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[26] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

[27] Copied material from NORTHCOM guidance (fragmentary order) of November 2.

contribute to some of the most significant activities during the entire storm response days later.

4.6   Continued Operations

Nearly a week after Sandy's initial landfall, the storm's effects were becoming more apparent. Despite a range of ongoing response activities throughout the metropolitan area, there were still unmet needs noted by local officials and first responders.[28] As news media coverage grew, it contributed to the external pressures faced by the JTF Sandy staff to expand military response activities by involving prepositioned federal forces. The events of November 3 – 5 are among the most notable and regularly debated of the two-week response operation.

4.6.1   November 3

By November 3, National Guard forces operating in New York under BG Swezey were performing a range of missions in four of the five New York City boroughs, as well as four additional counties north of the city and on Long Island. While the National Guard force in New York had demonstrated its ability to meet initial requirements, there was no way to accurately predict future requirements and needed capabilities. With several Title 10 assets pre-staged at McGuire-Dix-Lakehurst and pressure to integrate federal forces mounting, the DSC found himself in a unique position that required balancing political influence, operational requirements, financial

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[28] Interview with a National Guard officer that participated in the response to Hurricane Sandy, February 2014

considerations, and legal nuances in order to determine the most efficient and effective manner to respond to a growing need.

On the morning of November 3, flooding from Sandy's storm surge continued to present significant challenges for storm responders. In addition, there were widespread fuel shortages due to the ongoing power outages. With four days remaining before the election, national news media coverage regularly broadcast footage of lengthy lines of those waiting for gasoline at area stations.[29] That morning, the White House, without consent of the states, issued an executive order for the Defense Logistics Agency to begin transport and distribution of fuel in both New York and New Jersey.[30] As a result of this new order and the increasing external pressure to involve Title 10 forces, BG Swezey considered deploying a contingent of active duty forces to assist in dewatering operations in area subways as well as increasing fuel distribution in the surrounding boroughs.[31] Prior to requesting Title 10 force support and becoming the first DSC to assume command and control of federal military and state National Guard forces for a no-notice/limited-notice incident, BG Swezey had to weigh several considerations, not the least of which were the politics influencing the response.

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[29] See "A Slow Return to Normal Skips the Gas Station," *www.nytimes.com/2012/11/04/nyregion/gas-rationing-is-new-burden-after-hurricane-sandy.html?_r=0,* for details.

[30] Interview with a National Guard officer that participated in the response to Hurricane Sandy, February 2014

[31] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

According to doctrine, Title 10 forces should only be considered during domestic response when local and state capacities have been overwhelmed; or when civil authorities are otherwise incapable of performing the necessary mission (Department of Defense, 2013a, p. viii-ix) – in this case pumping thousands of gallons of water out of subways and other flooded facilities and distributing fuel via military transport. Largely due to costs associated with using Title 10 assets, as well as the infringement on state sovereignty, federal forces, at least doctrinally, operate on a "last in, first out" philosophy in these situations. As a result, there is redundancy built into the state emergency response process. One form of redundancy regularly used during disaster response is the Emergency Management Assistance Compact (EMAC). Under EMAC, states can request additional support (such as National Guard forces) from surrounding states to assist in incident response operations within their state.[32] In order for the DSC to request support from Title 10 forces, standing state-to-state EMAC agreements should be fully implemented. However, it is often left to the governor's subjective assessment to determine the point at which EMAC agreements are no longer an option and DSCA is a requirement. Therefore, it is difficult to clearly define the appropriate trigger for requesting DSCA. This can be problematic for several reasons.

According to some, requesting Title 10 force support prior to exhausting all EMAC options carries strategic implications for the National Guard.[33] If, instead of

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[32] See "What is EMAC?" *www.emacweb.org/index.php?limitstart=0.*

[33] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

using an EMAC to request additional National Guard troops, Title 10 forces deploy to support state operations, the resulting public perception of the National Guard may be one of ineptitude. Such perceptions can strain the relationships between the DSC (who is most often a National Guard officer) and TAG (also a National Guard officer and appointed by the Governor in most states). While these are political and policy issues, they can and do influence the conduct of DSCA operations. As we saw during Sandy, the DSC had to balance the political desires of elected officials with the necessity of mission accomplishment. As a commander with two distinct chains of command, the DSC must balance both state and federal responsibilities in a way that facilitates efficient and effective tactical leadership.

With the political implications aside, EMAC requests for additional National Guard forces carry other logical considerations. Since National Guard personnel are civilians first, many have jobs outside of their role in the Guard. To justify a request for activating more Guard personnel, there must be missions to fulfill. Otherwise, activating civilian Guardsmen to wait idly by not only interrupts occupational continuity, but is also a waste of taxpayer money. During the early response to Sandy, the DSC knew he had Title 10 forces at JBMDL ready to support the response operation if requested. With the experiences of Katrina in mind, no one at the state or federal level wanted to be late to respond or be short on resources. Owing to these issues and in addition to the state of operations on the morning of November 3, BG Swezey, with the support of both state and federal chains of command, made the decision to deploy Title 10 forces to assist in dewatering operations in New York City. At 11:28 a.m. on November 3, 2012, BG Swezey became the first dual status commander in U.S. history to assume tactical control (TACON) of Title 10 forces

during a no-notice/limited-notice DSCA response.[34] On this day, a joint force of Army, Navy, Air Force, and Marine Corps personnel assigned to the 19th Engineer Battalion in Fort Knox, KY deployed to the area as part of Task Force (TF) Pump and began dewatering operations under the command of the DSC and Joint Task Force Sandy.

4.6.2   November 4

Less than a day removed from the successful coordination and first-time deployment of Title 10 forces under a DSC-led no-notice/limited-notice DSCA response, the dual status commander was unaware of a Title 10 force operation ashore on Staten Island. By the evening briefing, what was at the time a successfully coordinated operation experienced its first and perhaps most significant coordination challenge of the entire Sandy response effort.

The events of November 4 have been addressed in numerous after-action reports and post-Sandy analyses of the DSCA response. According to these sources, BG Swezey was made aware of the fact that U.S. Marines assigned to the 26th Marine Expeditionary Unit (MEU) and aboard the USS Wasp off the coast of Breezy Point, NY came ashore on Staten Island in order to support local authorities. What we do not know is exactly how the Marines were requested to support civil authorities or who generated the request. While the circumstances leading to the Marine Corps' arrival on Staten Island remain in question, one thing is for certain: the dual status commander did not request Title 10 forces to come ashore on November 4, nor was he aware of

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[34] Interview with a National Guard officer that participated in the response to Hurricane Sandy, February 2014.

the Marines' activities until long after they had arrived. The events of this day provide us with perhaps the single most valuable example of confusion and, consequently, opportunities for lessons learned from the entire Sandy response.

Upon learning of the Marines' landing on Staten Island, the DSC contacted his state and federal chain of command to inquire about the mission request and authorization, or lack thereof. According to sources knowledgeable on the situation, none of the General Officers within the state or federal chains of command were aware of the U.S. Marine Corps (USMC) mission on Staten Island or knew who authorized the landing.[35] Fearing the perceived violation of state sovereignty as a result of a federal military force operating ashore without the governor's request or approval, the DSC requested that the Marines on Staten Island cease all operations and return to the ship. Since neither the DSC nor the Governor formally requested the Marines' assistance, nor were any of the military commanders aware of the circumstances leading to the Marines' activities, it was thought at the time that this would set a bad precedent for future DSC-led DSCA response efforts. Unless justified under Immediate Response Authority, per DOD Directive 3025.18, some suggested that an unauthorized Title 10 operation would question the efficacy of the newly agreed upon dual status commander architecture for no-notice/limited-notice response scenarios. Due to the concerns voiced by members of JTF Sandy, NORTHCOM issued guidance on the evening of November 4 to halt all Title 10 activities outside of the DSC's awareness (United States Fleet Forces Command, 2013). While some

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[35] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

voiced their concerns over the Title 10 presence on Staten Island, others praised the decision to bring Marines ashore. Regardless of position, the next challenge for the DSC was determining how and why the Marines were requested to come ashore and then, since they were ashore and capable of assisting, determining how to best use their force capability to help the citizens of New York.

4.6.3   November 5

With operations continuing overnight and into the morning of November 5, the Marine Corps presence on Staten Island remained a primary focus of the DSC and other senior leaders. Other than operating under Immediate Response Authority (IRA), there is a lengthy and often arduous request process governing how Title 10 forces receive and fill mission assignments to support civil authorities. Given the questionable circumstances of the Marines' arrival – particularly if said arrival was not justified under IRA – it seems that the Request For Assistance (RFA) process was not followed. Despite this, the Marines were still ashore and actively involved in debris clearance and other assistance activities. After discussing options with the TAG and the JFLCC, the Generals determined that the DSC would assume tactical control of the Marine detachment operating on Staten Island. As the Title 10 JCE to the JFLCC, MG Mathis specified when the Marines were aboard the USS Wasp, they would be under tactical control of the Joint Forces Maritime Component Commander (JFMCC). However, in order to alleviate further confusion, the Marines would operate under the tactical control of the DSC anytime they were ashore. The JFLCC further clarified that all Title 10 forces ashore in New York must have approval and awareness of the DSC moving forward, or must be performing functions under ESF-3 and in direct support of the U.S. Army Corps of Engineers. After clarifying these issues and assuming

tactical control of the Marines in his area of operations, the DSC issued instructive

guidance to the detachment authorizing them to perform debris clearance only; not

debris removal, due to important Stafford Act and associated legal distinctions

between the two terms.[36] Local residents welcomed the Marine Corps presence on

Staten Island while local and national media outlets provided extensive coverage of

the response activities. What started as a significant complication seemingly

undermining the authority of both the Governor and the DSC evolved into a mutually

supportive and beneficial operation between the Title 10 forces and the DSC-led JTF.

Beyond the scope of the USMC activities on Staten Island, the remaining

operations on November 5 consisted mainly of dewatering missions under TF Pump in

the Rockaways and Manhattan. These missions continued into the evening of

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[36] Sections 403(a)(3)(A), 407, and 502(a)(5) of the Robert T. Stafford Disaster Relief
and Emergency Assistance Act (Stafford Act) specify conditions when the President
may authorize federal agencies to conduct debris removal, or reimburse private
contractors for such services using a 75/25 federal/state cost share, respectively. Under
42 U.S.C. § 5107b(a)(3)(A), federal agencies may, at the direction of the President,
provide assistance to save lives and protect property, including reimbursement for
debris removal services. 42 U.S.C. § 5173, supported by 42 U.S.C. § 5192(a)(5),
specifies that federal agencies can conduct debris *clearance* ((a)(1)), and authorizes
private contractors to conduct debris *removal* ((a)(2)). Due to these provisions, the
DSC chose to authorize Marines to engage in debris clearance activities only. Also of
note: Prior to October 27, 2012, 44 CFR 206.228(a)(2) – Force Account Labor – did
not permit reimbursement of straight or regular time salary costs for contractors
performing debris removal under the aforementioned provisions; they were instead
reimbursed at the overtime rate. Following Hurricane Sandy, a retroactive revision to
this law was signed allowing for reimbursement of debris removal activities only at
the regular salaried rate. Debris clearance activities were not included in this revision.
See "FEMA Recovery Fact Sheet 9580.215: Hurricane Sandy: Debris Removal Force
Account Labor Costs," *www.fema.gov/media-library-
data/debris_removal_force_account_labor_costs_fact_sheet__11_5_12_.pdf*, for
details.

November 5 with visibility and approval of the DSC. At the conclusion of the day on November 5, the DSC-led DSCA response in New York under JTF Sandy now had a full contingent of both state National Guard and federal military forces operating throughout. Many of the previously encountered challenges had been resolved, or at least stabilized. The impacts of the military response effort were becoming tangible as time progressed further from initial landfall. The DSCA operation moved into the stability operations phase of the response with a positive outlook for the remaining stability and transition.

4.7 Stabilizing Operations

After the initial stages of the storm response had come to an end, operational tempo began to subside. The events of November 6 – 9 reflect more routine – from a military perspective – disaster response operations, with few noteworthy discussion points.

4.7.1 November 6

On the morning of November 6, the National Weather Service issued nor'easter warnings for a large area in the northeastern United States, including New York City. While both the USS San Antonio and USS Carter Hall vacated the area to avoid the coming storm, the USS Wasp chose to remain at anchor off the coast of the city. With a small detachment of Sailors assisting in dewatering missions on Liberty Island and Marines from the 26th MEU still supporting debris clearance on Staten Island, the ship's captain chose to weather the storm off the Breezy Point coast. With the Navy ships moving out, dewatering operations in support of TF Pump continued across the region under the tactical control of the DSC. Meanwhile outside of the DSC

chain of command, FEMA, the Defense Logistics Agency, the USACE, and US

TRANSCOM continued supporting response operations in affected areas in New York

and New Jersey.[37] As the storm closed in on the New York City area, NORTHCOM

officials issued guidance to all Title 10 forces supporting the response to prepare for

retrograde after the storm passed. The next two days would see minimal changes in

activity as the storm approached.

4.7.2   November 7

As the nor'easter approached on November 7, federal troops and state National

Guard forces continued supporting civil authorities in a variety of capacities.

According to the DoD's daily Pentagon briefing on November 7, Marine Corps

engineers assigned to TF Pump assisted in dewatering operations in Queens, Air Force

teams operated in support of the New York City Fire Department in the Rockaways

and Brooklyn, and Navy dive teams assisted in pumping missions at the World Trade

Center.[38] The DoD also reported that Marines continued to assist in debris clearance

on Staten Island as well as pumping operations in Breezy Point alongside Navy

personnel.[39]

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[37] See "Pentagon Officials Detail Continuing Storm Response Support" (November 6, 2012 daily briefing) *www.defense.gov/news/newsarticle.aspx?id=118464*, for details.

[38] See "Pentagon Officials Provide Storm Response Update" (November 7, 2012 daily briefing) *www.defense.gov/news/newsarticle.aspx?id=118473*, for details.

[39] *Ibid.*

4.7.3 November 8

November 8 consisted of much of the same from the previous day's efforts. While the nor'easter had not completely cleared the region and continued to limit flight operations, military forces maintained their support of local authorities in dewatering missions throughout Manhattan and the surrounding boroughs. Again according to DoD reports on November 8, elements of the Army Reserve's 401st Quartermaster team supported pumping operations on Long Beach Island and Staten Island. Interviews with Sandy commanders revealed that the Army Reserve unit on Staten Island was operating outside of the DSC's awareness and under Immediate Response Authority according to their unit commander.[40] As a result of this and the expiration of the 72-hour time limit granted under IRA, the Reserve unit was instructed to vacate the area. While minimal in comparison to the Marines' so-called "invasion" of Staten Island, this was still a noteworthy issue that offers support for the recommendations below. With regard to the Marines, they continued their support to civil authorities by dewatering homes and apartment buildings in Breezy Point and the Rockaways. Airmen supported pumping missions at the Rockaway Waste Water Treatment Facility while Navy divers maintained their support of dewatering efforts at the World Trade Center.[41] Army and Air National Guard personnel continued their assistance through ongoing food and water distribution, fuel distribution, sheltering, debris removal, and donations distribution.[42] Operations continued throughout the day

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[40] Interviews with National Guard officers that participated in the response to Hurricane Sandy, February 2014.

[41] See "Pentagon Provides Storm Response Update" (November 8, 2012 daily briefing) *www.defense.gov/news/newsarticle.aspx?id=118488,* for details.

[42] *Ibid.*

and into the evening without any notable incidents. By the evening of November 8, the nor'easter had passed making way for a new day of unrestricted response efforts.

4.7.4 November 9

By November 9, DSCA stability operations were nearing an end. The storm had passed and many of the same activities from November 8 carried over into operations the following day. In addition to ongoing debris clearance and removal in Staten Island and the Rockaways, operations on November 9 included Air Force support in the Rockaways and on Long Island, Army and Navy dive team support at the World Trade Center, and USMC/USN pumping missions in the Rockaways and Breezy Point.[43]

4.8 Transition Operations (November 10-15)

Operations from November 10 – 15 quickly reduced in frequency and scope. By November 11, NORTHCOM had released a redeployment order for the ARG to return to Norfolk (United States Fleet Forces Command, 2013). The next day, most of the 26th MEU redeployed back to Camp Lejeune, NC. The majority of the Title 10 forces departed by November 13, leaving mostly National Guard personnel in the area of operations. Seemingly as fast as the operation began, it was nearing its conclusion. By the middle of November, nearly two weeks after Sandy's initial landfall, most of the region's power was restored; well over a million gallons of water had been pumped from area homes, apartments, subways, and other facilities; thousands of

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[43] See "Pentagon Provides Sandy Response Update" (November 9, 2012 daily briefing) *www.defense.gov/news/newsarticle.aspx?id=118496,* for details.

rations of food and water were distributed, and countless quantities of debris removed from areas with damaged infrastructure. By many accounts, the first ever use of a dual status commander-led no-notice/limited-notice DSCA response was nearing a successful completion.

In total, it is impossible to say how many lives were saved due to JTF Sandy's actions during the two weeks following the storm. While lives saves cannot be measured, military actions during the storm response contributed in significant ways to preventing suffering and mitigating further property damage for the residents of New York and other surrounding states. The DSC-led response under JTF Sandy in New York successfully integrated National Guard and federal Armed Forces for the first time in a no-notice/limited-notice incident. As with any first-time experience, there were instances of success and challenge. As a test case for future operations, this event provided several examples of lessons learned, which can be used to improve future DSC missions in similar capacities. The following section discusses some of the most pressing lessons learned, including successes and perceived failures, and analyzes the circumstances surrounding each occurrence. The lessons learned below provide the foundation for the recommendations noted in Chapter 7.

4.9   Post-Event Lessons Learned

Hurricane Sandy caused a great deal of damage in the New York metropolitan area. However, Sandy was only a Category 1 storm when it made landfall and quickly dissipated after coming ashore. While the storm surge was one of the most significant in New York's history, the storm could have been worse. The post-event lessons learned from this storm cover everything from conflicting command intent, command and control, communication, coordination, mission assignments, laws, policies, and

even politics. Within this study's observations, there are examples of successes that should be repeated as well as examples of issues needing improvement. This section is divided into two main categories: successes and shortfalls. Within successes, there are four sub-categories and associated discussions:

- Coordination
- Liaison Officers
- Forward Leaning Strategy
- Sustaining Successes

Shortfalls contains six sub-categories and associated discussions:

- Process Integrity
- Title 10 Awareness of the Dual Status Commander Construct
- Command Structure
- Mission Assignment Process
- DSCA Education
- Dual Status Commander Guidance/Instructions

4.9.1 Successes

Between extensive dewatering and supply transport/delivery, the U.S. Army Corps of Engineers and the Defense Logistics Agency were critical to the ongoing success of the overall federal response. Despite the importance of these contributions to the operational successes, the dual status commander was not in a position to command or direct USACE or DLA activities. Since these DoD activities occurred outside of the dual status commander-led response in New York they are not detailed in this analysis. This is not to say that the DSC-led JTF did not succeed. Despite being the historic first-time use of a dual status commander for a combined state and federal response, there were some notable successes. Hurricane Sandy provided a proof-of-concept environment for evaluating a DSC operation that involved effective coordination, the successful integration of liaison officers (LNOs), and a strategic

forward-leaning approach to the operation, including pre-positioning Title 10 assets, all of which should be repeated and leveraged again in future DSCA response operations of similar circumstances and requirements.

4.9.1.1　Coordination

While it cannot be empirically proven through systematic analysis, according to several accounts of the response effort, the DSC JTF successfully coordinated many complex staff integration processes that facilitated effective joint communication and coordination between federal and state military staff representatives.[44] During the beginning stages of establishing the temporary JTF, National Guard and NORTHCOM staff officers transitioned into the initial operations phase with minimal complication. Initial staffing procedures, including the identification and pre-deployment of Defense Coordinating Officers to the anticipated affected areas, were executed with clarity and focus. The JTF established the required staff cells and began coordinating the response operation. These critical staff procedures, at least in the early stages of the storm response, were efficient, effective, and should be used as a guide for future DSC-led JTF augmentation. Additionally, the willingness of commanders and senior leaders to use verbal orders of the commanding officer (VOCO) as a basis for executing tasks and missions was also an effective coordination mechanism noted during the Sandy response.

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[44] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

With the noted complexities and burdensome nature of the mission assignment process, leaders encouraged their subordinates to obtain VOCO as a basic form of approval prior to conducting response activities. Commanders and other senior leaders demonstrated a willingness and ability to verbally coordinate and direct the tactical response activities without waiting for the often-sluggish written approval process to occur. In many cases, this led to quicker response activities that ultimately benefitted the citizens of New York. One specific example of this VOCO process occurred immediately following the Marine Corps' arrival on Staten Island on November 4.

Aside from the administrative coordination successes noted above, one of the most significant tactical coordination successes that can offer insight into future command decision making occurred when the DSC received word of the Marines' unsolicited (from the DSC JTF) landing on Staten Island. As discussed above, following an initial period of frustration over the landing and subsequent verbal coordination with General Officers within the chain of command, the DSC was given tactical control of the Marine detachment ashore instead of having them return to the ships. This decision provided two benefits:

1) the command authority of the DSC and ultimately the Governor of New York remained intact by assuming tactical control of the unrequested force; and

2) it offered a tried and accepted decision mechanism for future operations where DSCs can request tactical control of all Title 10 forces entering the JOA, regardless of pretext.

Conversely, had the Marines been permitted to continue operating ashore outside of the DSC command architecture, the sovereignty of New York and the Governor's authority, and thus the purpose of establishing a DSC as a principal

coordination mechanism between the states and federal government, would have been undermined. In contrast, had the Marines returned to the ship as was originally proposed, this would simply serve to further the divide between the state and federal government, ultimately to the detriment of the citizens of New York, further questioning the efficacy of the dual status commander arrangement. As it occurred, the DSC's assumption of tactical control over the Marines, to the satisfaction of both the federal military and state National Guard commanders, resulted in a successful solution to what was actually one of the biggest points of friction and areas for improvement of the entire DSCA response to Hurricane Sandy.

Assessing the dynamics of VOCO, including the actual level of compliance and implementation, is nearly impossible from a lessons learned perspective. However, the benefit of VOCO is evident from the Sandy response. Coordinating operational continuity by assuming tactical control of the Marines occurred almost entirely through verbal discussion and coordination, thus reaffirming the value of the VOCO process as a critical coordination practice. In many cases, VOCO coordination is facilitated by and through strategically positioned Liaison Officers (LNOs) inside the relevant agencies, services, departments, and organizations.

4.9.1.2   Liaison Officers

Inter-service/agency coordination is critical to the success of any joint operation. It is perhaps even more critical to the success of no-notice/limited-notice response given the dynamic and evolving nature of such operations. Since information and requirements so often change during these events, generating and maintaining situational awareness is a necessity for commanders. As designated representatives of their respective service or organization, LNOs and/or Emergency Preparedness

Liaison Officers (EPLOs) provide a vital function to any commander executing joint operations. The placement of LNOs across the entire Joint Operations Area (JOA) was considered by many senior commanders to be one of the most beneficial practices employed by the joint force during Hurricane Sandy.[45] By embedding LNOs representing various services in and around important staff elements, such as the Joint Field Office (JFO), JTF Headquarters, FEMA, and the respective military service headquarters, operational decision making processes were enhanced through shared situational awareness. While there were some LNO coordination gaps noted, the emphasis on using LNOs to improve coordination is a success worth repeating. Though it is unclear exactly how many LNOs were essential to amplify command coordination during Sandy, it appears from the available data that LNO integration provided an intangible but genuine benefit. By identifying needs and assigning LNOs to critical areas, the joint force demonstrated a forward-leaning, assertive approach to this civil support operation that is also worth noting.

4.9.1.3   Forward-Leaning Strategy

Exercising command initiative by deploying LNOs throughout the JOA is an example of a successful, forward-leaning approach employed by DoD and the National Guard in response to Hurricane Sandy. Rather than waiting to deploy forces until after receipt of a support request, both DoD and the National Guard took a proactive approach and prepositioned forces and equipment in and around areas

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[45] Interviews with various National Guard officers and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

affected by Sandy. As discussed, the lessons of Hurricane Katrina remain embedded in the minds of many. Given the highly criticized federal response to Katrina, the prevailing philosophy of senior leaders involved with the planning and execution of the Sandy response held that DoD should take aggressive measures to ensure that the citizens of New York and other affected states receive the assistance they need when they need it. In other words: "don't be late."[46]

DoD's effort to avoid repeating the failures of Katrina resulted in the aforementioned "Go Big, Go Early, Go Fast" approach that involved prepositioning equipment and forces and taking additional steps to facilitate coordination and communication between all participating units and agencies. Rather than operating via a pull philosophy, in which DoD waits for requests from local and state agencies to mobilize resources, a proactive and anticipatory push mentality was employed. This push vs. pull approach is a paradigm shift of sorts for DoD compared to past response efforts. Placing personnel and equipment assets on stand-by status in geographic proximity to the JOA offered the DSC additional capabilities to consider during the response, which ultimately proved beneficial. Although the prepositioned forces assume an associated cost risk if they are not used — and therefore pressure commanders to employ mobilized assets — the benefit of having prepositioned Title 10 forces near the JOA as a force multiplying capability is significant. Additionally, this option saves National Guard forces from activating troops, forcing them to unnecessarily leave their civilian jobs for extended periods in the event they are not

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[46] "Don't be late" was a repeated axiom describing DoD's strategic planning approach to the Sandy response. This was noted in multiple After Action Reports and in the context of the lessons learned from Hurricane Katrina.

involved in the response operation. In the case of Hurricane Sandy, prepositioned Title

10 forces gave the DSC the flexibility to maximize the National Guard assets currently

in the JOA and prevented the unnecessary mobilization of potentially thousands of

additional Guard troops at the additional expense to the taxpayer. The Title 10 forces

prepositioned in and around the JOA provided an obvious benefit to the DSC that

should be considered an administrative and strategic best practice for future civil

support scenarios.

4.9.1.4   Sustaining Successes

While not a comprehensive list, the aforementioned information reveals some

notable successes that should be considered by those directing future operations.

Sustaining the above successes will provide some of the critical components of the

strategic, operational, and tactical level frameworks necessary to ensure a successful

DSCA response under a DSC-led JTF. To ensure the continued use and

implementation of the above for future operations, it is important to include these

successes in lessons learned and after-action reports. DoD has a robust Lessons

Learned program within each service component. Often, reports generated by Centers

for Lessons Learned provide DoD with valuable information and recommendations to

incorporate into future training exercises, simulations, and actual operations.

Integrating these successes into the ongoing lessons learned process would ensure

leaders have the information necessary for improved decision making during future

DSCA events.

Leveraging lessons learned ensures commanders can incorporate valuable

knowledge into critical training and exercise simulations. These simulations often

provide military forces with the most comprehensive and realistic opportunities to

train and prepare for likely operational situations. Integrating this knowledge into future DSCA training events offers commanders an opportunity to test and evaluate the efficacy of the aforementioned strategies and tactics. By simulating such operations, commanders are better positioned to execute actual operations when the time comes. Further, training and simulations create evaluation scenarios that help to identify mission-critical gaps and areas for improvement, such as training more LNOs to serve in this necessary function.

Finally, DoD and the National Guard can ensure sustained successes in future DSCA operations by training more personnel to serve as LNOs. The LNO requirement is essential for a successfully coordinated response, especially one involving multiple services, agencies, departments, and organizations. Maintaining a cadre of trained personnel capable of serving as LNOs is necessary for continued success. With trained LNOs involved in extensive exercises and simulations designed in consideration of past lessons learned, DoD and the National Guard can sustain the notable successes from Hurricane Sandy and improve performance during the next no-notice/limited-notice incident requiring DSCA. However, beyond sustaining the successes gleaned from Hurricane Sandy, there are several areas for improvement to learn from as well.

4.9.2 Shortfalls

Despite some important successes, it is crucial to note that temporary JTFs for no-notice/limited-notice incidents are just that: temporary. These makeshift commands stand up in response to events requiring joint coordination of military activities in support of civil authorities. They do not train for months in preparation for deployments, as defined military units often do. Due to this temporary joint structure, the JTF often lacks continuity and sound working relationships. As a result, these

operations inevitably experience challenges. While the preceding successes offer valuable insight into sustaining future actions, there are, as expected, numerous areas for improvement worth noting.

The coordinated federal response to Hurricane Sandy had many successes; and, as is to be expected with the first-time implementation of a new command arrangement, the operation had many challenges from which to learn. The following section identifies some of the more significant challenges the DSC-led JTF and associated personnel experienced during the two-week response. For clarity and consistency, the topics are again separated into categories with a detailed description of the circumstances for context and consideration. Like the previous section, this material serves as the basis for the strategy and policy recommendations discussed later.

4.9.2.1 Process Integrity

As previously discussed, the preparation phase of the Sandy response was efficient and largely effective. In New York, civilian and military personnel deployed to the planned Joint Operations Area early and set up a functioning Joint Task Force ready to coordinate the receipt and employment of state and federal forces. From the storm's landfall on October 29 to the conclusion of initial area assessments on October 31, most accounts of the operation were positive. National Guard forces were the main military presence within the New York City boroughs and on Long Island. Title 10 assets and personnel had been prepositioned at nearby JBMDL and were awaiting mission assignments. However, growing frustrations over power outages, fuel shortages, and expanding news media coverage of the response, likely coupled with the pressures of the pending election, prompted the federal government to begin taking

a more assertive stance in the response effort. The Administration's October 31 "no red tape" guidance, coupled with NORTHCOM's November 2 fragmentary order (FRAGO),[47] while both certainly well-intentioned, contributed to some of the resulting confusion during subsequent days.

November 2 NORTHCOM FRAGO:

- Get Missions – start with menu of DoD capabilities in the JOA that can be applied to support FEMA requirements
- Do not wait for mission assignment paperwork. Coordinate with FEMA and the Defense Coordinating Officers.
- Apply total force capabilities to accomplish missions. Operate on VOCO (verbal orders of commanding officer) mission assignments when possible.
- When you get a mission: execute. Clean up paperwork later by coordinating with FEMA and the DCO. [48]

The above material, copied from a written FRAGO on November 2, seemingly encourages military commanders to abandon the structured processes normally in place in favor of less restrictive, verbal communication. In most cases, this demonstrates the military's ability to conduct flexible, adaptive, and in some cases, improvised operations when bureaucracy would simply be an unnecessary obstacle impeding efficiency. On its own, this guidance is encouraging and could be interpreted as consenting direction for Title 10 forces to respond under Immediate Response

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[47] 'Fragmentary Order' is defined by Joint Publication 1-02: *Department of Defense Dictionary of Associated Military Terms* as "An abbreviated form of an operation order issued as needed after an operation order to change or modify that order or to execute a branch or sequel to that order," (Department of Defense, 2014a, p. 105).

[48] Copied material from NORTHCOM guidance (fragmentary order) of November 2.

Authority. However flexible, it was in conflict with the DSCA process taught to military officers as part of their professional military education (PME).

When guidance stems from the most senior levels, it tends to move through the subordinate echelons with greater urgency. As a result, actions often happen with more fervor and zeal. When such guidance contradicts policy and legislation, however, it invites violations of the same laws and procedures that are designed to maintain order, structure, and accountability in the first place. In some ways, senior commanders decided, essentially, to marginalize or ignore many of the guiding documents and laws governing military civil support operations. As a result, the NRF, the mission assignment process, and other pertinent procedural guidance that serve as a system of checks and balances were largely ignored or abandoned by some senior leaders. The most notable example of this issue was the U.S. Marines landing on Staten Island without the prior consent or knowledge of the dual status commander.

4.9.2.2 Title 10 Awareness of the Dual Status Commander Construct

Building on the above discussion detailing the events of November 4 and 5, we know that the Marines' arrival on Staten Island resulted from a series of conversations outside of the established chain of command and perhaps without consideration for normal Title 10 request for assistance procedures. A number of after-action reports and personal interviews with those knowledgeable of the events support the claim that the Commandant of the Marine Corps, through the II Marine Expeditionary Force Commanding General, directed the 26th MEU commander to deploy his unit to the USS Wasp off the coast of New York. The guidance from the Commandant instructed the MEU to: "Get to New York City, go ashore, do good, and relieve the suffering that

is occurring."[49] These same reports and interviews suggest that a New York/New Jersey Port Authority official circumvented the normal processes and initiated the request via direct communication with Headquarters Marine Corps (HQMC). As a result, without a mission assignment or notifying the dual status commander, Marines carried out their orders and began support efforts on November 4. Except for justifying the Marine Corps' arrival on Staten Island as Immediate Response Authority (which will be discussed in subsequent sections), the legal basis for the Marines' activity on Staten Island on November 4 and 5 is, at best, questionable. Since the dual status commander was unaware of the Marines' activity until after their arrival, this offers a valuable lesson learned to improve future Title 10 coordination with the DSC JTF. This failure of communication and coordination suggests several things worth discussing.

Incursion, intrusion, invasion…initiative; all are words that have been used to describe the Marines' landing on Staten Island on November 4. Aside from debating the semantic classification of the Marines' presence on Staten Island, this event illustrates some important points. Perhaps the most significant lesson learned from this action is the lack of familiarity and understanding of the dual status commander arrangement among some Title 10 officers. Some officers who commanded units during Sandy admitted to being completely unaware of the dual status commander

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[49] Summary of guidance issued by the Commandant of the Marine Corps provided through personal interviews and multiple DoD after action reports detailing the circumstances of the Marines' response.

concept, structure, and command arrangement prior to execution. [50] In addition, due to the pressure from the Commandant and the aforementioned NORTHCOM guidance to "get missions," the MEU repeatedly contacted the Joint Coordinating Element at JBMDL, rather than the dual status commander JTF to request mission assignments. This is problematic for two reasons. By contacting the JCE and other senior commanders to request missions, the MEU:

- Demonstrated that it did not have a clear understanding of the DSC chain of command and was, in effect, excluding the DSC from the conversation simply because they were unaware of the DSC role.
- Was, in effect, pressuring senior commanders to involve a Title 10 force in the response effort prior to the DSC JTF's acknowledgement of the requested need.

After some time without acknowledgement from the JCE and following discussions with HQMC and Port Authority personnel, the MEU debarked a small detachment of Marines from the USS Wasp to assist Staten Island authorities in debris removal and restoration activities (a mission not covered by an approved mission assignment and without the awareness of the NY DSC at the time). Despite occurring outside of DSC's scope, the Marines provided a requested service in support of the residents and local authorities on Staten Island. As such, it became evident that this activity should continue. Following a brief interruption in activity on the evening of November 4 (as previously discussed), the Marines resumed support activities under the tactical control of the DSC on November 5.

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[50] Various DoD after action reports suggest Title 10 unit commanders were unaware of the dual status commander construct or how federal military forces integrate into the joint structure.

The lessons learned here suggest several things. First, when command guidance encourages the abandonment of policies, accountability and clarity are lost in such a complex response environment. A long history of disaster research suggests that the "red tape" of government bureaucracy hinders response processes, often to the detriment of the citizens of an effected area (Dynes, 1994; Neal and Phillips, 1995; Webb and Chevreau, 2006; Streib and Waugh, 2006; Waugh, 2009). Bureaucratic impediments create inefficiencies in disaster response when speed and flexibility are often necessary. Emergent, volunteer, and other response activities outside of the military apparatus can operate in a less-restrictive environment. However, as taxing as it may be to adhere to response policies and procedures, combined state and federal response efforts regularly involve masses of personnel representing a multitude of agencies, departments, and organizations. This requires some semblance of structure in order to function adequately. The Marines' landing on Staten Island suggests that not only do some military commanders lack the necessary education and knowledge concerning the dual status commander construct, but there is also limited understanding of the requirements and procedures of the mission assignment process. Regardless of the reason for abandoning procedures, this particular set of circumstances suggests that military commanders do not have a clear understanding of the dual status commander construct and its application during no-notice/limited-notice DSCA response scenarios. Moreover, between political influences, uncoordinated civilian activities, and occasional federal military ventures under Immediate Response Authority, this suggests dual status commanders may not be able to command and control as much of the response as we expect them to. These events

also suggest that the established command structure for the Sandy response was unclear.

4.9.2.3   Command Structure

Beyond the Marine activity on Staten Island, confusion and lack of clarity concerning the actual joint command structure further complicated matters during the Sandy response. Because Sandy was a multi-state incident, the decision was made to put a Joint Coordinating Element as an intermediary echelon between the Army North commander (LTG Caldwell) and the NY DSC. In this case, MG Mathis, Commanding General of Joint Task Force Civil Support, served in this capacity as the JCE with supervision of all Title 10 forces in both NY and NJ during the Sandy response. In a single state incident, this would be an unnecessary command position, as the DSC would report directly to the ARNORTH commander, to NORTHCOM, to SECDEF, and finally to the President on the Title 10 side. In the Sandy response, however, the JCE served as an additional command layer and added confusion to the already complex command hierarchy.

According to some accounts in after-action reports and personal interviews, the command structure changed multiple times during the first days of the operation. The role of the JCE was unclear to many as there are conflicting accounts among those who participated in the event. Some maintain that the JCE was the intermediate link between the JFLCC (ARNORTH) and the DSC with command authority linking the two echelons (Figure 18). Others, however, dispute this, suggesting that the JCE's role was just that: a coordinating element with no command authority over the DSC as suggested in the alternative structure shown in Figure 19. While accounts differ, the fact remains that the command and control structure of the Sandy response was

unclear to the Title 10 side. On more than one occasion, this lack of clarity resulted in the NY DSC fielding calls on his cell phone or receiving emails from Title 10 forces advocating for their capabilities and requesting orders to assist in the response. In effect, the DSC received multiple unsolicited requests from Title 10 forces petitioning for their inclusion in the operation. This not only points to a lack of clarity regarding the command structure, but also suggests that Title 10 forces either deliberately ignored processes or were mostly ignorant to the coordination and approval procedures involving the Defense Coordinating Officers and their counterparts in the Joint Field Office. Within this context, other processes were equally challenging, leading to confusion during the Sandy response in New York.
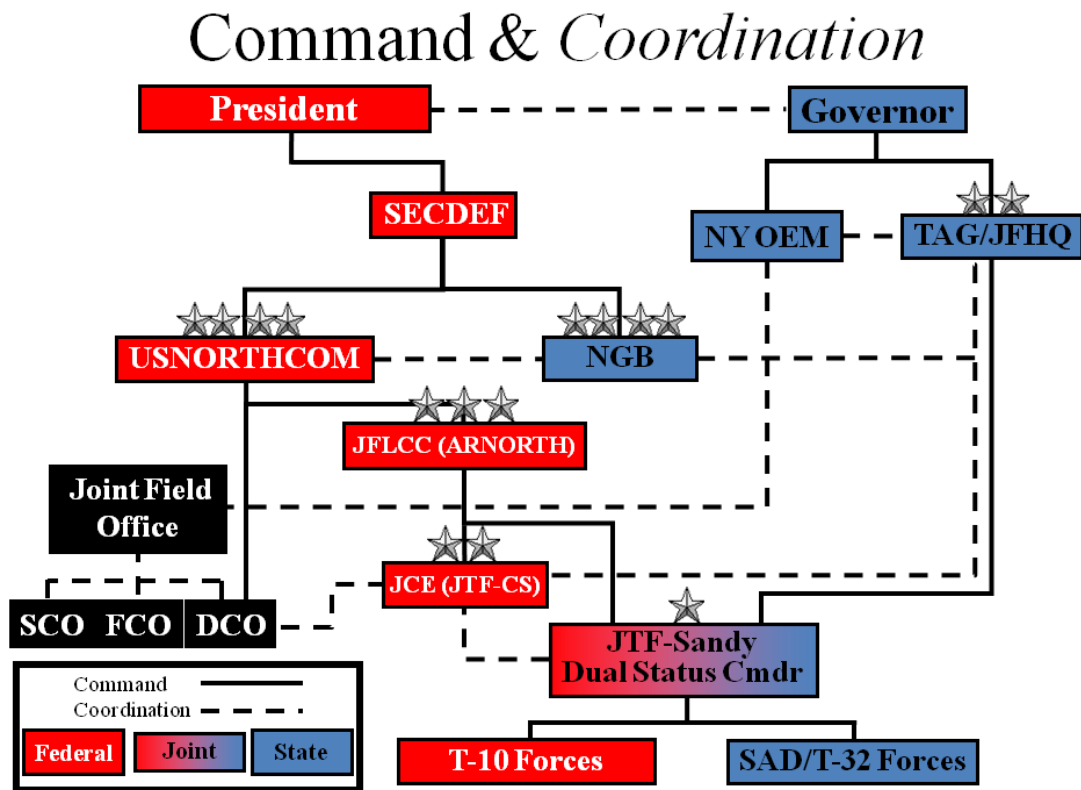
Figure 19: Sandy Command Structure – Alternate

4.9.2.4 Mission Assignment Process

The DoD mission assignment process outlining the procedures for Title 10 support of civil authorities is unwieldy. Combining this cumbersome process with the urgent needs following a no-notice/limited-notice incident creates additional burdens for military and civil authorities to manage. The unprecedented timing of Hurricane Sandy just prior to a presidential election and its near-direct hit on the most populated city in the United States only increased the inter-agency pressure to provide timely response. For reasons previously mentioned, the mission assignment process was not followed on several occasions during the federal response to Sandy in New York. The lack of adherence to established procedures can be attributed to all levels of command. Specifically, the Sandy response in New York suggests needed improvement in the mission assignment process as it relates to approval and authorization, as well as speed and necessity of assignment processing.

Within the mission assignment parameters, requests for DoD assistance are generated from local and state authorities after all other resources (local, county, state [including National Guard], and EMAC) have been exhausted or are otherwise unable to provide the necessary service due to limited capabilities. (For example, dewatering the New York subways required pumping capabilities beyond local and state capabilities). Conceptually, this bottom-up process ensures that federal forces sourced for DSCA have a mission to perform based on requests from local authorities. In actuality, the mission assignment process sometimes creates a bureaucratic obstacle for a commander that hinders operational response. When there are unmet needs in a DSCA response scenario, bureaucracy creates frustrations and impatience which can lead to non-compliance with established procedures. During Sandy, there were several

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instances of this as missions came from the top-down and without requests from state and/or local officials.

Without approved mission assignments but in consonance with NORTHCOM guidance, federal military units converged on the New York area in the days following Sandy's landfall. Units deployed intending to provide assistance without consideration for accounting procedures or coordination strategies between state and federal forces. This force surge created a cluttered JOA with some units in the area without the knowledge of the dual status commander. This also led to the inundation of unsolicited offers of support from Title 10 forces, which had to be fielded by members of the JTF staff, further complicating an already complex coordination effort. In some instances — and likely due to the sluggish mission assignment approval process — missions were generated and disseminated from the top-down, rather than bottom-up, per the NRF guidelines. Eventually, Title 10 forces began conducting support activities without a mission assignment or knowledge of the dual status commander. As a result, key personnel in the JTF staff, the New York State Office of Emergency Management, including the State Coordinating Officer (SCO), and other critical coordination elements, were excluded from the conversation. This led to increased confusion and reduced inter-agency coordination. With Title 10 forces operating in the dual status commander's tactical area of control and responsibility and without a valid mission assignment, the immediate reaction in some instances was to order all non-approved activities halted until approval was granted. As a resource employer, the dual status commander is responsible for coordinating federal and state efforts simultaneously. Mission assignment protocol should not restrict the DSC from employing state and/or federal resources appropriately to meet a need. The impediments that prevent a dual

status commander from approving missions within his/her area of responsibility, especially Title 10 missions providing needed support to local authorities, hence, should be removed.

To many, the published mission assignment process is mechanistic and convoluted. Some argue that the heavily bureaucratic process creates delays and inefficiencies in a time when speed and effectiveness are most critical. Therefore, the fact that DoD did not adhere to the mission assignment process during the Sandy response may be perceived by many as a progressive step forward. However, abandoning the mission assignment process entirely creates significant impediments to coordinating and executing an operationally, legally, and financially sound federal response. With increased confusion resulting from ad hoc processes outside of the established guidelines, this ultimately diminishes the unity of effort desired in DSC-led DSCA responses. As with other topics discussed, the Sandy response in New York illustrated some of the current issues plaguing the process and offers a useful case study platform to generate improvement. Based on this event, it is clear that the mission assignment process can be improved to ensure this situation does not occur again in future DSCA missions.

During a no-notice/limited-notice incident, the first 72-96 hours of the federal response are absolutely critical and can mean the difference between a manageable disaster and one where Congress, the media, and the public collectively blame DoD for sluggishness. A better and more streamlined mission assignment process is needed to recognize this critical response period. However, improving the mission assignment process is only one step in the larger DSCA context. As the response to Sandy demonstrated, some military commanders and other senior defense officials lack the

requisite knowledge of the DSCA environment and the newly established dual status commander construct. We must ensure that senior military commanders and defense officials are fully educated in the DSCA arena, with specific emphasis on the dual status commander arrangement.

4.9.2.5 DSCA Education

Of the noted areas needing improvement, perhaps none is more important than DSCA education for senior military leaders. While there are many subject matter experts in all things related to defense support of civil authorities, there appears to be a critical gap in DSCA knowledge among some senior military commanders. As evidenced by the failure to follow mission assignment processes and the notable confusion over the role and authority of the dual status commander, it appears that some senior leaders, often with decision making authority, lack the required knowledge to ensure their decisions fall within established legal, financial, and doctrinal barriers of DSCA operations. The critical triad of DSCA considerations — the legal, financial, and doctrinal guidelines — were abused during the Sandy response in New York, in many cases due to a lack of DSCA knowledge among commanders and their support staffs. This is not to suggest that all Title 10 DSCA operations were in violation of policies and procedures; much to the contrary in fact. The problems that occurred during the Sandy response in most cases can be largely attributed to lack of formal education, training, and knowledge of the DSCA response environment.

As noted previously, some Title 10 force commanders were unaware of the dual status commander arrangement prior to their involvement in Sandy. The same reports and interviews suggest that USACE commanders were equally unfamiliar with

the dual status commander construct. In this case, Title 10 forces attached to Task Force Pump and in support of the USACE as the Lead Federal Agency for ESF-3, were assigned missions beyond the scope of any pre-approved mission assignments for Title 10 forces. Reports suggest that USACE personnel were unaware of certain Title 10 restrictions for federal military forces and did not have an effective process in place to facilitate coordination with the dual status commander. While these issues were resolved through effective inter-service liaison efforts, they point to larger issues that must be addressed.

If unit commanders supporting DSCA operations are unaware of the command structure in place, this can certainly contribute to increased confusion and uncertainty, much like what occurred during Sandy. The dual status commander construct is relatively new and had never been used during a no-notice/limited-notice DSCA response prior to Sandy, so there is some expectation of unfamiliarity. However, the lack of knowledge toward the dual status commander arrangement on behalf of some commanders during the execution of a real-world DSCA operation is troubling. This suggests that we need to improve knowledge and awareness of senior military officers with DSCA-related mission capabilities organic to their units. It also suggests that we need to significantly improve our communication and information sharing prior to and during DSCA operations so that commanders supporting civil authorities can operate within the established command configuration, limit future confusion, and therefore, contribute to the desired unity of effort that the dual status commander arrangement is designed to facilitate. Finally, this suggests an urgent need for more realistic training and exercises like Vigilant Guard, Ardent Sentry, and others designed to simulate a DSCA response under a dual status commander.

4.9.2.6 Dual Status Commander Guidance and Instructions

Much of the confusion and lack of situational awareness concerning the dual status commander initiative can be attributed to the lack of formal guidance currently contained in DoD reference publications, doctrine, and instructions. Currently, the DoD Instruction 3025.xx – "Dual Status Commanders for Defense Support of Civil Authorities" – is in draft status. As a subordinate publication to the more widely circulated DoD Directive 3025.18 – "Defense Support of Civil Authorities,"[51] DOD Instruction 3025.xx will address many of the current issues of confusion concerning dual status commander-led DSCA operations. Until the release of this new instruction, few other defense references offer guidance on the dual status commander construct, and even fewer contain any substantive information that can be applied to no-notice/limited-notice incidents.[52] There is a critical need within DoD and the National

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[51] DoD Directive 3025.18: *Defense Support of Civil Authorities* was last revised in September 2012 and contains no language addressing the dual status commander construct in any capacity.

[52] The only DoD publication devoted to the dual status commander construct at this time is NORTHCOM Pub 3-20: Title 10 Support to Dual Status Command Led Joint Task Force Standard Operating Procedures. Released in January 2012, this document outlines the employment procedures and considerations for the use of DSCs during civil support missions. However, this document pre-dates Hurricane Sandy by nearly a year. Lessons learned from Sandy are beginning to matriculate in and have led to the need to re-write this publication. According to NORTHCOM personnel, 3-20 is undergoing significant revisions at this time. Joint Publication 3-28: Defense Support of Civil Authorities was published in July 2013 following significant revisions from the 2007 version. JP 3-28 offers some of the most comprehensive text regarding dual status commander of all DoD publications reviewed. This new version "introduces, defines and clarifies the dual-status commander to include nomination, training and appointment requirements" (p. iii). Additionally, JP 3-28 includes a useful process diagram (shown in Appendix E) to depict the DSC designation process once requested by state Governors (p. C-9, 2013). U.S. Army Field Manual 3-28: Civil Support Operations provides a detailed description of the dual status commander concept and construct. This reference defines the authorities and requirements for establishing DSC

Guard to codify dual status commander guidance through the development and continued revisions of relevant guidance, doctrine, and reference publications. Such work is ongoing within the Office of the Secretary of Defense, NORTHCOM, and the individual services. However, until DoD develops and releases clear, well-articulated guidance detailing the many issues relevant to the dual status commander construct, these operations will continue to experience challenges like those noted.

While not a comprehensive list, this section offered a brief description of some notable areas recognized through the Hurricane Sandy operations as needing improvement during dual status commander-led DSCA operations. Using this as a basis for future decision-making and planning efforts can lead to improvements in these critical mission capabilities under the unique command arrangement noted. Through the detailed analysis offered, the case study data provides the foundation for the next chapter discussing the application of process improvement concepts to improve DSC-led missions. Chapter 5 explains the conceptual argument for using process improvement to mature civil support missions. It lays the framework for the discussion in Chapter 6 on the design and development of the DSC2M2.

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arrangements and provides useful graphics to illustrate the operational and tactical command relationships between the DSC, state, and federal governments (p. 7-5). However, defined guidance on the execution process for no-notice/limited-notice incidents is absent in this reference. Other pertinent military reference publications including Army Doctrinal Publication 3-28 and Multi-Service Tactics, Techniques, and Procedures (MTTP) 3-28 address the dual status commander concept briefly without providing any substantive guidance for the execution of complex no-notice/limited notice DSCA operations such as Hurricane Sandy.

Chapter 5

MATURING MISSIONS WITH PROCESS IMPROVEMENT

As described throughout this dissertation, military operations are intricate, dynamic, and fluid. Defense support of civil authorities (DSCA) operations, specifically, span a wide range of scenarios including response to natural and man-made disasters, civil disturbances, terrorism, and other significant incidents. In the early stages of response operations, lives and property can be at risk, often requiring swift decision making with limited information, similar to combat operations. However, while combat operations must be undertaken with consideration for the defined rules of engagement and laws of war, these are less restrictive, arguably, than the laws and policies governing the actions of U.S. military forces in a domestic capacity. For these reasons, military commanders and planners regularly rehearse, train, exercise and simulate operational scenarios so they are better prepared to face such challenges in real-world situations.

Domestic civil support operations in response to emergencies or disasters present a challenging operational environment full of legal, financial and even political barriers unique only to domestic missions. While commanders value the ability to maintain a flexible, adaptive, and agile response capability, there are, for better or worse, obstacles in the form of policies and procedures that must be considered when operating domestically in support of civil authorities. As an added challenge, large-scale incidents often involve both state-controlled National Guard and federal military forces. Despite similar operational capabilities, the non-federalized

National Guard forces and federal military forces operate under distinctly different sets of laws and policies which only serve to further complicate an already difficult mission.

As a coordination mechanism designed to improve interagency and departmental coordination across state and federal boundaries, the dual status commander initiative has shown promise during planned civil support events such as national political conventions and summits, as well as other special security events including the Olympics and Super Bowls. Sandy provided our first opportunity to use the DSC construct during an unplanned response effort. As noted, there were successes and shortfalls that can be used to help us understand how to improve operations under a DSC. This chapter uses the data from the Hurricane Sandy case study in Chapter 4 to support the argument that process improvement strategies and techniques can help to mature future no-notice/limited-notice dual status commander operations.

In advocating for the integration of process improvement into future civil support missions under the dual status commander arrangement, this chapter also revisits material from Chapter 3 by addressing ways in which maturity models can be adapted and applied to help mature military operations. The chapter continues with a discussion of the potential benefit of process improvement techniques as a method for improving unity of effort between state and federal military forces under the dual status commander construct for no-notice/limited-notice incident response. Using the concepts presented here as a method for improvement will provide a practical tool for enhancing the efficiency and effectiveness of this critical coordination mechanism well into the future.

Similar to Chapter 4, parts of this chapter are contained in a second monograph written for and funded through ERAP contract # W911S0-P-0107 at the SSI of the U.S. Army War College. As in Chapter 4, parts of this chapter have been reviewed and previously published as "Maturing Defense Support of Civil Authorities and the Dual Status Commander through the Lens of Process Improvement," (Burke and McNeil, 2015b).

5.1   Noting the Gap in Improvement Efforts

The U.S. military places significant emphasis and importance on after action reports as a mechanism to identify lessons learned and guide future improvement efforts. This emphasis on after action reporting is valuable in that it helps to articulate lessons learned and opportunities for improvement during future operations. These reports are regularly sent to the service Centers for Lessons Learned (CLLs) where they are consolidated and published for broad dissemination to subscribers. Readers digest the information and some commanders may even consider the recommendations for employment in future missions. While doctrine writers incorporate these lessons into doctrinal change and future concepts, the existing processes remain generally ineffective in transforming lessons learned into improvements in tactics, techniques, and procedures (TTP). Additionally, they are relatively useless for guiding operational planning and strategy development. Despite the issues, the Lessons Learned programs in each military branch are valuable. They offer insight to their respective service components – based on lessons learned from past operations – to help improve future mission performance through concept and doctrinal changes and recommendations. Sometimes these recommendations and changes are not integrated into future operations due to an ill-defined – or ineffective –

method of doing so, however.[53] With ineffective methods to integrate lessons learned, there is no way to promote consistent and continuous process improvement of complex military operations. So while military operations do not currently benefit from continuous process improvement efforts partly due to the absence of a structured improvement plan, military contracting and other similar programs do.

The Department of Defense currently uses structured process improvement techniques and methods in a range of functions as a way to monitor performance, identify areas of weakness, and steer improvement efforts towards performance enhancement and maturity. These same process improvement techniques currently used and endorsed by DoD in non-operational department activities provide an ideal platform to launch a structured improvement effort aimed at maturing complex civil support operations under the dual status commander construct. Whereas military operations and lessons learned programs lack structured improvement methods, defense contracting and similar DoD business operations regularly employ process improvement strategies as a way to enhance their operational performance and accountability. Since process improvement strategies are structured methods to assess processes in terms of both strengths and weaknesses, they can guide users by helping them chart a path for addressing issues while preserving desirable qualities of a given process or system. Most process improvement strategies engage stakeholders and develop supporting documentation for accountability. With its rich history of research

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[53] The military now has a Joint Lessons Learned Information System (JLLIS) which all services can use and provide lessons learned input, but it is only as good or valuable as the units inputting the data and/or using JLLIS as a source for future operational improvements.

literature supporting its use and application within software engineering, software development, manufacturing, and business operations, process improvement is a proven approach to enhance and mature complex operations (Chrissis et al., 2007, Garcia and Turner, 2007; Ahern et al., 2008).

While there are different approaches, in their most basic form, process improvement techniques focus on reducing waste and improving productivity through the identification and performance of consistent, repeatable, and predictable practices. By deconstructing complex processes into individual and related practices or actions, process improvement offers users a tool for modeling the complexities of their processes and organizing them into groups of workable goals and practices. Given the potential utility of process improvement coupled with the inherent complexities of DSCA operations under a dual status commander, these same process improvement techniques currently used and endorsed by DoD in non-operational department activities can provide an ideal platform to launch a structured improvement plan aimed at maturing complex civil support operations under the dual status commander construct.

Simultaneous DSCA and National Guard support of state civil authorities occurs within a complex decision-making environment that must integrate legal, political, financial, and bureaucratic considerations into nearly every command decision. We can continue to write and publish policies and laws in the hopes that our commanders will consider each appropriately prior to making command decisions during uncertain situations. However, disaster operations often require a sense of urgency in which bureaucracy only serves as a hindrance. In these instances, policies, and in some cases law, tend to be ignored, marginalized, or simply forgotten. It is a

rare commander who will delay a needed operational decision in order to consult a manual or other lengthy reference publication. In light of this, what we need is a tool applicable to the urgency and complexity of no-notice/limited-notice operations that still offers commanders a valuable utility. Such a tool will distill the labyrinth of policies, procedures, doctrine, and law into a simplified map of mission-essential tasks worthy of the commander's consideration. This can be achieved through the application of process improvement strategies. Using process improvement, we can build such a tool that provides commanders with the information necessary to ensure deference to the necessary laws and policies governing military civil support missions without sacrificing speed, efficiency, effectiveness, or urgency. There is a need, then, to develop a tool that can be used to consolidate recommended best practices into usable models able to guide future operational decision making. While some techniques are unsuitable for military operations, this research demonstrates how maturity models can be adapted for military operations and result in tangible enhancements.

5.2 Adapting Process Improvement for Operational Contexts

The use of DSCs during Hurricane Sandy highlighted the issues, gaps, and opportunities for improvement with regard to DSC arrangements during no-notice/limited-noticed incidents. There is an opportunity to learn from events like Hurricane Sandy and improve our knowledge and understanding of dual status commander structures and this critical mission capability. Using process improvement techniques to guide these efforts is a unique approach worth considering. Given the systems and software engineering genesis of process improvement techniques, it is

necessary to adapt them somewhat in order to maximize the benefit when applied to a less-structured operational context such as a DSCA mission.

The dynamic nature of DSCA operations requires mature capabilities representing information sharing, shared situational awareness, and social interaction; each of which must occur through both linear and vertical command structures. The heterogeneous DSC construct involves several contributing elements, echelons, agencies, departments, and organizations in both state and federal operational chains of command. This requires an agile, coordinated response incorporating each entity and their respective capabilities. The DSC arrangement provides a command mechanism designed to help improve coordination processes across the federal-state authority boundary. Through enhanced information and knowledge sharing under the DSC construct, military commanders can achieve greater management effectiveness and governance. As a result, joint military operations seek to attain a network-centric and agile force structure during complex scenarios. The DSC construct is designed to facilitate such network-centric, agile operations involving multiple departments, agencies, and response organizations.

Knowing the complexities involved with military operations, military doctrine advocates for a mission command approach to leadership (Department of Defense, 1996; 2012b). This approach, more reflective of the modern, post-Vietnam era military, values decentralized control and empowering small unit leaders. Through this approach, commanders can articulate *what* needs to be done to subordinates while leaving the *how*, or the tactical level decision making, to the discretion of the small unit leader. This approach also serves to minimize bureaucratic and procedural obstacles and offers the needed autonomy and flexibility for subordinate leaders to

make split-second decisions without the constant need for approval from higher authority. While flexibility and agility are necessary ingredients for speed and effectiveness, military civil support operations often encounter challenges that maturity models can help address.

Commanders at all levels regularly develop structured operations orders to help plan for contingencies and guide activities during the conduct of an operation. Most operational orders offer consistent structure and follow a basic five paragraph format including such sections as orientation, situation, mission, execution, administration/logistics, and communications. These orders provide the needed operational guidance and intent to allow commanders at all levels to guide their unit activities in a manner that contributes to the achievement of the tactical, operational, and strategic objectives of the operation. So, while situations and scenarios can be anticipated with some accuracy, there is always a degree of uncertainty. Fluid and dynamic situations often require modifications to published orders As such, some process improvement techniques provide little utility for most military operations where flexibility and improvisation are highly valued. However, if we instead shift the focus of our improvement efforts to mapping the relevant processes and essential tasks associated, we can generate significant improvements in overall operational efficiency.

5.3   Building a Process Maturity Model for DSCA

The fluidity of a DSCA operational environment mandates flexibility, adaptation to the environment, and improvisation. With the inherent challenges in DSC-led DSCA operations, developing a maturity model as a tool to represent essential tasks and articulate relevant operational considerations would be a significant improvement. Since we know the DSC construct will be used again in future disaster

response operations, we need to continue to learn from past operations and implement lessons learned. A DSC-led DSCA operation offers a semi-structured organizational arrangement to overcome some of the complexities associated with a multi-authority decision environment. Because of the organizational structure, there are repeatable tasks associated with a DSC, which, if performed consistently, will enhance operational performance in future missions. Improving the critical processes to execute DSC-led operations would further enhance the stability and predictability of inter-organizational command, control, and coordination and the ability of commanders to address a variety of environmental contingencies. With so many considerations and potential areas of challenge, identifying and documenting essential tasks for inclusion in a process model is a useful exercise aimed at improving complex military operational processes.

5.3.1   Mission Essential Tasks and Mapping

To determine what is necessary for a DSC-led JTF – either state or federal – to function at its highest potential level of operational maturity during a disaster response, it is necessary to identify those essential tasks that must be performed during the conduct of the response. Drawing from established DoD concepts, identifying and listing essential tasks for consideration is similar to developing a Mission Essential Task List (METL). In operational contexts, METLs are tools that help commanders prioritize training activities in preparation for real-world operations. As described in the DoD METL Development Handbook, the premise centers on the identification of tasks that must be prioritized and performed in order to maximize the likelihood of accomplishing a given mission (Department of Defense, 2002). Mission essential tasks are activities that, when performed, are linked with successful outcomes. Multiple

mission essential tasks form a METL. In other words, a mission essential task is a critical function that must occur in order to ensure completion of a particular mission.

While DSCA is a recognized mission capability of the U.S. military, few military units have core DSCA responsibilities. Beyond this, there are currently no DSCA-specific tasks listed in any joint METL within DoD. Since DSCA is a lower-level mission capability and priority for DoD, there is no basis from which we can develop such METLs. [54] However, this is an important consideration for improving future civil support operations; especially those combined state and federal missions using the DSC arrangement. The development of a DSCA or DSC-specific process model is an approach worth considering for future improvement efforts.

In order to determine appropriate METLs – or tasks considerations – for inclusion in a maturity model, model creators seek industry or subject matter experts (SME) to provide input and recommendations through personal interviews and/or focus groups. SMEs help to identify the characteristics of effective processes and are therefore critical to the creation of a maturity model of this kind. As a DoD-endorsed and funded method of process improvement, a maturity model provides us with the ideal architecture to list DSC-specific METLs deemed necessary for a DSCA operation under a DSC. As opposed to other process improvement strategies generally focused on achieving quantifiable business goals and objectives, maturity models emphasize individual task performance within structured levels as a means to generate

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[54] Advisory Panel on Department of Defense Capabilities for Support of Civil Authorities After Certain Incidents: *Before Disaster Strikes; Imperatives for Enhancing Defense Support of Civil Authorities,* Report to the Secretary of Defense and Committees on Armed Services, Washington, D.C.: RAND Corporation, September 15, 2010, p. 21.

comprehensive enhancement. With so many uncertainties, a one-size-fits-all approach is not suitable for DSCA. Due to the variations in scenarios during disaster response, there can be no single quantifiable measure of success applicable to all support operations. Therefore, the ideal process improvement strategy is one that identifies critical tasks for completion and focuses on the structured performance of such tasks. Maturity models offer commanders exactly that: a structured way of identifying, listing, and guiding the performance of critical tasks without the need to identify and work towards quantifiable and often irrelevant objectives.

Since maturity models emphasize specific practices or essential tasks, this process improvement strategy provides commanders with a singular comprehensive tool to view the complexities and the systematic interrelationships of a DSC JTF operation. The ability to view these tasks in a single tool gives commanders the benefit of having multiple task considerations in one location. Using a maturity model approach, this research attempted to model DSC JTF METLs to help commanders make more informed decisions by providing a structured list of tasks for consideration during the conduct of operations. In order to demonstrate the utility of such a tool, I used the available data from this research to create the Dual Status Commander Capability Maturity Model (DSC2M2) to be discussed in Chapter 6.

Chapter 6

DSC2M2 DESIGN AND DEVELOPMENT

As discussed in Chapter 3, I used established research methods combining interviews, focus groups, and document analysis with an iterative qualitative coding process to develop the DSC2M2. This chapter discusses the DSC2M2 in detail addressing the architecture of the model, including components and task inter-relationships the model attempts to represent. It also addresses the interpretation and utility of the DSC2M2 by discussing the various ways the model can be used to guide operational improvement efforts during DSC-led missions. The chapter concludes with a brief discussion of suggestions for implementing the model into future operational decision making efforts and offers recommendations for institutionalizing the practices contained in the model to mature future operational performance.

6.1   Creating the Model

A maturity model is a semantic representation of a process; a conceptual model that presents an abstraction of reality as related to organizational coordination and task performance. Whereas an executable model offers mathematical and logical functions that can be assessed quantitatively, the conceptual nature of a maturity model instead emphasizes the identification and representation of categories, systems, and/or processes in purely qualitative terms to help guide assessment (Alberts, Huber, and Moffat, 2009). Building a conceptual maturity model to represent the complexities of dual status commander-led operations offers a way to enhance information sharing and

organizational coordination. It also provides an improved method of management and governance, which, when combined with enhanced information sharing and coordination, translates into more mature operational capability and performance during complex scenarios. So while the model lacks a quantitative function, the qualitative nature of the DSC2M2 provides a useful semantic representation of a complex process by listing coded tasks deemed useful for the successful performance of a DSC-led response operation.

In order to scope, design, and populate a usable maturity model using established methods, I first needed to determine the focus or purpose of the model. For the purposes of this research, I bounded the model scope specifically to DSC-led federal JTF processes for no-notice/limited-notice incidents – as was the case during Sandy. While the model content may be applicable to pre-planned operations, it is principally designed for a no-notice/limited-notice incident. After determining the scope and purpose, I collected data for the eventual design and population of the model. Suggested data collection methods included individual interviews and focus group interviews (De bruin et al., 2005, Garcia and Turner, 2007). Because maturity models contain specific practices determined to be critical for mature processes, my interviews included questions designed to illicit discussion and identification of essential task requirements during the conduct of DSC-led response operations. After completing the individual interviews, I analyzed the data in order to design and populate the maturity model according to SME input.

A rigorous coding and analysis process was employed in order to facilitate the initial design, construction, and development of the DSC2M2. After all data was collected (interviews, documents, notes, memos, etc), I began the intensive coding

process described in Chapter 3 and covered more thoroughly in Appendix L. Since the basic tenet of a maturity model is to represent a complex process through the identification of best practices relative to each phase of operational maturity, the first step in the coding was to identify best practices – or what I determined to be essential task considerations. In order to do this, I read each document, interview transcript, note page, and memo in my possession. Unlike building the case study findings which required an initially inductive approach to identify themes and patterns in the data, developing the maturity model required a deductive approach to coding in order to find relevant data for appropriate placement within the predetermined model structure. To do this, I first searched the text for discussions or comments related to process successes. I developed a green color-coded highlighting scheme to identify areas relevant to the best practice emphasis and highlighted the material in the text. Following the initial color coding of preliminary best practices, I extracted each individual code from the analyzed documents and inserted them into a new Word document titled "DSC2M2 Best Practices List Draft." All green-coded best practices were inserted into this document in a list format and in no particular order. The purpose of creating this document was simply to consolidate all of the coded best practices from several documents into a single workable document for further analysis. This document served as the initial foundation for populating the DSC2M2. After creating the initial coded data frames for populating the content of the model, the next step in the model development process was to design the model architecture. The following sections discuss the DSC2M2 model architecture and its intended interpretation and utility for future operations. Each capability and maturity level table

has been extracted from the DSC2M2 NORTHCOM file for illustrative purposes only; not an endorsement of this particular model variant.

6.2   Components of the DSC2M2

The DSC2M2 uses the CMMI structure as a basis for its design. However, during the course of the data collection, I began to realize that certain elements of the CMMI architecture were irrelevant or unnecessary for the maturity model I was attempting to build for this research. CMMI and other similar models integrate specific goals and practices into each maturity level that must be accomplished in succession to progress through the maturity levels. This is a more prescriptive approach whereas the model I was building needed to be more descriptive in nature in order to reflect the relative uncertainty of a DSC-led disaster response. Since disaster response requirements are uniquely suited to the specific situation, developing and listing specific, prescriptive goals is not a viable course of action for this model. In order to avoid focusing on the development of arbitrary measures of performance, I departed from the traditional CMMI structure and decided to exclude specific goals from the DSC2M2 architecture. The remaining model components are similar to that of a CMMI model and include specific practices (or essential tasks as I refer to them here), process areas, and maturity levels as shown in Figure 20. The following sections describe each component of the model architecture in detail and offer examples of each within the context of the final DSC2M2.
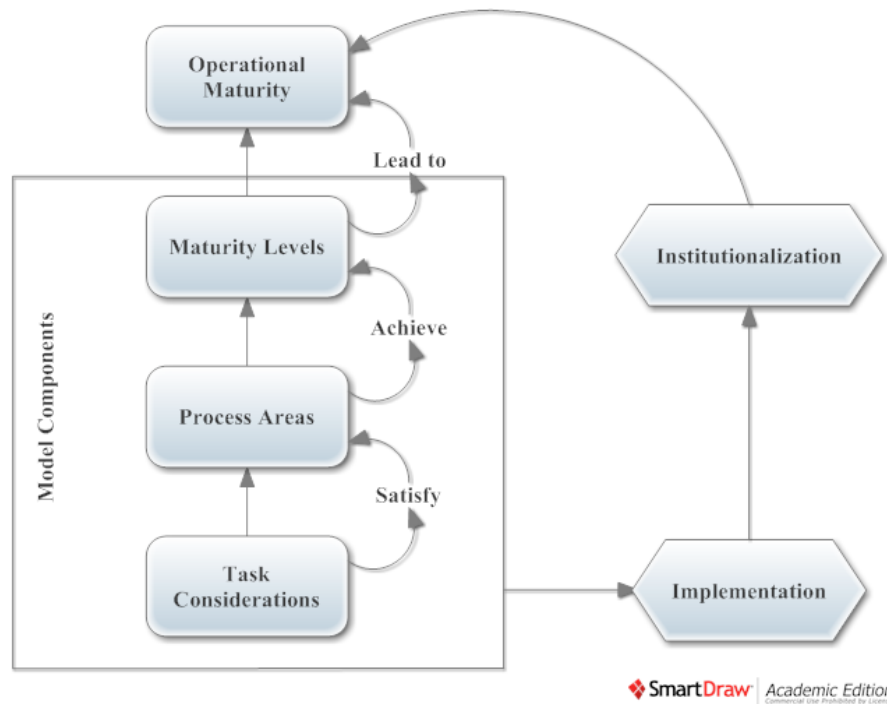
Figure 20: DSC2M2 Components

6.2.1   Task Considerations

The first model component within the DSC2M2 is the task consideration. On a

subordinate level to process areas, task considerations represent individual actions or

activities deemed helpful to enhancing operational performance and maturity. As there

are dozens of notable tasks performed during a dual status commander-led response

operation, identifying and coding task considerations for inclusion in the model

required an exhaustive review of the collected data. To do this, I again applied a

deductive coding scheme to the previously generated coded list of essential tasks

noted in section 6.1. This was done in order to separate each task into its respective

process area (discussed in section 6.2.2) for population of the model. This was

accomplished through the use of a similar color-coded approach used in the previous

coding efforts. Tasks relevant to the Information process area were coded in yellow highlight; Operations in blue highlight; Communications in green highlight (see 6.2.2 for a discussion of process area development). The first iteration of the DSC2M2 consisted of 92 coded tasks within the three defined process areas. Determining the appropriate maturity level placement (1-5) for each of the 92 coded tasks was initially reliant on my own logic and rationale based on the ongoing research effort. The original version of the model was then presented separately to two focus groups. I created revised versions of the model based on the recommendations of each focus group. In total, I created three versions of the DSC2M2 (Original, Focus Group 1 – Policy, Focus Group 2 – Operations).

One significant departure from the CMMI architecture worth noting is the lack of specific goals within the DSC2M2. As noted earlier, dual status commander-led response operations – like all response efforts – are never the same. Therefore, establishing pre-determined and uniform goals for inclusion in the model is an unnecessary activity largely irrelevant to the potential success and utility of the model. Performing the essential task considerations contained within each level of the maturity dimension is all that is necessary for a DSC JTF to improve its operational maturity.

6.2.2   Process Areas

Since the CMMI structure serves as the base design for the DSC2M2, I needed to develop a series of process areas to further group the listed task considerations. According to Curtis et al. (2009), a process area is "a cluster of related practices that, when performed collectively, satisfy a set of goals that contribute to the capability gained by achieving a maturity level" (p. 45). Process areas provide structured

mechanisms that facilitate the grouping of inter-related best practices and the institutionalization of the practices relative to each maturity level. In order to develop these process areas in consonance with the definition provided by maturity model experts, I inductively analyzed the data in the DSC2M2 Best Practices List Draft document for common themes and related concepts. After an initial inductive approach to identify related themes within the coded best practices data set, I began to see patterns and commonalities emerge within the data that would serve as a basis for the next iteration of the coding process.

       With my previous military experience, I know that military organizations are often organized into sections relative to a capability and numbered accordingly. Military historians and strategists largely attribute this organizational staff structure to Napoleon Bonaparte and his attempts to generate a more efficient and effective command and control system for operating the Grand Armee (Van Creveld, 1985; Durham, 2009). As it separates staff sections into individual cells responsible for a series of related practices, this "Napoleonic Structure" has remained mostly unchanged since the 18th century. Figure 21 presents a simplified version of the current Napoleonic Structure used in most modern U.S. military units. The graphic excludes other staff sections (legal, finance, medical, etc) that provide valuable services but are not generally included as part of the operational command hierarchy. Given the already clustered nature of the Napoleonic Structure used by the military today, this presented an obvious and familiar architectural basis for grouping process areas within the final maturity model.
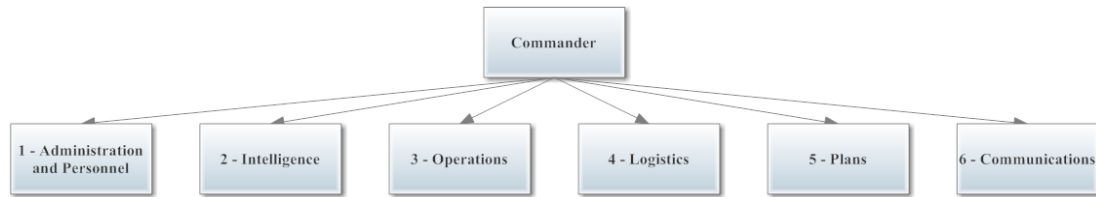
Figure 21: Napoleonic Structure - Modern Era

To promote consistency and usability of the model, I elected to limit the amount of process areas contained in the model. In doing so, I chose to consolidate the traditional Napoleonic Structure above into three process areas representing the related clusters of practices within the dual status commander operational landscape. I then named each process area with a single descriptive term broadly representing the focus of the process area. After an initial attempt to code the data into each of the three process areas, I realized that my attempts to consolidate the process areas resulted in further ambiguities regarding the placement of the coded data into a single and uniformly relevant process area. I determined that I needed additional categories within each of the three process areas to facilitate the most accurate placement of each task within the most applicable process area. Using the same logic for choosing the Napoleonic Structure, I expanded the deductive approach used above and again elected to integrate an existing and familiar military organizational assessment framework into the maturity model architecture: DOTMLPF-P.

Doctrine, Organization, Training, Material, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P) represents the categories used by DoD to conduct and assess warfighting capability gaps, or capabilities-based assessments (CBAs) intended to identify and solve mission-related problems (Chairman of the Joint Chiefs of Staff,

2012a). DOTMLPF-P is another familiar acronym among military planners and commanders that is not only relevant to the model structure but further helps to guide the placement of the identified task considerations in the final model. After integrating DOTMLPF-P with the Napoleonic Structure, the process areas and their inclusive content areas are as follows:

- Information (Personnel, Intelligence, Doctrine, Training, Leadership, Policy)
- Operations (Operations, Logistics, Plans, Organization, Materiel, Facilities)
- Communications (Communications, Accounting, Public Affairs, Legal, Medical, Liaisons)
- Purpose Statements: Informative component of the model that describes the substance of the process area and the intent of the listed task considerations

6.2.3   Maturity Levels

After establishing codified process areas with descriptive content to organize the task considerations, I needed to group the material into progressive levels of operational maturity. Maturity levels are evolutionary plateaus that help to guide and institutionalize process improvement and enhance workforce maturity (Curtis et al., 2009, Carnegie Mellon University, 2010). Organizations increase operational sophistication through the performance of defined tasks and practices contained within the progressive levels of a maturity model. In addition to guiding improvement efforts, maturity levels offer organizations the ability to characterize their performance against a series of structured metrics. In the context of the DSC2M2 and similar to the basic CMMI structure, a maturity level contains multiple process areas, each containing several essential task considerations that should be targeted in order to satisfy the desired maturity level.

6.3   Structure of the Model

The structure of the DSC2M2 – like the above components – also follows similar design architecture to most CMM/CMMI models contained in the literature. The model uses a numbering scheme like that of CMM/CMMI as well as identical terms to describe the capability and maturity dimensions of the model. The following subsections describe the model structure and offer suggestions for user interpretation. The sections also include examples extracted from one of the final variants of the DSC2M2 in order to illustrate the content contained in the completed product.

6.3.1   Numbering Scheme

The DSC2M2 again uses a similar numbering scheme to CMMI models. Capability and maturity levels are numbered in a hierarchical progression with 1 representing the lowest level on the progressive scale. The generic tasks within the capability dimension are numbered sequentially as well. Each generic goal and task starts with a prefix: "GG" or "GT." A number relative to the capability level (for example, GG 1) follows the generic goal. Generic tasks are followed by an *x.y.* numbering sequence; with *x* mapping to the generic goal and *y* indicating the task number in the sequence (for example, GT 1.1).

The maturity dimension uses a similar numbering scheme. In this case, task considerations are numbered using an *a.b.c.d.* format where:

   (*a*) = maturity level (1,2,3,4,5)

   (*b*) = process area (I – information; O – operations; C – communications)

   (*c*) = task consideration (TC)

   (*d*) = number in the sequence

Ex: Maturity level 2, Operational process area, Task Consideration 3 = "2OTC3."

6.3.2 Capability Levels

The capability dimension of the DSC2M2 is primarily intended to serve as a guide for pre-operational activities at the macro level – or strategic planning stage. Similar to CMMI models, the capability dimension in the DSC2M2 contains multiple capability levels with included generic goals and tasks in each level. However, whereas CMMI capability levels are linked with process areas contained in the maturity dimension, all but one of the capability levels within the DSC2M2 are independent of the maturity dimension of the model. For the DSC2M2, achieving a capability level can be done through the performance of each generic task within a capability level. By completing the generic tasks in each capability level, users accomplish the generic goal that defines the capability level. While not included in the final DSC2M2, capability levels may also include sub-tasks associated with the fulfillment of generic tasks (Figure 22). Users progress through the capability levels in a hierarchical manner (1-4) by performing each of the listed tasks and goals for each level in succession. Capability level 1 is considered a basic, or entry level, series of requirements that must be performed before proceeding to the next level. Each level and its components are discussed below.
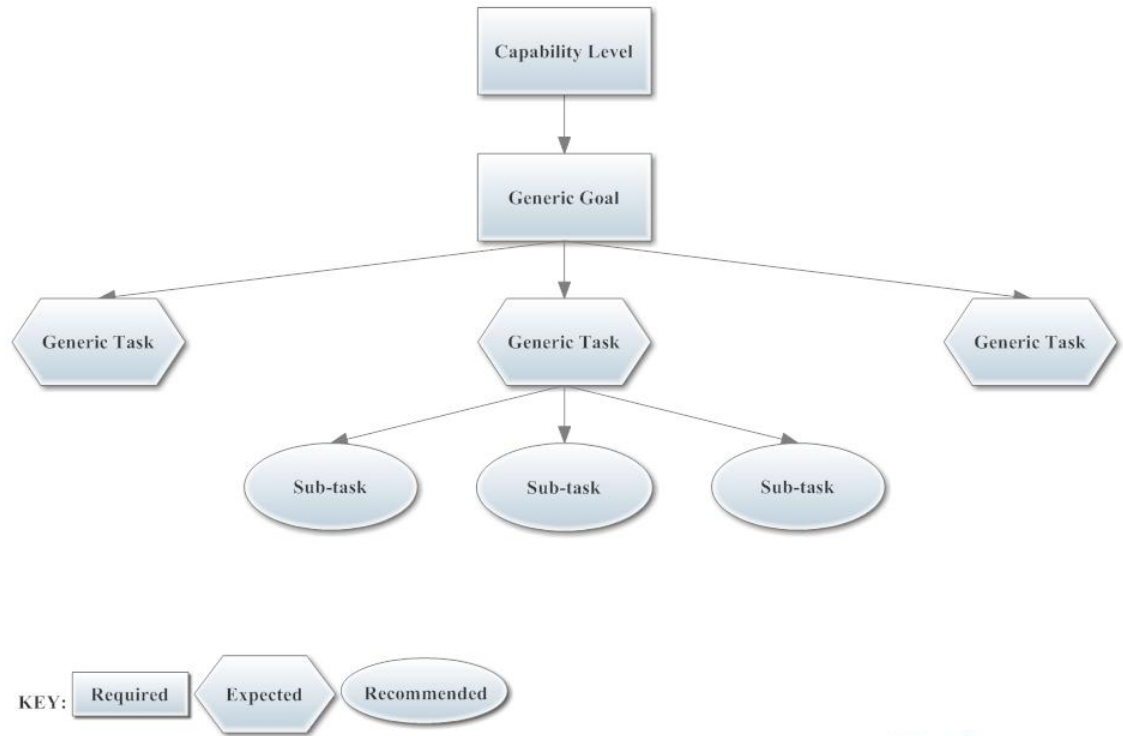
Figure 22: DSC2M2 Capability Level Structure

6.3.2.1 Capability Level 1: Defined

The first capability level is characterized as a defined process. To achieve a defined dual status commander process, users must achieve the five generic tasks (shown in Table 8) associated with this level; each of which involves the development and publication of particular DSC-specific reference sources deemed necessary to guide the performance of DSC-led response operations. Following the completion of all five tasks, a defined process will be institutionalized.

Table 8: Capability Level 1: Defined

Defined: GG 1: Institutionalize a defined process
GT 1.1: Publish a dual status commander standard operating procedural manual
GT 1.2: Publish a dual status commander defense directive
GT 1.3: Publish a dual status commander joint operating doctrinal publication
GT 1.4: Publish a dual status commander multi-service tactics techniques and procedures reference
GT 1.5: Publish a dual status commander concept of operations (CONOPS)

6.3.2.2 Capability Level 2: Managed

The second capability level is characterized as a managed process. To achieve a managed dual status commander process, users must achieve the three generic tasks associated with this level (shown in Table 9). The managed process builds on the material included in capability level 1 and includes three tasks that reflect the noted need for planning, assessment, training, and supervision within the DSC environment. Following the completion of all three tasks, a managed process will be institutionalized.

Table 9: Capability Level 2: Managed

Managed GG 2: Institutionalize a managed process
GT 2.1: Develop and implement after action/lessons learned collection reporting process
GT 2.2: Use published reference material to assist in planning support operations
GT 2.3: Establish, operate, and maintain a dual status commander training and certification program

6.3.2.3   Capability Level 3: Proactive

The third capability level is characterized as a proactive process. To achieve a proactive dual status commander process, users must achieve the four generic tasks associated with this level (shown in Table 10). The proactive process builds on the material included in capability level 2 and includes four tasks that reflect the need for pre-certification, agreements, approvals, and simulations prior to conducting DSC operations. Following the completion of all four tasks, a proactive process will be institutionalized.

Table 10: Capability Level 3: Proactive

Proactive GG 3: Institutionalize a proactive process
GT 3.1: Train and certify at least one dual status commander in all 54 states and territories
GT 3.2: Publish and sign a dual status commander Memorandum of Agreement between DoD and 54 states and territories
GT 3.3: Conduct dual status commander-led exercises and simulations/training
GT 3.4: Obtain SECDEF and Governor pre-approval of designated dual status commanders for consequence management operations

6.3.2.4   Capability Level 4: Adaptive

The fourth capability level is characterized as an adaptive process. To achieve an adaptive dual status commander process, users must begin to perform the essential tasks associated with the maturity dimension of the DSC2M2. The adaptive process is different from the three previous capability levels because it does not include specific and measurable tasks but rather a single task (shown in Table 11) that instructs users to begin performing the essential tasks in the maturity dimension. Because the tasks in capability levels 1-3 reflect preparatory actions required prior to the conduct of a

DSC-led response, users who satisfy these levels will (conceptually) be ready to perform a DSC-led response using the maturity dimension as a guide to performance. Beginning to implement the essential task recommendations within the maturity dimension assumes completion of the goals and tasks through capability level 3 which indicates an enhanced operational capability and therefore satisfies the final capability level of the DSC2M2.

Table 11: Capability Level 4: Adaptive

Adaptive GG 4: Institutionalize a mature process
GT 4.1: Perform maturity level task considerations

6.3.3   Maturity Levels

The maturity dimension of the DSC2M2 contains 5 maturity levels; each containing three process areas and several essential tasks intended to help improve operational performance under a dual status commander-led disaster response as shown in Figure 23. As with capability levels, maturity levels are satisfied with the performance of each essential task relative to the three process areas within each level. The following section discusses the five levels of DSC2M2 maturity.
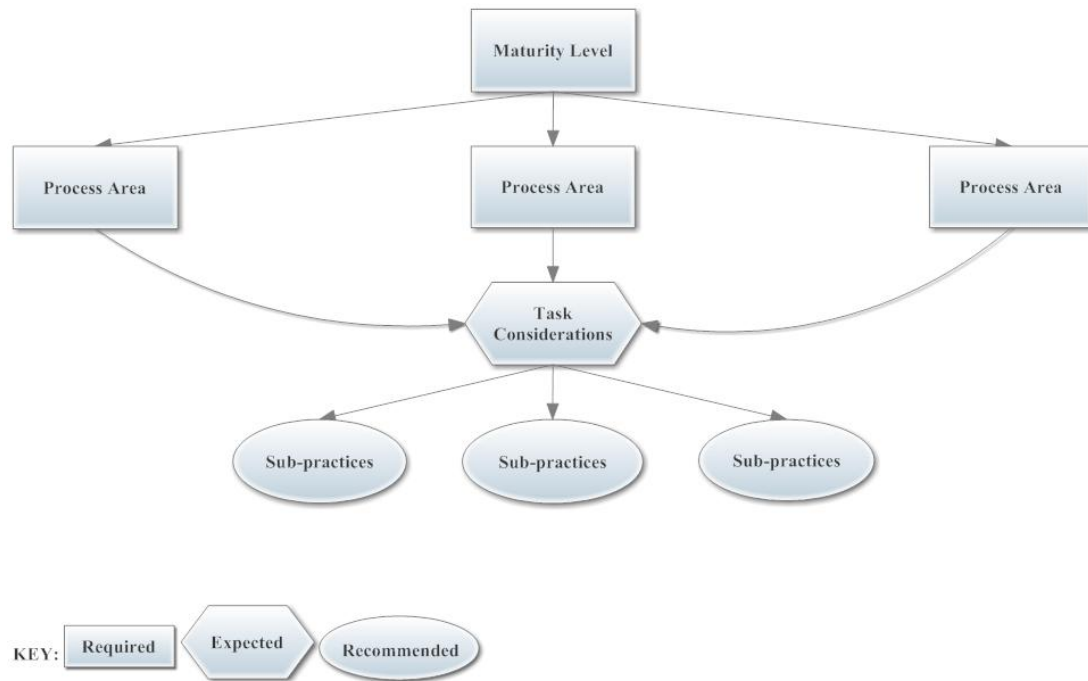
Figure 23: DSC2M2 Maturity Level Structure

6.3.3.1 Maturity Level 1: Reactive

The Reactive maturity level represents the initial, often ad hoc and unrehearsed − or reactive − stages of a DSC-led response. At the reactive level, staff functions within the DSC JTF reflect basic requirements needed to perform at the lowest level of operational maturity. In the reactive phase, operations are in the beginning stages of development where information gathering is most critical to progress into higher stages of maturity. As with the remaining maturity levels, the reactive level contains a general purpose statement, three process areas, and multiple essential tasks relative to each individual process area, as shown in Table 12.

Table 12: Maturity Level 1: Reactive

Maturity Level	Level 1 - Reactive		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Reactive maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Reactive maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Reactive maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	1ITC1: Obtain SECDEF approval for DSC activation	1OTC1: Pre-deploy T10 deputies to areas expecting DSC activation	1CTC1: Deploy DSC JTF Liaison Officers (LNOs) to key agency nodes like the state EOC, JFHQ
	1ITC2: Assign Anti-Terrorism/Force Protection (ATFP) role to member of DSC JTF staff	1OTC2: Request a Restricted Operating Zone (ROZ) from the FAA (if necessary based on situation)	1CTC2: Establish communications link between LNOs / Emergency Preparedness Liaison Officers (EPLOs) and the Defense Coordinating Officer
	1ITC3: NORTHCOM deploys DSC Staff Augmentation IOT facilitate quicker staff augmentation and ensure J1-8 manning	1OTC3: Initiate NG presence patrols in known affected areas to generate initial situational awareness	1CTC3: Deploy DSC JTF LNO to DCO (FEMA JFO); request DCO LNO for DSC JTF

Table 12 continued

	1ITC4: Get initial Incident Awareness Assessment (IAA) information from civilian agencies	1OTC4: Conduct Search and Rescue (SAR) operations, as requested, for first 72 hours following establishment of JTF	1CTC4: Establish wired/wireless internet capability in JOC/JTF HQ IOT facilitate required communications
	1ITC5: Issue Prepare to Deploy Orders (PTDO) for anticipated T10 forces	1OTC5: Rotate (2) T10 personnel on 12 hour shifts in Current Operations to ensure 24 hour coverage and continuity	1CTC5: All JTF personnel deploy w/ and use organic military and personal communications equipment until sustainable communications can be established
	1ITC6: Generate and deliver threat briefing to DSC daily	1OTC6: Preposition anticipated T10 forces at nearby federal installations for future activation as needed	
		1OTC7: Identify Base Support Installations (BSI) w/in or near JTF JOA	
		1OTC8: Develop, publish, and disseminate a DSC JTF mission statement and commander's intent	

6.3.3.2 Maturity Level 2: Convergent

The Convergent maturity level represents an improving stage of a DSC-led response. At the convergent level, both state and federal staff functions within the DSC JTF reflect an increasing sense of awareness and information sharing. State and federal communications begin to connect – or converge – and establish the foundation for progressive action. Joint planning actions are performed and operational boundaries are established. Tasks performed in the convergent phase indicate an effort to begin integrating state and federal force activities and drive towards unifying efforts. This level also contains a general purpose statement, three process areas, and multiple essential tasks relative to each individual process area, as shown in Table 13.

Table 13: Maturity Level 2: Convergent

Maturity Level	Level 2 - Convergent		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Convergent maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Convergent maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Convergent maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	2ITC1: Standardize and define Verbal Orders of the Commander (VOCO) process and requirements	2OTC1: Locate and establish communication with the DCO	2CTC1: All subordinate JTF Task Forces (TF) in JOA deploy LNO to DSC JTF

Table 13 continued

	2ITC2: Obtain additional staff to conduct staff operations based on the Battle Rhythm and anticipated force size under the JTF.	2OTC2: Generate and publish a command and control wire diagram in the JOC (include names/contact info of all key personnel w/ in C2 wires)	2CTC2: Generate and publish a document containing relevant legal considerations (decision flow chart, etc) for joint force actions pertaining to Posse Comitatus, Insurrection Act, Stafford Act, Economy Act, etc.
	2ITC3: Incorporate METOC analysis in daily Commander's Update Brief (CUB)	2OSP: 3: Conduct mission analysis of possible civilian capability gaps and generate a list of possible military solutions to include EMAC, Active Duty forces, etc.	2CTC3: Conduct reoccurring situational awareness meeting among staff, i.e. T10 staff huddle
	2ITC4: Brief all newly arriving personnel on general situation and mission	2OTC4: Create JRSOI concept and source to support deploying forces.	2CTC4: Build and maintain the ability to conduct mission tracking and excess capability in JOC
	2ITC5: Develop and publish Commander's Critical Information Reporting (CCIR) requirements	2OTC5: Assess and disseminate operational boundaries for DSCA w/in JTF JOA (consider state borders for each DSC	2CTC5: Develop PACE (Primary, Alternative, Contingency, Emergency) plans for critical services, systems, capabilities and circulate among JTF staff and commanders

Table 13 continued

		2OTC6: Identify and converge on a single NG base/facility IOT stand up the JTF HQ	2CTC6: Identify closest medical facilities/hospitals by trauma level and establish contact in the event of a contingency requirement
		2OTC7: Hold a daily logistics coordination board (LCB) meeting with logistics HQ supporting the operation	
		2OTC8: Establish a Current Operations Center and a Future Operations Center	

6.3.3.3 Maturity Level 3: Integrated

The Integrated maturity level represents an intermediate stage of a DSC-led response. At the integrated level, both state and federal staff functions within the DSC JTF show signs of collective integration through unified efforts. State-controlled National Guard and federal military force activities in this stage indicate a managed and supervised process. In contrast to the reactive and convergent levels, operational tasks and decisions at the integrated level represent the beginning stages of structured coordination across state and federal organizational boundaries. Task considerations in this level include suggestions for establishing broad-level information sharing platforms and increasing communications between state and federal agencies involved in the response effort. As with the previous levels, the integrated level also contains a

general purpose statement, three process areas, and multiple essential tasks relative to each individual process area, as shown in Table 14.

Table 14: Maturity Level 3: Integrated

Maturity Level	**Level 3 - Integrated**		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Integrated maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Integrated maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Integrated maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	3ITC1: Teleconferences are conducted daily between DSC JTF, JFHQ, and JFLCC J1-2	3OTC1: Conduct daily situation report/story board/significant activities (SIGACT) briefing with integrated T10/T32 staff	3CTC1: Build webpage IOT facilitate knowledge integration among joint force and enhanced communication in the JOC
	3ITC2: Form functional Board Bureau Center Cell Working Groups (BBCCWGs)	3OTC2: Integrate T10/T32 into future operations cells and plans IOT publish joint FRAGOs	3CTC2: Develop and implement a file tree structure/folder taxonomy on network share drive complete with J1-J8, + miscellaneous cells (SJA, PAO, etc)

Table 14 continued

	3ITC3: Synchronize mission tasking at JTF to provide unity of effort in Active and National Guard support to the affected area.	3OTC3: Establish a priority of work list and allocate resources according to priorities	3CTC3: Deploy a DSC JTF LNO to US Army Corps of Engineers (USACE) IOT integrate Emergency Support Function (ESF) 3 planning into current and future operations
	3ITC4: Develop and publish joint battle rhythm for real-time updates and improved situational awareness	3OTC4: Develop and maintain Common Operating Picture medium for use in JOC (Defense Connect Online; Google Earth, etc)	3CTC4: Use Defense Connect Online to publish and broadcast daily Commander's Update Brief (CUB)
		3OTC5: Place a Current Operations staff member in Future Operations to integrate planning efforts and ensure accurate SA upon shift turnover	3CTC5: Integrate Public Affairs (PA) assets into JTF ground-based operations and develop a PA message for media coverage
		3OTC6: Assign one officer role of verbally briefing status updates to the JOC as needed	3CTC6: Integrate J8 (accounting/comptroller) personnel into JTF staff for financial advising WRT mission assignments and processes
		3OTC7: Designate NG officer as "Air Boss" to integrate T32/SAD assets into support operations	

Table 14 continued

		3OTC8: Develop and maintain a Mission Assignment tracker including requests, approvals, and execution status columns	

6.3.3.4   Maturity Level 4: Coordinated

The Coordinated maturity level is the second highest stage of operational maturity within a DSC-led response. At the coordinated level, state and federal staff functions within the DSC JTF are connected through multiple information sharing mechanisms. Operational decision making is based largely on shared situational awareness and a common operating picture across state and federal boundaries. State-controlled National Guard and federal military force activities are directed under a unified commander's intent that limits issues of force redundancy. Operations at the coordinated level of maturity occur under the awareness and tactical control (except for federal force activity under IRA) of the DSC JTF. Task considerations in this level include suggestions for information sharing between the DSC JTF and external federal force activities under Immediate Response Authority, as well as mechanisms for improved administrative functions to clarify operational decision authority. The coordinated level also contains a general purpose statement, three process areas, and multiple essential tasks relative to each individual process area, as shown in Table 15.

Table 15: Maturity Level 4: Coordinated

Maturity Level	Level 4 - Coordinated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Coordinated maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Coordinated maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Coordinated maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	4ITC1: Establish information linkages with military IRA forces to understand what mission they are performing	4OTC1: Implement and employ LOGSTAT tracker in JTF with personnel assigned for real-time updates and shortfall requirements identification	4CTC1: Deploy and employ a Contingency Contracting Officer (CCO) to review support requests and ensure clarity
	4ITC2: Share intel reports between JTF, NORTHCOM, and JFHQ	4OTC2: Define and disseminate geographic limits in JOA for T10 IRA (i.e. selected counties) and maintain a tracker for all IRA activities	4CTC2: Use the Joint Acquisition Review Board (JARB) to track and assist CCO process contracting requests
	4ITC3: Coordinate and execute meetings between DSC JTF and T10 forces upon arrival in JOA	4OTC3: Coordinate with JFLCC/ARNORTH and establish contingency T10 sourcing conditions (if NG cannot fulfill request)	4CTC3: Ensure Staff Judge Advocate (SJA/JA) reviews all mission assignments, orders, etc. for compliance with laws and statutory requirements

Table 15 continued

	4ITC4: Identify and empower one DCO with MA process/approval authority (when multiple DCOs are deployed to support an incident)	TC4: Coordinate with JFMCC (USFF), JFACC, and JFLCC (ARNORTH/MARN ORTH) IOT ensure general SA of maritime, air, and ground operations in support of mission	4CTC4: Identify the funding source/legislation for all NG operations (in T32); agreed upon by approving authorities
	4ITC5: Develop list of nearby military capabilities that may be used as the situation warrants under IRA	4OTC5: Develop and maintain coordination link between JTF, State EOC, and FEMA	4CTC5: Coordinate w/ JTF ground-based PA assets and include PA personnel in JTF HQ to field media inquiries, VIP visits, etc.
		4OTC6: DSC conducts daily site visits to forces operating w/in JOA	4CTC6: SJA/JAG provides legal brief to DSC and deputies concerning the Responsible Use of Force (RUF)
		4OTC7: Conduct daily teleconferences with a single representative from all J-shops in JTF	
		4OTC8: Coordinate lodging, meals, vehicles, etc. for T10/T32/SAD personnel in JTF	

6.3.3.5 Maturity Level 5: Collaborative

The Collaborative maturity level is the highest and most mature stage of operational performance within a DSC-led response. Recommended tasks in the collaborative level are the most demanding tasks within the entirety of the model. Performing the listed collaborative tasks helps to ensure combined state and federal response efforts contribute to the same tactical, operational, and strategic objectives. DSC JTFs operating in the collaborative maturity level have achieved comprehensive unity of effort between state and federal partners. Operations occur under a common operating picture and contribute to the completion of objectives and overall mission accomplishment. There are no information gaps at the collaborative level of maturity; both state and federal force activities are in harmony with each other and working towards a common goal. The collaborative level contains a general purpose statement, three process areas, and multiple essential tasks relative to each individual process area, as shown in Table 16.

Table 16: Maturity Level 5: Collaborative

Maturity Level	Level 5 - Collaborative		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Collaborative maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Collaborative maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Collaborative maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures

Table 16 continued

Task Considerations	5ITC1: Post relevant tactical and operational documents, like OPORDS and DSCA Execution Order (EXORD), or quick reference publications	5OTC1: Implement and employ single electronic tracking system for all (T10/T32/SAD) unit movements/activities (i.e. Blue Force Tracker, SAGE, etc)	5CTC1: Assign personnel from T10/T32/SAD to operate/maintain situational awareness tools such as BFT, SAGE, etc as primary function
	5ITC2: Issue standing General Order for T10 usage conditions	5OTC2: Collaborate with T10/T32/SAD leaders IOT establish defined exit strategy and conditions for redeployment	5CTC2: DSC JTFs, in conjunction with JFO and DCO have process mechanism in place to draw down and terminate T10 force support at mission completion
	5ITC3: Develop a single/uniform reporting format for all T10 and T32/SAD J1/2 reports	5OTC3: For a large State incident with a large number of Active Duty forces supporting, that may require multiple DCOs to support, indentify a single DCO to be in charge of the DOD MA process for that state	5CTC3: Draft PA message campaign and craft talking points to influence public perception in consonance with established points

Table 16 continued

	5ITC4: DSC JTF issues all subordinate Task Force timely and complete execution orders	5OTC4: JFO/JFHQ/State EOC are co-located in same area to minimize lag time and enhance collaboration	5CTC4: Assign DSC JTF staff member to monitor news media, social media, etc. for enhanced situational awareness; incorporate knowledge into daily commander's update briefs
	5ITC5: Maintain and update force structure manning and requirements as needed	5OTC5: Generate approved mission assignments for IRA forces (as needed)	5CTC5: Capture all operational costs and/or estimates for future processing
		5OTC6: Staff JTF with a budget/finance advisor to serve as a reimbursable authority SME (MA fund codes, processing, etc)	

6.4   Model Variants

The above model content is provided for illustrative purposes only. This research produced three variations of the DSC2M2. After populating the first version of the DSC2M2 based on the interview and available document data, I scheduled and conducted two focus groups to further assess and validate this populated version of the model. As discussed in Chapter 3, I held two focus groups with subject matter experts representing different analytical perspectives; one with policy-oriented employees within the Office of the Secretary of Defense, the other with operationally-oriented

employees with U.S. NORTHCOM. I presented the same initial model design and content to each group and led a discussion assessing the accuracy, content, structure, utility, and interpretation of the model. While the intent was to solicit different opinions to ultimately contribute to the development of a final version of the DSC2M2, the varying perspectives offered by the two focus groups presented a significant challenge during the analysis phase of this research. Despite achieving consensus on various elements of the model, there were also polarizing issues and differences of opinion between the two groups. As a result of this and in order to avoid any perceived attempt to broker a solution set between the two groups, I chose to include three model variants in Appendix M of the dissertation; the first being the initial version of the model developed following initial analysis of the data; the next two representing the suggested changes and revisions resulting from each focus group and labeled accordingly:

- DSC2M2 – INITIAL
- DSC2M2 – HD/ASA
- DSC2M2 – NORTHCOM

While the three models differ in content, their design and intended utility remain consistent.

6.5   DSC2M2 Interpretation and Implementation

By using a maturity model structure containing documented best practices or essential tasks, commanders can improve operational maturity by progressing from an undefined, ad hoc process to a well-defined, mature process. As noted in the previous sections, becoming "more mature" is a progressive process that involves the performance of increasingly complex tasks. According to the progression noted in the

DSC2M2, the lowest level of operational maturity – Reactive – involves information gathering tasks required to gain the necessary situational awareness for developing response efforts. The second level – Convergent – involves a greater effort to begin connecting state and federal information sharing efforts. The third level – Integrated – involves the establishment of management and supervisory mechanisms that integrate both state and federal efforts within the Joint Task Force. The fourth level – Coordinated – involves an enhanced degree of state and federal information sharing with most operations occurring within the purview of the dual status commander. The fifth and most mature level – Collaborative – involves tasks completed under a unified effort and a common operating picture between state and federal forces. The fifth maturity level does not contain any information gaps between state and federal forces. Both entities are operating in support of a common goal.

In addition to using the DSC2M2 as a method of guided progression through increasing operational maturity levels, maturity models can be used as a metric of performance, or a rubric of sorts, for post-operational evaluations and after-action reporting. Using the model as a guide, commanders and their staffs can assess their performance by determining which tasks were or were not performed to determine an achieved maturity level after a response. Regardless of intended application, the basic design and concept of a maturity model offers military units a useful method of mapping complex processes and increasing operational maturity. So, despite the size and apparent complexity of the DSC2M2, interpreting the model is simple. With both a capability and maturity dimension, users of the DSC2M2 can interpret the model using the same approaches noted in Chapter 2 discussing target profiles.

6.5.1   Target Profiles

Target profiles are mechanisms that help guide process improvement efforts by identifying performance targets for an organization to focus their improvement (Chrissis et al., 2007). The design of the DSC2M2 is compatible with two methods of target profiling similar to the approaches used with CMMI. The first method – similar in concept to the continuous improvement approach discussed in chapter 2 – involves the identification of a process area for targeted improvement. Users choose one of the three process areas (information, operations, communications) contained in the maturity dimension for the focus of their improvement efforts. After selecting a single process area for improvement, users next determine their desired maturity level (1-5) for the chosen process area. The desired maturity level becomes the target for future improvement efforts. Users attempt to achieve the targeted level by working to perform each of the tasks in only the selected process area beginning with maturity level 1. A maturity level is achieved when users have successfully performed all of the process area-specific tasks relative to a maturity level.

The second approach offered by the DSC2M2 allows users to target a specific capability level rather than a process area-specific maturity level. In this approach, users develop target profiles for the achievement of a desired capability level within the capability dimension of the model. Because the capability dimension of the DSC2M2 reflects pre-operational tasks and requirements, a tiered approach to achieving a higher capability level is expected in the initial stages of operational planning, with the end goal to perform at a level 4 capability – or in the maturity dimension of the model. This targeted approach reflects a sequential and linear approach to capability improvements and is intended to guide capability enhancements prior to the conduct of an operation.

6.5.2 Staged Improvement

Like staged representation used in CMMI, the DSC2M2 offers a broader macro-focused improvement framework. In CMMI staged representation, users work to achieve the task considerations within each process area of each of the five maturity levels, starting at level 1, and progressing through the levels sequentially. While the DSC2M2 uses a similar progressive maturity structure with associated tasks relative to each maturity level, the intent of the model – unlike CMMI – is to serve as a guide for task performance rather than a prescriptive checklist of tasks that must be performed to gain maturity. There is no instruction or expectation in the DSC2M2 structure that requires users to perform the listed tasks in sequence when using a staged improvement approach. The purpose and intent of the DSC2M2 staged improvement is to offer users a decision support tool comprised of a comprehensive list of task considerations, grouped according to their perceived complexity and operational maturity. If an acting dual status commander deems certain tasks unnecessary at the given time, there is no expectation that he/she must perform those tasks in order to achieve a successful outcome. The tasks are listed in the model structure to offer commanders and their staffs a list of considerations and to help limit the uncertainty of the operational situation by providing suggested actions known to help improve the efficiency and effectiveness of a DSC-led response effort. Simply using the model as a guide, I argue, is enough to lead to greater operational maturity compared with past operations where the DSC2M2 was not available. Beyond these pre-operational and in-progress improvement methods, the DSC2M2, like other maturity models, offers users a post-operational assessment tool that also provides value for future improvement efforts.

6.5.3 Performance Rubric

Maturity models in general are similar to performance rubrics. The models offer organizations structure for conducting self-assessments of performance against a series of listed practices or tasks. In performing these self-assessments, organizations can use maturity models to determine their organizational or operational maturity by using the model content as a list of individual performance metrics. The DSC2M2 can be used in this manner as well. To perform a self-assessment, users approach the model content as a series of binary metrics: 0 – not completed; 1 – completed. Beginning with the first task in maturity level 1, users conduct post-operational assessments using any available data to determine whether the listed task was or was not performed. A DSC JTF achieves a post-operational maturity level rating by performing all of the listed tasks within the three process areas of each maturity level. This approach offers users a method for post-operational assessment and future improvement by calling attention to those activities that were or were not performed during the operation and what, if any, level of maturity was achieved during the operation.

6.5.4 Sustained Implementation and Continuous Improvement

The previous sections address how the DSC2M2 can be both interpreted and implemented into practice. Beyond understanding the basic design and intended function of the model, it is necessary for military end-users to also maintain a sustainment and improvement plan as the model is used during future operations. As military operations evolve, the tools used to support them must evolve as well. Therefore, it is important that the DSC2M2 be assigned to a particular staff element of a joint task force during the conduct of future no-notice/limited-notice response

operations. Assigning responsibility for model implementation and post-operational assessment to a JTF staff element will ensure the DSC2M2 is not only used but also continuously improved based on the lessons learned from each future operation. The JTF staff member(s) assigned to ensure DSC2M2 implementation during the execution of a response effort should also be responsible for generating continuous model improvements during post-operational assessments and after action reporting procedures. Adopting a sustained improvement plan such as this will ensure a continuous stream of lessons learned with regard to the DSC2M2 which will further improve its utility and value for future operations.

6.6   Conclusion

Using the maturity model approach discussed in this dissertation offers an alternative method to plan for and execute military civil support operations under the dual status commander arrangement. Developing METLs is a familiar practice for most military planners; and despite their similarities, maturity models are not. Due to the intricacy and uncertainty in most DSCA operations, scripting a mission from beginning to end is unrealistic as requirements and situations often change. Rather than attempting to plan for every possible scenario and inundating themselves in detailed plans and orders, commanders and their staffs should instead emphasize the identification and execution of mission-essential tasks as a method for gaining operational maturity. As discussed in this chapter, process improvement strategies can provide an alternative approach to enhancing performance during the uncertainty of DSCA response missions. By generating METLs and/or task considerations and graphically depicting them in maturity models like the examples above, commanders

can reference these tools as guides to effective practice without sacrificing decision-making flexibility.

As discussed, process improvement methods are used extensively in non-operational DoD business, and in many cases as a universal standard of performance or practice. With such extensive application and utility in DoD business operations, process improvement can and should be considered as a guided method to improving operational maturity as well. The dual status commander-led DSCA response to Hurricane Sandy demonstrated some of the areas in which process improvement could have been applied.

While most process improvement strategies are ill-suited to the complexities of DSCA and DSC-led operations for reasons discussed, the DSC2M2 concept presented offers a different approach to improve future mission execution. In order to achieve more mature DSCA operations under the DSC arrangement, we need mechanisms in place to help commanders and their staffs manipulate – to the extent possible – the various uncertainties represented in the complex decision environment present in most DSCA scenarios. The DSC2M2 provides commanders with a method of limiting these uncertainties through a framework that identifies, standardizes, and codifies mission essential tasks in a DSC-led response environment. So, while DSCA operations cannot be scripted, they can be more structured and defined than they currently are. The DSC2M2 provides the semi-structured framework for improving future DSCA mission execution. And while models in this sense are abstractions of reality and cannot accurately represent every complexity in DSC-led DSCA operations, the maturity model concept presented here does offer a unique method of representation that can help commanders and their staffs improve future decision making efforts

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during disaster response missions. Therefore, DoD should consider the concepts addressed here and use them as a basis for additional maturity model development for future DSCA operations. Using the DSC2M2 as a guide, DoD should leverage the lessons learned from Hurricane Sandy and determine ways to integrate maturity model concepts into future DSCA and DSC training and real-world operations.

Chapter 7

RESULTS AND RECOMMENDATIONS

7.1   Introduction

This chapter provides a summary of the results of the research effort as related to the completion of the research objectives defined in Chapter 1. In addressing the noted research objectives, this chapter includes a detailed discussion of the recommendations resulting from the data collected during the Hurricane Sandy case study as it applies to dual status commander-led military response operation. Building on the lessons learned from the Sandy case study – including successes and shortfalls – this chapter outlines 15 specific recommendations intended for consideration by the Department of Defense, the federal Armed Forces, and the National Guard. These recommendations are grouped into two categories: strategic and operational recommendations; and legislative and policy-specific recommendations. After discussing the recommendations in detail, the chapter also briefly summarizes the significance of the analysis that led to the creation of the DSC2M2, and how this analysis and the resulting tool can be used to improve future no-notice/limited-notice DSC-led response operations. Each of these categories relates to one or more of the research objectives identified in the beginning of this study.

Some of the material contained in this chapter is also published by the Department of Defense as part of the aforementioned research contract #W911S0-13-P-085: "Towards a Unified Military Response: Hurricane Sandy and the Dual Status Commander," (Burke and McNeil, 2015a).

7.2 Achieving the Research Objectives

There were three objectives of this research effort presented in Chapter 1. The next sections discuss each of these objectives and explain how the dissertation meets and achieves each of the defined objectives.

7.2.1 Primary Objective: Analysis of the Military Response to Hurricane Sandy in New York

The primary objective of the dissertation was to provide an unbiased and systematic analysis of the military response to Hurricane Sandy in New York. As part of fulfilling this objective, I intended to generate several research-based recommendations aimed at improving defense support of civil authorities' operational processes and procedures under the dual status commander construct, and specifically in relation to no-notice/limited-notice incident response operations. Simply put: I achieved this objective through the completion of this dissertation. To date, this dissertation is one of the most comprehensive and thorough analyses of the military response to Hurricane Sandy available. When viewed as a single document, the dissertation offers an exhaustive literature review of the domestic military response process in the United States for relevant background. In this context, it chronicles the development and implementation of the dual status commander concept into both policy and law. It then provides a rigorously researched and detailed account of the events during the response to Sandy in New York under the dual status commander-led joint task force. It concludes the Sandy analysis by providing a brief discussion of the post-event lessons learned including several notable successes and shortfalls observed during the research effort. The final substantive sections of the dissertation outline the development of a process improvement tool derived from the data collected during the Sandy case study and review of relevant dual status commander material.

Since the dissertation offers both breadth and depth regarding the dual status commander concept and the military response to Sandy in New York, it meets the primary objective the dissertation

7.2.2 Secondary Objectives: Development of a Case Study and the Maturity Model

There were two secondary objectives of this research to supplement the primary objective.

7.2.2.1 Secondary Objective 1 – Case Study

The first of the two secondary objectives was to produce a rigorous case study examination of the military response to Hurricane Sandy under JTF Sandy in New York. Chapter 4 of the dissertation contains the material produced for this case study including a systematic review of the incident response and detailed chronology of selected events during the period of October 22 – November 15, 2012. The case study also addresses the post-event lessons learned including several observed successes of the operation as well as several observed shortfalls. The case study research was performed over a period of eight months and included an exhaustive literature and document review process as well as 20 individual interviews with various subject matter experts and participants in the Sandy response effort.

7.2.2.2 Secondary Objective 2 – Maturity Model

The other secondary objective of the dissertation involved the creation of a dual status commander capability maturity model (DSC2M2) in order to identify mission essential tasks and key requirements of DSC-led operations. The model is intended to assist commanders in decision making efforts in future response efforts.

Chapters 5 and 6 of the dissertation discuss the use of process improvement in military operations and the design and development process employed during the creation of the DSC2M2. Using the data collected during this research process, I scoped, designed, and populated an initial version of the DSC2M2 for consideration by various dual status commander subject matter experts. As noted previously, I conducted two focus groups – each with a distinctly different perspective of the dual status commander concept – to evaluate and improve the DSC2M2. After two successful focus groups and several iterations of revisions, I have two versions of the DSC2M2 reflective of each group's specific recommendations and suggested revisions. Whereas the original objective was to develop a single model for use by practitioners during future incidents, there were significant disparities in the perspectives of the two focus groups such that creating a single, unanimously agreeable model was not possible. As such, the revisions from each focus group resulted in alternative versions of the DSC2M2 included in Appendix M. None the less, the secondary objective of designing and populating a maturity model with task considerations specific to the challenges of a dual status commander-led response operation was achieved through these efforts.

By completing the research objectives, this dissertation provides a comprehensive study of the military response to Sandy in New York, including a thorough case study examining the events of the response as well as the successes and shortfalls under the never-before-tried dual status commander concept for no-notice/limited-notice incidents. A major part of the primary objective of this research was to also generate a series of recommendations for improving future defense support of civil authorities missions in general; but more specifically: combined state and

federal no-notice/limited-notice incident response executed under the dual status commander arrangement. The case study observations noted in Chapter 4 provide the foundation for the next section and the presentation of strategy and policy-specific recommendations for improving future DSCA and DSC-led operations.

7.3   Recommendations

Building on the above issues and the preceding analysis of the DSCA response to Hurricane Sandy, this section outlines a detailed series of strategy and policy-related recommendations specific to no-notice/limited-notice DSCA responses under a DSC-led JTF. Therefore, the following recommendations are intended for consideration by the Department of Defense, the federal Armed Forces, and the National Guard as they consider actions and measures with the potential to improve the dual status commander construct and related concepts within defense support of civil authorities operations.

The suggestions that follow are based on the extensive analytical coding process noted earlier in this dissertation that identified recurring themes in the source data (interviews, after-action reports, etc.). After coding and interpreting the material to identify viable recommendations, I again coded the material into two distinct categories using an axial coding approach as previously discussed. The recommendations are presented in two sections: 1) operational and strategic recommendations 2) policy and legislative recommendations.

The focus of the first series of recommendations is on the operational and strategic considerations of executing an efficient and effective dual status commander-led response. In this context, I suggest improvements to future joint command structures, enhanced methods to transition tactical command authority of federal

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forces, as well as the integration of a Title 10 Task Force for selected mission

capabilities. The policy and legislative recommendations include several suggestions

to improve the current ambiguities of the Immediate Response Authority policy

discussed in Chapter 4. I also include specific recommendations intended to enhance

the understanding and implementation of certain provisions of 10 U.S.C. § 12304a and

32 U.S.C. § 502f. A brief narrative description or justification accompanies each

recommendation. The recommendations are intended to be actionable and realistic;

although some, if implemented, require significant changes or alterations to existing

policies, procedures, or doctrine, and may, therefore, be judged impractical by some.

7.3.1 Operational and Strategic Recommendations

7.3.1.1 Lean, but don't push forward

The forward-leaning approach employed by DoD prior to and during the Sandy

response was effective. Prepositioning Title 10 forces at nearby bases and offshore,

issuing prepare to deploy orders (PTDO), and deploying defense coordinating officers

to anticipated disaster areas is necessary to facilitate a timely response upon request

from civil authorities. Cost issues aside, moving Title 10 forces into the Joint

Operations Area provides the dual status commander with abundant force capabilities

ready to meet nearly every contingency. After action reports from the Office of the

Secretary of Defense and U.S. NORTHCOM, as well as some officers who

participated in Sandy, suggested that prepositioning Title 10 forces was the preferred

strategy, rather than activating National Guard troops through EMAC and other

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sourcing mechanisms.[55] Aggressive posturing of Title 10 forces in and around a disaster area offers quick response and unmatched capabilities. However, DoD and the service components must avoid being too forceful while ensuring compliance with laws, policies, and procedures.

Title 10 forces and commanders should be encouraged to comply with national guidance. The concern over a forward-leaning approach arises when Title 10 forces are not integrated into the response as expected following deployment to the affected area. Federal funds are used to transport units to the Joint Operations Area. Upon arrival, commanders often search for opportunities to integrate their forces into the DSCA response in order to justify the cost of transport, among other things. This external pressure can have a detrimental effect and should be avoided to the extent possible. Therefore, DoD should continue to preposition assets and personnel when there is an anticipated need. However, despite public and Hollywood mythology, federal military forces are not the nation's principal emergency response service. Therefore, upon arrival, commanders should refrain from asking for Title 10 integration and instead wait until they are requested through the established procedures.

7.3.1.2   Delineate clear federal chain of command prior to deploying forces

To avoid similar confusion regarding the chain of command structure in place for Sandy, once the decision is made to activate a dual status commander for a joint

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[55] Interviews with various National Guard officers and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

DSCA response, both DoD and the affected state(s) should clearly articulate and approve a unified chain of command. The roles, responsibilities, and lines of command and coordination, respectively, must be clearly established prior to the deployment of a Joint Task Force. During Sandy, every after action report reviewed as well as each individual interview noted there was confusion over the role of the Joint Coordinating Element and whether the JCE was internal or external to the federal chain of command (Joint Task Force-Sandy, 2012; United States Northern Command, 2012; Marine Corps Center for Lessons Learned, 2013b; Office of the Secretary of Defense, 2013c; United States Fleet Forces Command, 2013; Joint Task Force-Civil Support, 2014). As previously addressed, some commanders who participated in the Sandy response contend that the JCE was the parent command element to the dual status commander and therefore served as the command link between the DSC and the Joint Force Land Component Commander (JFLCC - ARNORTH). Conversely, others claim the JCE was simply a coordination element with no command authority over the DSC.[56] In this view, the dual status commander reported directly to the JFLCC on the federal side. This confusion and lack of clarity among participants during Sandy created additional challenges that should be avoided in future DSCA operations. As early as possible, NORTHCOM should clearly articulate a federal chain of command, including the names and titles of each command echelon down to the dual status commander(s). Command and control wire charts should be created and disseminated prior to operations, to the greatest extent possible given the circumstances.

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[56] Interviews with various National Guard officers and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014

7.3.1.3 Eliminate the Joint Coordinating Element (JCE)

According to senior DoD officials, the inclusion of a JCE during the Sandy response was a trial concept intended to improve coordination efforts between multiple dual status commanders and the federal chain of command during a multi-state incident.[57] Due to the increased confusion presented by the inclusion of a JCE during Sandy, this command element should be removed from future consideration. Some advocate for inclusion of a JCE during a DSCA response to facilitate Title 10 force coordination, including Joint Reception, Staging, Onward movement, and Integration (JRSOI). For a multi-state event such as Sandy, effectively coordinating Title 10 force activities logically warrants consideration of a JCE. The problem occurs when the JCE commander's role is not clearly articulated. If using a JCE for the purpose of effective JRSOI of Title 10 forces, the JCE should not be included as part of the formal command structure. Instead, the JCE should be listed as a coordination entity (dotted line doctrinally) only. If a JCE is not desired for JRSOI, then removing the JCE entirely from the federal chain of command reduces the layering effect noted during the Sandy response. Without a JCE, the dual status commander can and should report directly to the JFLCC/ARNORTH commander as the parent command entity. Figure 24 illustrates how this command structure would have looked during Hurricane Sandy.

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[57] Interviews with various DoD officials with relevant knowledge of the circumstances before, during, and after the Sandy response, March – May 2014.
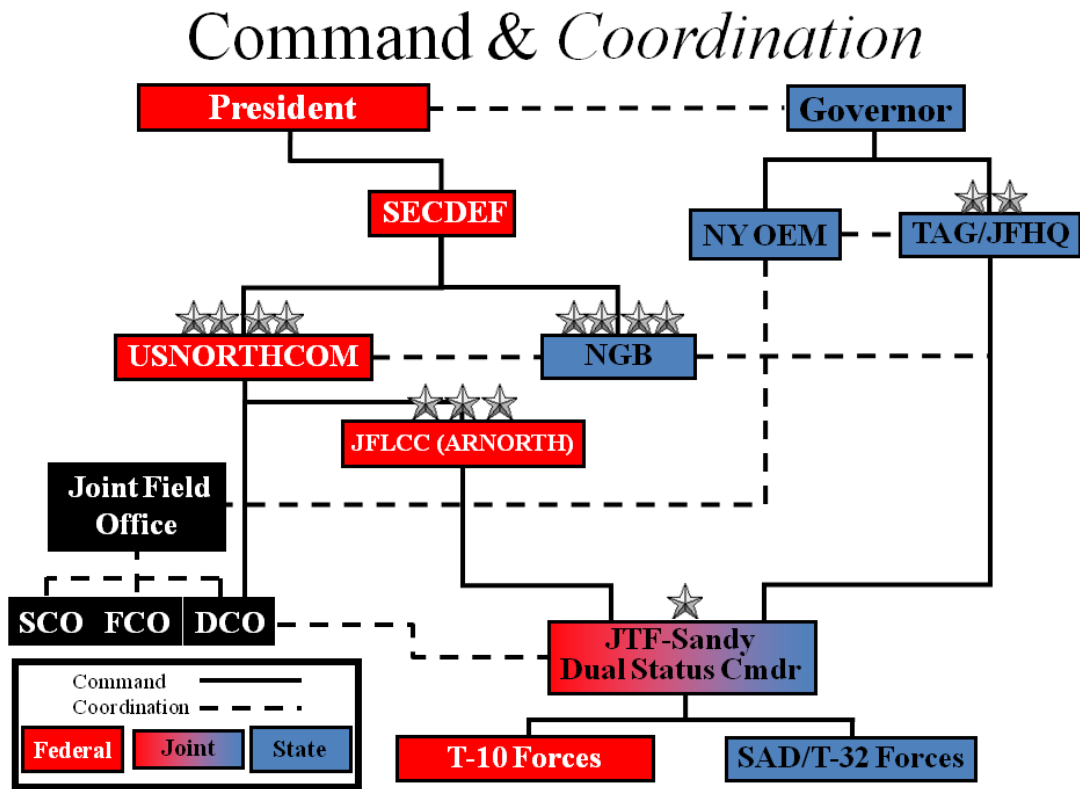
Figure 24: Sandy Command Structure – No JCE

7.3.1.4   Appoint a Defense Coordinating Officer In Charge (DCOIC)

National response plans, such as the NRF and other guiding documents, call for one DCO to serve as the single point of contact at the Joint Field Office for DoD activities within each of the 10 FEMA regions. However, as noted in Joint Publication 3-28, larger incidents and multi-state incidents sometimes require additional DCOs to assist in coordination efforts (Department of Defense, 2013a, p. II-12). According to DoD after-action reports and interviews, multiple DCOs deployed to New York during Sandy; each with a defined area of responsibility but no guidance for DCO-DCO

coordination.[58] Similarly to the JCE, deploying multiple DCOs creates the potential for confusion and coordination issues. There were several issues noted in Sandy after-action reports detailing failures of DCO-DCO coordination within New York resulting in duplicated planning efforts or redundant mission assignment generation; something that the DSC concept is designed to help alleviate (Joint Task Force-Sandy, 2012; United States Northern Command, 2012; Marine Corps Center for Lessons Learned, 2013b; Muser, 2013; Office of the Secretary of Defense, 2013c; United States Fleet Forces Command, 2013; Joint Task Force-Civil Support, 2014).

Currently, there is no defined adjudication process between the multiple DCOs assigned to a FEMA region and NORTHCOM. In essence, NORTHCOM may receive duplicate requests from different DCOs in the same region who have no established protocol to coordinate with each other. The suggested DCOIC billet will serve as this needed adjudication body for all DCO activity during designated incidents involving multiple DCOs. In this model, DCOs will preliminarily approve requests for forces and submit them to the DCOIC for final approval. The DCOIC will validate/deny these requests and inform the DSC accordingly.

There are multiple options for designating a DCOIC. One alternative is to simply designate a DCO as the senior DCO in charge based on established criteria (rank seniority, time in billet, etc). In this model, all subordinate DCO activities are routed through the DCOIC to ensure effective coordination, reduced redundancy, and a unified mission assignment process. The DCOIC would coordinate directly with the

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[58] Interviews with various DoD employees, National Guard officers, and active military officers that participated in the response to Hurricane Sandy in some capacity, January – March 2014.

DSC JTF as the DoD representative to the JFO. An additional alternative to this recommendation places a General Officer in the DCOIC billet. In this model, the JTF-CS CG is an ideal candidate for the DCOIC position. The JTF-CS CG is one of the leading subject matter experts on domestic civil support and DSCA. Assuming a temporary assignment like DCOIC does not conflict with the JTF-CS CG's principal Chemical, Biological, Radiological, Nuclear (CBRN)-DSCA responsibilities, this General Officer should hold a key role in the execution of DSCA operations, especially those using the dual status commander arrangement. This recommendation also complements the above suggestion to remove the JCE from the command structure. Rather than assigning the JTF-CS CG to serve in a billet of questionable necessity (JCE), this General Officer can be deployed to the designated JFO where he/she will serve as the DCOIC with ultimate approval authority over all DCO-authorized mission assignments in the DSC JOA.

Regardless of the chosen option, establishing an adjudication body for the multiple DCO constructs likely to occur again in major incidents will help limit future confusion and redundancies.

7.3.1.5   Define time for early Title 10 integration

Hurricane Sandy gave federal military forces the opportunity to highlight their timely response capabilities. As members of a professional military force, active duty Soldiers, Sailors, Airmen, and Marines remain in a constant state of readiness to deploy and respond to domestic contingency operations. This quick response capability was displayed during Sandy as various Title 10 assets converged on the Joint Operations Area within days of the storm's landfall. The active component's ability to mobilize and deploy forces quickly, coupled with the reserve component's

widespread geographic distribution of forces, often means Title 10 forces are able to respond quicker and with more capabilities than their National Guard counterparts. However, Title 10 forces come with a greater financial requirement. Therefore, through state National Guard capabilities and EMAC agreements, National Guard assets are the primary military sourcing solution for disaster response operations. Whether due to administrative delays through EMAC requests or insufficient capabilities, the National Guard cannot always address immediate requirements, such as the need for dewatering the New York City subway system during Sandy. In these cases, states look to the federal government for support. With this in mind, DoD and the Governors should consider a strategic shift that would allow federal forces to be sourced, following a request from civil authorities and external to Immediate Response Authority, for a predetermined (and finite) period of time during the early phases of a DSCA response. This can be done prior to sourcing National Guard units during the initial stages of DSCA operations in order to facilitate quicker military response when necessary.

The proposed Title 10 integration period should not be misconstrued as an unrestricted authorization for the DSC to employ Title 10 forces. Rather, this should be considered a defined period of time when Title 10 forces can be sourced prior to the National Guard's arrival and without an approved mission assignment. In many ways, this is similar to Immediate Response Authority in that the proposal allows federal forces to provide assistance without the need for paperwork delays. However, this is different from IRA in that the DSC approves the Title 10 integration and therefore assumes tactical control of the federal force. The DSC does not have tactical control of Title 10 forces operating under Immediate Response Authority, per JP 3-28

(Department of Defense, 2013a, p. C-1). Similar to the policy governing Immediate Response Authority, this Title 10 integration period should extend at least 72 hours from the activation of the dual status commander. During this period and assuming consent of the federal and state commands respectively, the dual status commander should be authorized to use Title 10 forces to address priority requests for assistance with consideration of cost share and mission assignment generation after the fact.[59] The integration period should also establish a clear time limit (e.g. 96 hours) to conclude all initial Title 10 sourcing. At the conclusion of the proposed integration period, the dual status commander can prioritize National Guard forces for secondary and tertiary requests. This will facilitate flexibility and adaptation to the evolving situation and limit the bureaucratic delays present in the current system.

The proposed Title 10 integration period will provide a mechanism to address external pressures to involve Title 10 forces in DSCA operations. Ideally, Title 10 forces would exercise better fidelity to the "last in, first out" philosophy during domestic response. However, the political realities of domestic response often supplant policy and law. The president, governor, and other elected representatives risk a political death sentence for inadequate, insufficient, or late response in events of national prominence or significance. As evidenced by the federal response to Hurricane Sandy, politicians will often marginalize or abandon restrictive laws and policies in order to provide immediate federal assistance and avoid public ridicule.

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[59] Federal/state cost share/reimbursement considerations are beyond the scope of the Dual Status Commander. If this recommendation were to be implemented in the future, revisions to relevant legislation (Stafford Act, etc.) should be considered with possible changes including a period of 100% federal cost share for the duration of the proposed Title 10 integration period.

Providing a mechanism to integrate Title 10 forces into the early stages of a DSCA operation will address these concerns while ensuring prompt assistance to civil authorities when requested. It will further reduce the tensions over Title 10 activities under Immediate Response Authority, as federal forces will be integrated into the response and under the tactical control of the dual status commander.

Simply put, if DoD and the states are going to embrace the dual status commander concept, per the 2012 NDAA, as the usual and customary command arrangement during the simultaneous employment of the National Guard and Armed Forces, we must empower the dual status commander in such a way that leverages all available resources and capabilities, both state and federal. The dual status commander should be able to request Title 10 forces to meet a need within the JOA so long as such support is not illegal, immoral, or unethical. There are too many impediments in the current process restricting commanders from providing the best and most capable response resources in a timely manner, while also encouraging the abuse of less restrictive policies like Immediate Response Authority to justify response activities. This mechanism will help address some of the noted issues.

7.3.1.6   Authorize transition of authority

While the above recommendation addresses initial Title 10 activities requested by the dual status commander, it does not address similar activities performed outside of the dual status commander's knowledge under Immediate Response Authority (IRA). DoD Directive 3025.18 provides commanders Immediate Response Authority when requested by a civil authority and under "imminently serious conditions and if time does not permit approval from a higher authority" (Department of Defense, 2012d, p. 4) In these instances and where Title 10 forces are operating within the dual

status commander's joint operations area, consideration should be given to whether the dual status commander should assume tactical control of federal forces operating under IRA. This topic is one that is debated regularly in and around DoD, with perspectives advocating both for and against such a recommendation.

Those who support the dual status commander gaining tactical control of Title 10 forces under IRA cite joint doctrinal concepts – such as unified action and unity of effort (Department of Defense, 2011a, p. xi, I-8) – as a basis for their argument, often noting that when Title 10 forces operate under IRA and thus outside of the DSC JTF, neither is achieved. Instead, their argument holds that any force operating outside of the command of the DSC JTF creates friction rather than promoting synergy and unity of effort. Advocates further contend that one of the main intentions for creating a DSC architecture is to unify state and federal military actions under a single commander, albeit in a mutually exclusive capacity. Title 10 forces operating externally to this joint command structure are not in consonance with the unified, coordinated concept the DSC is designed to facilitate.

The counterargument to this position is rooted in the tenets of federalism and the division of powers between the states and federal government. As noted earlier, the legal framework guiding the use of military forces domestically is complex. Despite the complexities, however, critics affirm the constitutional basis of the laws and philosophical principles as the foundational structure for using the military domestically. According to the Constitution — and with support from Title 10 of the United States Code — the President is the Commander in Chief of the Armed Forces under all circumstances. When responding under IRA, Title 10 forces maintain autonomy from the DSC, instead reporting directly to their service commanders and,

in effect, to the President. Permitting a DSC (who in most cases is a National Guard officer) to assume tactical control of a Title 10 force under IRA, according to critics, contradicts not only the doctrinal restrictions prohibiting DSCs from exerting command authority over Title 10 forces under IRA (Department of Defense, 2013a, p. C-1), but also the principles of federalism that are intended to ensure a divided system of power and authority between the states and federal government. Using this logic, opponents even suggest that the mere concept of a dual status commander violates the Constitution and the federalist system of government.[60]

Regardless of perspective, DoD must determine a policy and strategy for coordinating with or integrating Title 10 forces on IRA during a DSC-led DSCA incident. While there is some question as to whether the Marines were operating under IRA during their initial arrival on Staten Island, the presence of a Title 10 force ashore during Sandy without the knowledge of the DSC created avoidable tension and confusion. In this case, the dual status commander in New York assumed tactical control of the Marine detachment ashore on Staten Island, following a series of discussions with other General Officers within the chain of command. This tactical control ceased once the Marines returned to the ship. Despite initial disagreements, the assumption of tactical control of the Marines worked under these circumstances. Once the DSC gained situational awareness of the Title 10 activities ashore, he was better able to integrate their capabilities into future missions and support activities. If this is determined to be the most desirable course of action for future incidents of similar circumstances, there should be a process or procedure in place for the dual status

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[60] Interviews with multiple DoD officials with relevant knowledge of DSCA policies, May 2014.

commander to assume tactical control of Title 10 forces under IRA without having to go through several layers of command discussions. Defining such procedures in future doctrinal references will help future dual status commanders avoid the lengthy command discussions and negotiations that occurred during Sandy.

7.3.1.7   Designate and employ a Title 10 Adaptive Task Force

Much of the Title 10 activity during the Sandy response occurred under Task Force Pump, a joint force represented by all four services and responsible for numerous dewatering missions throughout the joint operations area in New York. This model worked well during Sandy. As a somewhat ad hoc and hastily requested force asset, TF Pump gave the dual status commander the tactical flexibility to employ Title 10 forces for specific missions related to dewatering, pumping, etc. TF Pump received most of the requests for dewatering and subsequent mission assignments falling under this special capability. This provided the dual status commander with at least one clear decision point during the entirety of the response operation. Similar actions should be considered for future missions.

Given the notable successes of TF Pump during Sandy, dual status commanders, in consonance with their state and federal chains of command, should identify a large critical mission capability (such as dewatering during Sandy) during the initial stages of a response effort. After agreeing on this capability requirement, NORTHCOM should identify and designate a unit capable of providing such services. This unit should be issued prepare to deploy orders (PTDO) and assume the designation as the Title 10 Adaptive Task Force (A-TF). Once identified, the dual status commander can exercise the option to activate the A-TF to complete mission assignments within the task force's identified specialty. Predetermining a Title 10 task

force for performing specific mission functions will limit the tensions between Title 10 and Title 32 commanders lobbying for inclusion of their respective assets.

As with the other recommendations, there are counterarguments to this as well. It is difficult to predict future incident requirements, so employing an adaptive task force may not always be a possibility. Beyond this, there is a cost element associated with a federal military force supporting civil authorities. Financial considerations are (or should be) external to the dual status commander's focus during a DSCA response. However, cost is something that must be considered when determining whether to deploy any Title 10 force in support of civil authorities. With this in mind, some might suggest that a Title 10 task force represents an unnecessary redundancy that can otherwise be sourced from existing unit capabilities. While these are valid considerations, designating an adaptive Title 10 task force is still worth considering, based on the observations from Task Force Pump during Hurricane Sandy.

7.3.1.8 Maximize the use, distribution, and presence of Liaison Officers (LNOs)

"You can't have enough LNOs in my opinion."[61]

One of the most frequently discussed topics following the Sandy response was the use of LNOs throughout the operation. Numerous interviews and after-action reports noted the importance of using LNOs to coordinate efforts and enhance situational awareness across the seemingly endless bureaucracy of local, state, and federal agencies, departments, offices, and services participating in the response (Joint Task Force-Sandy, 2012; United States Northern Command, 2012; Marine Corps

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[61] Interview with a National Guard officer that participated in the response to Hurricane Sandy, February 2014.

Center for Lessons Learned, 2013b; Office of the Secretary of Defense, 2013c; United States Fleet Forces Command, 2013; Joint Task Force-Civil Support, 2014). The mostly positive feedback concerning LNOs suggests that these positions are vital to successful coordination and information sharing of future DSCA response efforts, especially under the dual status commander construct when both states and the federal government are represented.

LNOs provided critical information to commanders and their staffs during the entire Sandy response effort. While they were used in many places, some agencies or offices did not have LNOs representing all relevant military units. In addition to providing a Title 10 and Title 32 LNO to every major command element, including both the dual status commander and any adaptive Title 10 task force, LNOs should also be located in the State Office of Emergency Management or Emergency Operations Center, and with FEMA to facilitate mission assignment coordination and subsequent force packaging. Additionally, some LNOs were underutilized according to various reports. Given the critical capability and knowledge provided by LNOs, assigning liaison personnel to perform staff functions is not an effective way to leverage their presence as subject matter experts in coordination. DoD and the National Guard should continue using LNOs in every location deemed necessary and ensure they are used in a manner consistent with their capability and expertise.

7.3.2   Policy Recommendations

The most needed dual status commander policy recommendation is to establish a dual status commander policy. Short of that, there are several policy revisions worth considering in order to improve future DSCA efforts involving the dual status commander arrangement. The most pressing change, based on observations from

Hurricane Sandy, centers on the Immediate Response Authority provision in DOD

Directive 3025.18. Additionally, revisions need to be made to the mission assignment

process and certain Title 10 and Title 32 legislation, among other things.

7.3.2.1 Immediate Response Authority: Revise and Codify Definition of Civil Authority

The current language describing Immediate Response Authority in DoDD

3025.18, 4(g) states:

> In response to a request for assistance from a civil authority, under
> imminently serious conditions and if time does not permit approval
> from higher authority, DoD officials may provide an immediate
> response by temporarily employing the resources under their control,
> subject to any supplemental direction provided by higher headquarters,
> to save lives, prevent human suffering, or mitigate great property
> damage within the United States (Department of Defense, 2012d, p. 4).

The policy language here, according to DoD officials, is intentionally vague to

allow for flexibility in the interpretation of what constitutes a civil authority.[62] The

intended ambiguity allows for open interpretation based on individual circumstances,

and provides justification for military commanders to offer critical support to civil

authorities without the need to subject their decisions to a lengthy and often-

cumbersome approval process. This ensures that when American citizens have an

immediate need for military support, the language of a policy does not prevent saving

lives and alleviating suffering. Conceptually, this is sound logic based on the best

interests of the American people. In practice, however, there are issues with the

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[62] Interviews with multiple DoD officials with relevant knowledge of DSCA policies, May 2014.

current wording that can lead to abuse of the provision or arguments over whether federal military action actually constitutes IRA.

Among the many ambiguities, the IRA policy fails to define an appropriate level of civil authority to request assistance from DoD using the Immediate Response Authority justification. As noted earlier in this monograph, U.S. Marines from the 26th MEU came ashore on Staten Island at the request of an unidentified employee of the NY/NJ Port Authority.[63] While these actions have not been formally designated as IRA, as some question whether "imminently serious conditions" were present, there is no other legal basis for justifying the Marines' presence on Staten Island during the initial response period. Based on the above language, "the Marine invasion of Staten Island," as it has been referred to, was, in effect, compliant with at least part of Section 4(g) of DoDD 3025.18 – in response to a request for assistance from a civil authority. Aside from the revisiting the semantics and meaning of "under imminently serious conditions," DoD should consider revising, expanding, and clarifying the description of "civil authority" as it applies to Immediate Response Authority.

In its current form, the term "civil authority" is ambiguous and leaves significant room for interpretation. According to Joint Publication 1-02: Department of Defense Dictionary of Military and Associated Terms, civil authorities are:

> Those elected and appointed officers and employees who constitute the government of the United States, the governments of the 50 states, the District of Columbia, the Commonwealth of Puerto Rico, United States territories, and political subdivisions thereof (Department of Defense, 2014a, p. 36).

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[63] This claim is supported through interviews with multiple officers of both the National Guard and active component who participated in the Sandy response effort.

This broad definition lacks the specificity needed for DSCA operations and, legally speaking, facilitates federal military actions in response to a request from any level of civil authority without restriction. Others can debate the necessity of the Marines' presence on Staten Island and whether "imminently serious conditions" existed. The emphasis here is that DoD should consider revising the term civil authority(ies) to avoid future confusion and/or abuse of the IRA policy. The revision should specify distinct levels of civil authorities on a hierarchical scale; or, where appropriate, titles of positions. It should further designate what level constitutes an appropriate requesting authority (e.g. "In response to a request from a Level 3 civil authority…"). Such policy revisions are needed to avoid similar problems in future response efforts. In addition to expanding on the appropriate level of civil authority to which the DoD can respond under IRA, the provision should be revised to expand and clarify "supplemental direction."

7.3.2.2 Immediate Response Authority: Supplemental Direction

The Immediate Response Authority guidance permits military commanders to engage in immediate response "subject to any supplemental direction provided by higher headquarters" (Department of Defense, 2012d, p. 4). In order to avoid abuse of IRA in future DSC-led DSCA efforts, DoD should create a standardized "supplemental direction" for reference under IRA. In this context, DoD and/or NORTHCOM should consider drafting a template standing order or directive to augment or serve in addition to the current CJCS DSCA Standing Execution Order (EXORD). This additional standing order shall be applicable specifically to DSC-led responses and instances of IRA under which federal forces may operate. This order should be issued by the NORTHCOM Commanding General and hold all Title 10

force commanders accountable to a specified standard of conduct or procedure when providing assistance under Immediate Response Authority.

For example: U.S. Marines of all ranks are intimately familiar with the 11 General Orders of a Sentry. Just as a Marine can receive punitive action for quitting his/her post without being properly relieved (General Order 5), a military commander should be deterred from abusing or violating federal policy on DSCA. Similar in style and custom to the General Orders of a Sentry, NORTHCOM should develop a standing general order to guide the conduct of DSCA operations under IRA, with emphasis on those occurring within the dual status commander construct.

> Example General Order for Immediate Response Authority within a DSC JOA: Commanders using Immediate Response Authority to support civil authorities within a dual status commander joint operations area must notify the dual status commander within three hours of authorizing immediate response.

Currently, there is no incentive for commanders to ensure the integrity of DSCA doctrine, policies, and procedures. While the legal basis for some Title 10 actions during Sandy is questionable, it is nearly inconceivable to think of a situation where such violations of policy or law would result in punitive action against the responsible commander; nor am I suggesting that commanders should be punished for providing immediate response, especially when the actions of response forces are carried out with the intent to provide assistance to local residents. However, without changes or additions to the current policy, there is ongoing potential for similar issues in future DSCA activities. Issuing a Combatant Command endorsed general order prior to the execution of a DSCA response would provide the necessary mechanism or incentive for command compliance with standing laws, policies, and procedures. The revision to the IRA guidance could read: "DoD officials may provide an immediate

response by temporarily employing the resources under their control, in accordance with NORTHCOM General Order X, or any additional supplemental direction provided by higher headquarters."

As with other recommendations, this suggestion may be unpopular with some. While the need to maintain speed and flexibility during DSCA is critical, maintaining accountability and awareness of response activities is important as well. In many cases, creating additional layers of policy compliance slows response decision-making and operational efficiency. In this case, however, requiring a single notification from a Title 10 commander to the dual status commander does not add to existing restrictions, nor does it limit a commander's ability to provide support under IRA. This recommendation simply ensures Title 10 commanders exercising IRA provide the dual status commander with appropriate notification of their intent and ongoing activities up to the 72-hour period of authorization. This contributes to the goal of achieving unified actions and an overall unity of effort under a dual status commander-led JTF.

7.3.2.3   Immediate Response Authority: Mission Assignment Process

The above recommendations offer a mechanism for clarifying preliminary considerations and approval measures for Title 10 actions under the pretext of Immediate Response Authority. However, the dual status commander in New York encountered several issues after Title 10 forces arrived, most of which can be improved through changes to current mission assignment policies.

Assuming Title 10 actions meet all established criteria for IRA, the dual status commander may wish to sustain this support activity beyond the currently approved 72-hour authorization period. To facilitate sustained Title 10 activity beyond the first 72 hours of IRA, a mission assignment must be generated and approved through the

appropriate channels, or Title 10 forces risk being subjected to a work stoppage request, as was the case with the Marines on Staten Island. To avoid such problems, DoD, in conjunction with the requesting local/state agency, should codify a process by which a mission assignment/formal request for assistance is generated and submitted through the proper channels. Developing a post-Immediate Response Authority MA/RFA process and incorporating it into current policies will serve multiple purposes:

- Fill a current gap in which no policy guidance exists for actions occurring beyond the initial 72-hour period under Immediate Response Authority.
- Provide a policy/doctrinal basis for dual status commanders to assume tactical control of Title 10 forces operating within the Joint Operations Area, if desired.
- Provide a needed policy mechanism for reimbursement of Title 10 support activities that will eventually fall under an approved mission assignment.

Without the above restrictions, civil authorities with knowledge of the IRA policy language can ignore the current mission assignment and/or request for assistance process while leveraging the ambiguous language of Immediate Response Authority. As seen during Sandy, this can lead to violations, intentional or not, of policy and, in some cases, law. The absence of this essential guidance further marginalizes the essential considerations for initiating requests for DoD support, often leading to greater end costs and confusion.

With this in mind, DoD should consider developing a draft instruction outlining the specifics of the mission assignment process, to include when and how

Title 10 forces operate under Immediate Response Authority.[64] The political pressures and realities of a response situation can cause the established system of accountability to be circumvented, or in some cases abandoned. Sending troops "towards the sounds of chaos"[65] may be politically convenient for elected officials seeking public approval and for military commanders cleverly seeking a boost in their service's recruiting mission and budget appropriations, but it can also impede and aggravate planned and coordinated response efforts.

7.3.2.4   Immediate Response Authority: Final Thoughts

Again, in most cases I would not advocate for expanding an already burdensome series of laws, policies, and procedures. The singular intent of Immediate Response Authority is to provide a policy justification for rapid military support under imminently serious conditions when time does not permit commanders to obtain senior leader approval. Adding layers to and expanding the language of a policy intended to ensure speed and flexibility under dire circumstances seems counterintuitive. However, the single most debated activity during the entire joint response to Hurricane Sandy occurred under the questionable justification of Immediate Response Authority, hence the motivation to suggest changes.

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[64] Dunphy and Radel (2009) offer a useful approach to evaluating this process. Their study methodology can be duplicated with emphasis on the mission assignment process.

[65] See Marine Corps Fiscal Year 2012 recruiting campaign "Towards the Sounds of Chaos." In order to appeal to a growing sense of altruism and public service in the millennial generation, the Marine Corps adopted the aforementioned campaign with commercials depicting Marines engaged in humanitarian assistance/disaster response missions, among other things. This comes from my personal knowledge of and experience with Marine Corps recruiting initiatives during my time on active duty.

Many with direct knowledge and experience of the response in New York refute the justification offered by commanders that the Marines came ashore under IRA, noting that their arrival occurred six days after the storm's initial landfall and without urgent need or "imminently serious conditions."[66] Moreover, according to the same sources, the initial Marine activities on Staten Island did not "save lives, prevent human suffering, or mitigate great property damage" (Department of Defense, 2012d, p. 4). Therefore, according to many, these actions do not constitute IRA. Others dispute this argument and reaffirm the Marines' support to the residents of Staten Island was justified under IRA, as they were requested to come ashore by a civil authority and in response to an immediate need as determined by the authorities on the ground. One position remains consistent among those I spoke with, however: regardless of the circumstances leading to or the justification for the Marines' support in New York, the activities carried out by the Marines post-Sandy were extremely beneficial to the residents and local authorities. So, while nobody debates the positive impact the Marines had on the Sandy response, the argument over Immediate Response Authority has been and will continue to be debated. Regardless of position, this debate centers on the subjective and often widely varied interpretation of the IRA policy in its current form. Our recommendations for changing the IRA policy address the primary concerns voiced by the majority of our data sources. At the very least, DoD should consider the preceding suggestions and form their own assessments by evaluating the utility and applicability of the content as it would be applied to a future DSC-led DSCA response.

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[66] Interviews with various DoD employees, National Guard Officers, and Active Component officers involved in the Sandy response, January – March 2014.

7.3.2.5   Legislative and Associated Policy Revisions: 10 U.S.C. § 12304a

Section 515 of the Fiscal Year 2012 National Defense Authorization Act added the legal authority for the Secretary of Defense to activate Reserve Component forces of the Army, Navy, Air Force, and Marine Corps in response to a governor's request for federal assistance during a disaster or emergency (U.S. Congress, 2012, p. 98). 10 U.S.C. § 12304a became law on December 31, 2011 and was implemented for the first time during the DoD response to Hurricane Sandy in New York with the activation of the three separate Army Reserve Quartermaster detachments (Office of the Secretary of Defense, 2013c, p. 32). As with the larger dual status commander structure, the first attempt to implement this newly adopted statute resulted in some notable issues.

Sandy reports suggest that although approved mission assignments were generated for the Army Reserve units in New York, coordinating with these detachments proved challenging. While the details of these challenges are vague at best, the recurrence of the issue across multiple sources suggests that DoD needs to improve Reserve Component activation policies and procedures under 10 U.S.C. § 12304a, in consonance with the recommendations noted in the Reserve Forces Policy Board's 2012 Info Memo on Reserve Component Operations in the Homeland (Department of Defense, 2012e).[67] Since the Reserve Component is now a force-sourcing solution for DoD during disasters and emergencies, federal response capabilities and capacities are even greater. To maximize the effective use of the

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[67] See Department of Defense, *Report of Reserve Forces Policy Board on New Policies and Clearer Funding Flows for Reserve Component Operations in the Homeland*, Falls Church, VA, April 9, 2012, p. 7. See the full report at rfpb.defense.gov/Portals/67/Documents/RFPB%20Memo%20to%20SECDEF-Policy%20and%20Funding%20RC%20Homeland-9%20Apr%202012.pdf.

Reserve Component during such incidents, each service branch must also implement policies detailing the activation procedures for their respective reserve units under 12304a, including circumstances when reserve units will be activated and under what capacity.

Establishing defined policies and procedures for reserve unit activation and sourcing under 12304a will improve an appointed dual status commander's ability to manage a joint operation. Due to its widespread geographic distribution throughout the continental United States, the Reserve Component is a significant force multiplying asset that should be integrated into emergency and disaster response when required. This newly adopted legislation needs to be followed by service-specific policies that will ensure efficient mobilization and deployment of reserve units in future dual status commander-led DSCA operations. Just as the Reserve Component can now be a viable sourcing solution for Title 10 response efforts, so too can the National Guard.

7.3.2.6 Legislative and Associated Policy Revisions: 32 U.S.C. § 502f

Under 32 U.S.C. § 502f, the National Guard (or a member of) may "be ordered to perform training or other duty…(2) that may include…(A) support of operations or missions undertaken by the member's unit at the request of the President or Secretary of Defense" (32 U.S.C. § 502f, 1964). When using 502f authority to activate the National Guard, Guard troops remain under state control while support operations are funded 100% by DoD. Because states are often unable to fully fund their National Guard forces under SAD for more than a few days, 502f provides a legal mechanism to relieve states of a funding dilemma. Historically, this legislation has been used as federal authority to mobilize the National Guard during nationally significant disaster

responses such as Hurricane Katrina as well as pre-planned NSSE's.[68] As this statute offers states a mechanism to maintain control of the National Guard at 100% cost share to the federal government, it is clearly advantageous for states to request approval of a 502f designation during a presidentially declared disaster. However, due to ambiguity in the law combined with states' desires for maximum control at minimum cost, states regularly request 502f designation from DoD. While some requests are approved, many are subsequently denied. Revising the current 502f language is necessary to address some of these issues, especially as it applies to force sourcing decisions within the dual status commander construct.

The main objective of the dual status commander during a no-notice/limited-notice incident like Sandy is to promote unity of effort between the National Guard and the Armed Forces. As such, the dual status commander should not be strategically or even operationally focused. The dual status commander should be a resource employer: a tactically focused commander looking to send the right resources to the right place at the right time. This General Officer serves as a coordination mechanism between states and the federal government and should not be concerned with the legal nuances and interpretations limiting National Guard duty statuses and funding source determinations. He/she should possess a working knowledge of such information so as to appropriately influence tactical decision-making. However, National Guard duty status should be externally adjudicated to the dual status commander's purview. If the dual status commander can use the National Guard to fill a request for assistance intended for Title 10 forces, he/she should not be limited in employing the necessary

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[68] Interviews with various DoD employees and National Guard officers who participated in Hurricane Sandy, January – March, 2014.

or available resources simply due to statutory nuances. Changing the current 502f wording to include specific criteria or guidelines for 502f designation and subsequent sourcing solutions can add strategic, operational, and tactical value to future DSCA operations.

Given the above, DoD, the National Guard Bureau, and the states should establish specific criteria for 502f designation that includes the type(s) of incident(s) and/or circumstance(s) leading to a 502f authorization and under what circumstances a dual status commander can use 32 U.S.C. § 502f forces as a sourcing solution in place of Title 10 forces. Building on the recommendations of the Reserve Forces Policy Board's 2012 Info Memo noted earlier, these revisions should include criteria such as complex catastrophes, national significance/impact, or multi-state response (Department of Defense, 2012e, p. 10). Defining such criteria and force-sourcing procedures will minimize the time required to allocate Title 32 resources if requested by the dual status commander. 502f revisions coupled with 12304a revisions will address two notable gaps in the DSCA response to Sandy. While the dual status commander does not need to be an expert on the above legal discussion, ignorance to the relevant laws is intolerable. As such, lawyers can and should be included as part of the joint staff in future dual status commander-led missions.

7.3.2.7 Inclusion of Staff Judge Advocate as part of Joint Task Force Headquarters Staff

If you tell military commanders to cut through the red tape and make things happen, as was the case in Sandy, it is often the lawyer, or Staff Judge Advocate (SJA), who is excised from the command decision-making process. With the numerous legal complexities and considerations that arise during a dual status

commander-led DSCA response, excluding the SJA and overlooking laws and regulations leads to greater challenges during and after the incident. In some cases, the perceived urgency of a no-notice/limited-notice response effort and the need to provide assistance takes precedence over necessary legal considerations for managing and employing state and federal forces. Some decisions made during the Sandy response were of questionable legality and contrasted with the interpretations or advice of participating legal officers.[69] In other instances, SJAs were not provided an opportunity to advise commanders prior to such decisions.[70] As Sandy was the first attempt at using the dual status commander arrangement in this capacity, these issues are expected but should be addressed for future operations.

However cumbersome, nuanced, and seemingly arbitrary these laws may seem to commanders focused on accomplishing a mission, laws are written to provide structure and limits. Within the context of dual status commanders, many of the relevant laws are rooted in the Constitution and the foundational principles by which we govern our Armed Forces. Lawyers provide arguably some of the most critical knowledge during a combined state and federal military response; they cannot be excluded from advising the dual status commander on the statutory limitations of military actions under unpredictable circumstances. As part of its effort to develop a dual status commander instruction for DSCA operations, DoD should incorporate

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[69] Interviews with three military judge advocates; including one who served as an on-the-ground observer of Title 10 activities during the Sandy response in New York, December 2013 – January, 2014. These assertions are corroborated across multiple DoD after action reports reviewed while conducting this research.

[70] *Ibid.*

policy guidance that encourages the use and active employment of DSCA knowledgeable SJA personnel as contributing members of future JTF staffs. Consideration should also be given to employing two attorneys; one with Title 10 knowledge and oversight, one with Title 32 knowledge and oversight. Including SJAs in future DSCA staffs will enhance the operational and legal integrity and minimize future issues like those encountered following Sandy. However, legal knowledge alone is not sufficient to improving future DSCA operations under the dual status commander construct. The confusion among Title 10 forces during this response points to a critical need to improve DSCA education in future Title 10 officers.

7.3.2.8 Expand and Reinforce DSCA Education and Training for Officers

If Sandy is a barometer for the state of DSCA knowledge among Title 10 commanders, there is significant room for improvement. Not only were some Title 10 commanders unaware of who the dual status commander was or how to contact him and his staff, some officers had never heard of the dual status commander construct prior to Hurricane Sandy.[71] Active Component forces demonstrated a degree of ignorance or disregard to the mission assignment process that was reaffirmed through command guidance. By abandoning processes and procedures, some Title 10 forces supplanted (rather than supported) local authorities' efforts. Likewise, USACE personnel were equally unfamiliar with the dual status commander construct and the statutory limitations over Title 10 forces in support of ESF-3. While not a blanket

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[71] Interviews with various DoD employees, National Guard Officers, and Active Component officers involved in the Sandy response, January – March 2014, and reaffirmed through document analysis of after action reports and other Sandy-relevant resources.

indictment of the military officer corps or the USACE, as only a small sample participated in Sandy, these issues are just some of the many encountered during the DSCA response, further suggesting that improvements to DSCA education are necessary.

Most, if not all, top-level DoD schools offer some degree of DSCA education; whether through practical application exercises, classroom instruction, or a combination of both. Many officers also receive in-depth instruction on or exposure to the topic through the completion of theses and other capstone-type projects pursued while in residence. So while most commanders have received at least some exposure to DSCA, the inherent complexities and fluidity of the DSCA environment require constant refresher training. Not all commands/billets require the same level of DSCA knowledge, however. Therefore, DoD, with the support of the individual services, should identify and designate DSCA-relevant command billets required to complete annual DSCA training. Following an assessment of expected DSCA requirements, capabilities assessments should facilitate the identification of DSCA-capable units and their respective command billets. An example DSCA-capable unit is the Marine Expeditionary Unit (MEU). MEU commanders from I and II MEF (Marine Expeditionary Force) (CONUS) should receive annual refresher training similar in format to the currently offered DSCA courses via Joint Knowledge Online (JKO).

In addition to identifying DSCA-relevant command billets and requiring refresher training, DSCA education should occur during basic officer training and continue during subsequent professional military education/career level schools. Marine officers attending The Basic School, for example, should receive DSCA familiarization training via classroom instruction during Phase Four of the course

curriculum. Following initial exposure in entry level schools, officers will have a foundational understanding of the subject to leverage as they progress through future professional military education. Adopting such educational requirements for company grade officers will ensure those officers slated for top-level school and future command billets at DSCA capable units possess the necessary and continued education to facilitate operationally and tactically sound decision-making in future DSCA environments.

7.4   Conclusion

The preceding analysis offered suggestions aimed at improving the mechanics of the dual status commander process through various operational strategy and policy-oriented recommendations. With further consideration of these recommendations, DoD and state National Guard forces can continue improving coordination efforts during combined incident response scenarios. In this context, the dual status commander concept shows promise and has been used again in more recent events with notable success.[72] While the concept is sound, the execution during Sandy was flawed. Failing to acknowledge and improve upon the lessons learned from Sandy will question the efficacy of using dual status commanders for future response efforts. If we truly want to commit to the dual status commander as the usual and customary command arrangement as the law states, we need to maximize the use of this and other analyses in order to repeat the successes and avoid the failures in future operations.

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[72] A dual status commander was appointed and commanded Joint Task Force Centennial, a combined Title 10 and 32 operation during the September 2013 response to the Colorado Floods.

Chapter 8

CONCLUSION

This final chapter of the dissertation offers a brief summary of the completed work, a discussion of the contributions, suggestions for future research, and a short narrative discussing some final thoughts on the project and its significance.

8.1   Summary of Dissertation

The 2012 military response to Hurricane Sandy in New York was historically significant. As discussed, for the first time in history, a dual status commander commanded both state National Guard and federal military forces during a no-notice/limited-notice disaster response operation. The events that occurred during the storm response provided a timely and relevant opportunity to examine the first-time use of this unique command arrangement and assess the successes and failures of the operation to ultimately develop new ways to improve domestic military disaster response operations integrating both state National Guard and federal military forces. Since domestic military disaster response operations are influenced by policy, law, and politics, military response is a unique element of domestic disaster response in the United States. Within this, the dual status commander concept – intended as a solution to state and federal military coordination challenges – presents an additional layer of complexity equally influenced by the same policies, laws, and politics. Given this added complexity, the first-time use of a dual status commander during Hurricane Sandy experienced several notable challenges needing further exploration. With little

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known about the dual status commander concept and limited substantive knowledge of the military's role in domestic disaster response in the current literature, Hurricane Sandy and the first-time use of the dual status commander arrangement in a disaster response was an ideal platform for this dissertation research effort.

To comprehensively examine the dual status commander arrangement and its use during Hurricane Sandy, the dissertation began with an exhaustive literature review of several topics relevant to the research effort. The literature review addressed the background, history, and current state of domestic military disaster response operations, integrating relevant material from scholarly research as well reviews of laws, policies, and other formal guidance documents. It then discussed in detail the history and development of the dual status commander concept and its use in planned military civil support operations prior to Hurricane Sandy. After addressing the current state of knowledge and gaps of both defense support of civil authorities and the dual status commander, the literature review shifted to a review of process improvement concepts and strategies. The review offered material that supported and positioned process improvement as a tool with potential utility to the current challenges plaguing domestic military disaster response efforts. After addressing the relevant body of knowledge concerning DSCA, the dual status commander, and process improvement, the next chapter of the dissertation discussed the proposed research methods for addressing the stated problem.

Chapter 3 of the dissertation discussed the qualitative approach to the research and the subsequent methods employed to collect and analyze the data. The decision to use a combination approach consisting of document review, semi-structured interviews, non-participant observation, and focus groups was discussed. The

qualitative coding process used to analyze the data was addressed as well. After addressing the relevant literature concerning the research design and methods, the dissertation offered a discussion of the two major intended products of the research: the Hurricane Sandy case study and the dual status commander capability maturity model (DSC2M2).

Chapter 4 of the dissertation addressed the Hurricane Sandy case study effort. This chapter presented a detailed discussion and analysis of the combined state and federal military response to Hurricane Sandy in New York under the dual status commander. The case study included a chronology of events before and during the storm as related to the military response. Based on the event analysis, the case study then addressed several lessons learned as a result. The lessons learned discussion was presented in the form of both successes and shortfalls, with each identified strength or weakness discussed in the context of the storm response and its significance for future operations of similar scope and arrangement. The material gathered during the case study of Hurricane Sandy served as the basis for the design and development of the DSC2M2.

In order to explain and support the logic and rationale for developing a maturity model specific to the challenges of a dual status commander-led operation, Chapter 5 offered a brief discussion of the benefits of process improvement techniques in a variety of organizational contexts including DoD business operations. The conceptual argument presented in this chapter serves as the basis for Chapter 6 and the discussion of the DSC2M2 design, development, and potential application in future operations.

Chapter 6 of the dissertation detailed the specifics of the DSC2M2. The chapter outlines the model's origins using the CMMI structure as a basis for its concept and development. It also discusses the model's design architecture including various similarities and differences with the recognized CMMI framework. As well, the chapter briefly summarizes the model's content including its components and their relationships to the intended utility of the model. The chapter concludes with a discussion of the model's intended utility in future operations, including suggestions for how to use the model both during the conduct of response efforts and in a post-response capacity as a performance measurement tool.

The final substantive chapter of the dissertation presents a series of strategy and policy recommendations based on both the case study and maturity model development discussion offered throughout the dissertation. These recommendations, based on the Sandy study and split between strategic and operational and policy and legislative emphasis, offer DoD officials, elected officials, and other relevant stakeholders with a series of considerations for improving future DSCA and DSC-led domestic disaster response operations. These recommendations, if implemented, have the potential to significantly improve the efficiency and effectiveness of future military-involved civil support operations. Further, these recommendations, in addition to the products previously noted, form the substance of the dissertation's contributions.

8.2   Contributions

The primary intent of this research was to develop knowledge to help improve domestic military disaster response operations in support of civil authorities. This dissertation developed such knowledge and has generated several contributions to the

body of research dedicated to this topic. In addition to a thorough literature review integrating defense support of civil authorities, dual status commanders, and process improvement literature, this dissertation contributes original research to the study of Hurricane Sandy, and original research to the study of the dual status commander arrangement. Additionally, the dual status commander capability maturity model is a new and original contribution to the field with potential to guide changes and improvements in future DSC-led missions. Finally, the 15 strategy and policy recommendations based on the analysis of the research data are also original contributions aimed at helping policy makers and other stakeholders improve future civil support operations through changes to current policies, laws, and procedures.

In the context of the overall contributions and significance of this study, the dual status commander arrangement is a current policy initiative within DoD that lacks considerable research and understanding. Using Hurricane Sandy as a case study platform, this research added to our knowledge of the benefits and limitations of the dual status commander arrangement during no-notice/limited-notice civil support events. Further, it also generated significant contributions to the growing body of knowledge surrounding Hurricane Sandy. Additionally, the development of a process improvement maturity model specific to the challenges of DSC-led operations contributed a unique tool to the DoD practitioner base that can also be replicated for scholarly research efforts in other fields. More simply stated the five significant contributions generated by this research are:

1.   Hurricane Sandy Research

2.   Dual Status Commander Research

3.   Dual Status Commander Capability Maturity Model (DSC2M2)

4.   Maturity Model Research – Design and Development

5.   Strategy/Policy Recommendations

8.2.1   Hurricane Sandy Research

Hurricane Sandy was an historic event for several reasons. As previously
noted, it was the largest Atlantic hurricane on record, the second costliest hurricane in
U.S. history, and directly affected the most populated city in the United States a week
prior to the 2012 presidential election. The storm's size, scope of damage, and
unprecedented timing codifies its significance. Similar to Katrina, researchers will be
studying this event for years to come. At this point, however, research examining
Hurricane Sandy is still in the early stages of development. Original research
emphasizing Hurricane Sandy, from any aspect, can be considered a contribution to
knowledge. By studying the military response to Hurricane Sandy specifically, this
project contributed knowledge of the event with a specific area of emphasis that can
serve as a basis for future studies in similar contexts.

8.2.2   Dual Status Commander Research

As discussed throughout this dissertation, there is limited research directly
addressing the dual status commander concept. Most of the research we have on this
topic comes from officers in various professional military education programs and
career-level DoD graduate degree programs. There is a dearth of scholarly research
even peripherally discussing the dual status commander concept in the context of
defense support of civil authorities. Expanding the body of knowledge by examining
the dual status commander concept used during Hurricane Sandy was a needed
contribution to research that can have implications for changes to future operational

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processes. Understanding the strengths and weaknesses of these unique organizational arrangements during a no-notice/limited-notice incident in the homeland is a gap that needed to be filled. While this research does not and cannot completely address all of the lacking knowledge in this particular area of emphasis, it provides a significant foundation for future research efforts. Lastly, investigating the dual status commander arrangement as a primary focus of study will lead to additional interest in both the research and practitioner communities respectively. Interest in this important policy initiative and operational concept will generate more conversation which will ultimately lead to further research and more contributions to the currently narrow field of knowledge.

8.2.3 Dual Status Commander Capability Maturity Model (DSC2M2)

Developing a process model for the complexities of dual status commander-led operations was a needed addition to current military planning and operational guidance publications. Consolidating and structuring operational best practices or essential task considerations into a single maturity model will improve commanders' understanding of these processes and aid in their decision making abilities. Further, the model is formatted in such a way as to allow for its inclusion in the appendices of appropriate procedural manuals and other such publications. This improved knowledge can provide a needed link between policy, procedures, and best practices that, if implemented, can lead to better disaster response efficiency and effectiveness from the U.S. military in future operations. As a result, the U.S. military will be better prepared and equipped to achieve its main objective during disaster response efforts; that is "save lives, prevent human suffering, and mitigate great property damage within the United States" (Department of Defense, 2012d, p. 16).

8.2.4 Maturity Model Research – Design and Development

Combining a case study, document review and analysis, semi-structured interviews, non-participant observations, and focus groups to form a research design is not unique, as each is an established method of qualitative research. However, applying these methods with the intent of developing a maturity model specific to a military operation, as was done for this research, is unique. Others in future work can assess this research design for its effectiveness and make changes as necessary. In the interim, combining these methods to develop an organizational and/or process-specific maturity model provides an approach for others to replicate in their efforts to develop similar products. Further, the development of a maturity model to this level of detail and specific to a military disaster response scenario has never been done. While some might disagree with the content of the model, the concept of developing a maturity model to address complex organizational decision making processes is valuable. Others can use the design and development of the DSC2M2 to replicate their own efforts to create models that – in their view – more accurately represent the complexities of dual status commander operations; or any other operational context which a similar model is deemed necessary.

8.2.5 Strategy/Policy Recommendations

In addition to the above contributions, this research presented a detailed discussion of recommended changes to military civil support strategy, law, and policy. The nature of this research, rooted at the intersection of legality, command authority, state sovereignty, and federalism, provided an ideal foundation for developing such recommendations. With 15 specific recommendations offered that suggest changes to laws, policies, procedures, and strategic approaches to domestic operations, this

project contributes its analysis to the ongoing efforts to improve domestic military strategy and policy and ultimately improve future defense support of civil authorities operations.

8.2.6 Summary

There is a lack of research dedicated to defense support of civil authorities. Many papers have been written about various aspects of military involvement in emergency and disaster response. However, most of these studies are focused on the social perceptions of military forces in a disaster response scenario from an outsider's perspective. While many researchers acknowledge the valuable capabilities, capacities, and benefits of using the military to assist in civil emergencies (Neal and Phillips, 1995; Yelvington, 1997; Cowper, 2000; Harrald, 2006; Ginter, McCormick, Rucks, Wingate, and Abdolrasulnia, 2006; Milliman et al., 2006a; 2006b; Comfort, 2007; Hamilton and Toh, 2010; Apte and Heath, 2011), the dominant perception in the literature is that of an overwhelming military force whose participation in civil support missions is unwelcome and poorly suited for the social complexities of disaster response (Dynes, 1994; 2000; 2003; 2006; Dworken, 1995; Duffey, 2000; Fordham, 2003; Healy, 2003; Bello, 2006; Franke, 2006; Rietjens, 2006; Gunewardena and Schuller, 2008; McCleary, 2009; Hannigan, 2012). This research perception contributes to a negative bias in the research community towards military forces involved in disaster response efforts. This research attempted to assess the military response component from a different perspective; one that addressed the value of military support to civil authorities and emphasized the benefits of having such a force as a support entity during major emergencies and disasters.

In the end, this project contributed to the ongoing knowledge generation process by addressing several key issues that have the potential to improve knowledge and practice in significant ways. Such improvements will lead to increased capability of military personnel, greater maturity of operational processes, enhanced knowledge for those unfamiliar with the identified concepts, and ultimately more lives, property, and resources saved in the aftermath of the next event requiring defense support of civil authorities.

8.3   Future Research

This research used the dual status commander-led response to Hurricane Sandy in New York to assess the efficacy of the command arrangement during a no-notice/limited-notice incident. There are opportunities beyond this for further research that should be considered.

8.3.1   Deploying the Model

Combining several individual interviews, non-participant observations of dual status commander-led exercises, document review, and focus groups allowed for the creation of a process maturity model designed specifically for such operations. Designing and populating the model is only the first step towards improving future dual status commander response operations. To determine the utility and value of the model in an operational context, the model must be deployed and tested to allow for analysis of its usability and affect, if any, on dual status commander operations. Future research efforts in this regard should focus on designing a suitable research project to assess the model in various operational scenarios. Deploying the model to evaluate its efficacy will help to identify the strengths and weaknesses of the model, improve upon

the original design, and determine ways in which the model can be best used to improve dual status commander-led response operations.

8.3.2 Comparing Sandy to more Recent Incidents

At the onset of this project, Hurricane Sandy was the only no-notice/limited-notice response operation in U.S. history in which a dual status commander assumed command of both state National Guard and federal military forces during the same operation. As previously noted, the Colorado floods of 2013 also saw a dual status commander appointed with both federal and state military force contingents participating in the Joint Task Force operation. With the 2012 NDAA's adoption of the dual status commander concept as the usual and customary command arrangement during simultaneous state and federal military operations, we will certainly see this command structure used again in future incidents. Hurricane Sandy and the Colorado floods will not be the only incidents from which we can learn about the dual status commander arrangement. Future research should examine more recent incident response under the dual status commander arrangement and use the lessons learned from Sandy as a comparative basis for analysis. Using other response operations to compare to Sandy will help to determine what issues still persist under this command arrangement and what, if any, progress is being made in an effort to improve these operations.

8.3.3 Develop Alternative Command Concepts for Joint Military Response

As this research has demonstrated, there are issues and challenges with the current dual status commander concept and its execution during no-notice/limited-notice response operations. While there are also tangible benefits to this arrangement,

there is an opportunity to develop new alternatives to commanding and coordinating joint domestic military response operations. Using this study as a basis for the flaws inherent in the dual status commander concept and execution as it occurred in Sandy, future research should seek alternative approaches to building and maintaining joint operational coordination between state National Guard and federal military forces participating in disaster response efforts. These research approaches should seek to determine if there is a better way to achieve a unified effort between state and federal forces, while still considering the legal and political challenges and strategic implications of such operations.

8.3.4   Solicit Political, Institutional and Civilian Perspectives

One significant limitation of this research is the lack of relevant political, institutional, and civilian perspectives on the utility and efficacy of the dual status commander concept for coordinating domestic disaster response. Requests for such perspectives were made via email and telephone to both the Governor's Office of New York and the New York City Office of Emergency Management. Although these requests for assistance went unfulfilled and thus excluded these perspectives from the final dissertation, these are none the less significant perspectives that can and should be obtained in future research efforts examining the dual status commander concept during no-notice/limited-notice response operations.

While the concept is rooted in military command and organization, the dual status commander is – at its core – a coordination mechanism designed to more effectively link the perspectives of not only state and federal military, but also any participating civilian response agencies and organizations in order to generate a more coordinated and collaborative response environment and unify inter-agency response

efforts. Therefore, the perspectives of politicians, elected officials, and other civilian emergency managers must be included in future research efforts. Including these perspectives will help us to more effectively gauge what civilians know about the dual status commander, and, more importantly, what more do they need to know in order to facilitate more effective and integrated future response efforts.

8.3.5 Develop Maturity Models for Emergency Management Operations

This research demonstrates how the maturity model concept can be adapted for and used in operational contexts. While the principal focus of this dissertation was on the development of a maturity model to address specific challenges noted in complex military disaster response operations under a unique and seldom-used organizational command structure, the idea presented here can and should be applied to more traditional forms of emergency management operations. Doing so can help researchers and emergency managers determine if maturity models can offer an actual benefit to emergency management operations similar to the argument presented in this dissertation.

8.4 Final thoughts

Based on the summation of the analysis and results of this research effort, one thing is clear: the dual status commander concept has potential for success, but there are too many bureaucratic, legal, and even political impediments negatively affecting its employment during no-notice/limited-notice incident response. Simply put: DoD and the states need to embrace the dual status commander by empowering these commanders to do their jobs; or simply abandon the concept entirely. As discussed throughout this study, the dual status commander concept has tremendous value and

utility for future civil support operations integrating both the National Guard and federal military. This command arrangement is the precise coordination mechanism needed to address the noted challenges that have long plagued combined military operations in the past. While it has been used successfully in pre-planned events, the dual status commander concept has major limitations when employed during a no-notice/limited-notice response scenario. In its current form, there are too many obstacles to achieving a unified, collaborative, and fully integrated effort across both state and federal entities. There are many who support the concept and advocate for its continued use. Likewise, there are many who criticize the concept as an unworkable, over-reaching solution to a legally and operationally complex mission set. Despite these criticisms, this dissertation examined and presented ways to help improve future employment of the dual status commander concept during no-notice/limited notice incident response.

To maintain operational effectiveness, DoD must ensure its ability to continually adapt to changing policy and legislation – such as the dual status commander initiative – without sacrificing performance during domestic civil support operations. The dual status commander response to Hurricane Sandy was only the first attempt to use this unique coordination mechanism in response to a domestic disaster. There are numerous opportunities for improvement. Emphasizing task performance and processes is the proper approach to improve upon the challenges noted during Sandy. Process improvement strategies provide the foundation for generating such improvements and should be integrated into future dual status commander DSCA operations. Doing so will result in improved coordination between the National Guard and federal military forces during disaster response, ultimately leading to more lives

saved, fewer properties lost, and less suffering during the next significant incident requiring military support.

Regardless of perspective, it is evident from this dissertation that we need to continue to improve our combined state and federal military response capability. Whether the dual status commander is the right solution to this challenge is yet to be determined. We need more opportunities beyond this dissertation to analyze and assess the efficacy of this command construct before casting final judgment from a single case study. In the end, this study should serve as a solid foundation for further analysis of the dual status commander arrangement in future operations. Hopefully such continued analysis will lead to improved military capabilities and ultimately more lives and property saved in response to a future disaster or emergency.

Finally, the U.S. military's primary mission is to fight and win our nation's wars. In this regard, our nation's military will continue training for combat operations and other contingency missions around the world. However, with the ongoing defense drawdown from combat operations in Afghanistan, the military will now look to enhance its civil support readiness as a priority domestic mission focus. The reality is that when a large-scale incident occurs, the DoD and its assets can provide timely and extensive support beyond the capacity of any state or local government agency. Combining federal and state military forces only multiplies this already unparalleled capability further. Written into law as the 'usual and customary' arrangement during the simultaneous employment of the National Guard and Armed Forces, the dual status commander arrangement serves as the coordination mechanism that should enable the efficient and effective integration and employment of military forces to meet the needs of those affected by future disasters and emergencies. With the events

of Hurricane Sandy behind us, now is the time to learn from this historic response and determine ways to improve future military civil support efforts under the dual status commander construct.

With such a large and complex mission to coordinate, including the consideration of relevant laws, procedures, and command authorities, many of which are embedded in our Constitution, the dual status commander construct provides the necessary structure to facilitate effective DSCA operations involving between states and the federal government. While improvisation, adaptability, and flexibility are valued aspects of military operational doctrine and mission-oriented command and control, the complexities of no-notice/limited-notice response missions require some semblance of organization and boundaries. Hurricane Sandy was a significant event; but it was not a catastrophe. The urgency of the federal response and the lack of adherence to policies and procedures added to the confusion in some cases. We cannot forecast future requirements nor can we predict how future operations will transpire. There will always be a level of uncertainty and a sense of urgency during no-notice/limited-notice incidents. We can, however, mitigate in part future uncertainty and confusion through the application of lessons learned, such as those provided in this analysis. By identifying and incorporating lessons learned into future incident response, we can continue our efforts to mature these complex operations. Such improvements will likely lead to increased capability of military personnel, enhanced knowledge for those unfamiliar with the identified concepts, and ultimately more lives, property, and resources saved in the aftermath of the next event requiring defense support of civil authorities.

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Appendix A

ACRONYMS

AAR – After Action Report

AC – Active Component

ADP – Army Doctrinal Publication

ARG – Amphibious Ready Group

ARNORTH – Army North

AST – Atlantic Strike Team

BG – Brigadier General

CALL – Center for Army Lessons Learned

CCRP – Command and Control Research Program

CG – Commanding General

CITI – Collaborative Institutional Training Initiative

CJCS – Chairman of the Joint Chiefs of Staff

CJCSG – Chairman of the Joint Chiefs of Staff Guidance

CJCSM – Chairman of the Joint Chiefs of Staff Manual

CLL – Center for Lessons Learned

CMM – Capability Maturity Model

CMMI – Capability Maturity Model Integrated

CMU – Carnegie Mellon University

COC – Command Operations Center

COCOM – Combatant Command

CONUS – Continental United States

COP – Common Operating Picture

CRS – Congressional Research Service

DCO – Defense Coordinating Officer

DHS – Department of Homeland Security

DLA – Defense Logistics Agency

DMAIC - Define Measure Analyze Improve Control

DOD – Department of Defense

DODD – Department of Defense Directive

DOTMLPF-P - Doctrine, Organization, Training, Material, Leadership,

Personnel, Facilities, and Policy

DSC – Dual Status Commander

DSC JTF – Dual Status Commander Joint Task Force

DSC2M2 – Dual Status Commander Capability Maturity Model

DSCA – Defense Support of Civil Authorities

EMAC – Emergency Management Assistance Compact

EPLO – Emergency Preparedness Liaison Officer

ERAP – External Research Associates Program

ESF – Emergency Support Function

EXORD – Execution Order

FCO – Federal Coordinating Officer

FEMA – Federal Emergency Management Agency

FM – Field Manual

FOUO – For Official Use Only

FRAGO – Fragmentary Order

FY – Fiscal Year

GA - Georgia

GAO – Government Accountability Office

GG – Generic Goal

GOV – Governor

GP – Generic Practice

GPRA – Government Performance and Results Act

HA/DR – Humanitarian Assistance/Disaster Response

HD – Homeland Defense

HDASA – Homeland Defense and America's Security Affairs

HQMC – Headquarters Marine Corps

HS – Homeland Security

HSEEP – Homeland Security Exercise Evaluation Program

IA – Insurrection Act

IRA – Immediate Response Authority

IRB – Institutional Review Board

IT – Information Technology

JBMDL – Joint Base McGuire Dix Lakehurst

JCE – Joint Coordinating Element

JFHQ – Joint Force Headquarters

JFLCC – Joint Force Land Component Commander

JFMCC – Joint Force Maritime Component Commander

JKO – Joint Knowledge Online

JOA – Joint Operations Area

JOC – Joint Operating Concept

JP – Joint Publication

JRSOI – Joint Reception Staging Onward Movement and Integration

JTF – Joint Task Force

JTF-CS – Joint Task Force Civil Support

JTM – Joint Training Manual

JTS – Joint Training System

IDEAL – Initiation Diagnosis Establishment Action Learning

KSIL – Key Strategic Issues List

LFA – Lead Federal Agency

LNO – Liaison Officer

LSS – Lean Six Sigma

LTG – Lieutenant General

MA – Mission Assignment

MA – Massachusetts

MBO – Management by Objectives

MCCLL – Marine Corps Center for Lessons Learned

MD – Maryland

MEF – Marine Expeditionary Force

MEU – Marine Expeditionary Unit

MG – Major General

MICP – Manager's Internal Control Program

MOA – Memorandum of Agreement

MTTP – Multi-Service Tactics Techniques and Procedures

N2C2M2 – NATO Network Enabled Command and Control Maturity Model

NATO – North Atlantic Treaty Organization

NDAA – National Defense Authorization Act

NFPA – National Fire Protection Association

NG – National Guard

NGB – National Guard Bureau

NH – New Hampshire

NIMS – National Incident Management System

NJ – New Jersey

NMS – National Military Strategy

NOAA – National Oceanic and Atmospheric Administration

NPG – National Preparedness Goal

NRF – National Response Framework

NSS – National Security Strategy

NSSE – National Security Special Event

NORTHCOM – U.S. Northern Command

NWDC – Naval Warfare Development Center

NY – New York

NYC – New York City

OEM – Office of Emergency Management

OSD – Office of the Secretary of Defense

PA – Pennsylvania

PA – Process Area

PCA – Posse Comitatus Act

PDCA – Plan Do Check Act

PEMA – Pennsylvania Emergency Management Agency

PL – Public Law

PME – Professional Military Education

POTUS – President of the United States

PTDO – Prepare to Deploy Orders

POP – Period of Performance

QDR – Quadrennial Defense Review

RFA – Request for Assistance

RI – Rhode Island

SAD – State Active Duty

SCO – State Coordinating Officer

SECDEF – Secretary of Defense

SEI – Software Engineering Institute

SES – Senior Executive Service

SG – Specific Goal

SJA – Staff Judge Advocate

SMART – Specific Measurable Attainable Relevant Time-bound

SP – Specific Practice

SSI – Strategic Studies Institute

T10 – Title 10

T32 – Title 32

TACON – Tactical Control

TAG – The Adjutants General

TF – Task Force

TQM – Total Quality Management

TR – Technical Report

TRANSCOM – United States Transportation Command

TS – Tropical Storm

TTP – Tactics, Techniques, and Procedures

UOC – Unity of Command

UOE – Unity of Effort

US – United States

USA – United States Army

USACE – United States Army Corps of Engineers

USAF – United States Air Force

USAR – United States Army Reserve

USAWC – United States Army War College

USC – United States Code

USCG – United States Coast Guard

USFF – United States Fleet Forces

USMC – United States Marine Corps

USN – United States Navy

USS – United States Ship

VA – Virginia

VOCO – Verbal Orders of the Commanding Officer

Appendix B

GLOSSARY

32 USC § 315 – A law authorizing an Active Component military officer to temporarily command National Guard forces at the direction of the President and with consent of the State Governor; "Detail of regular members of the Army and Air Force to duty with the National Guard" (2000)

32 USC § 325 – A law authorizing a National Guard officer to temporarily command Active Component military forces at the direction of the President and with consent of the State Governor; "Relief from National Guard duty when ordered to active duty" (2004)

Active Component (AC) – Refers generally to military units on active duty in the Armed Forces of the United States including the Army, Navy, Air Force, and Marine Corps. For the purposes of this research, the U.S. Coast Guard is included within this definition

After Action Report (AAR) – A narrative report written by military commanders at the conclusion of an operational mission consisting of situations, observations, lessons learned, and recommendations for improvement

Armed Forces – Denotes active and reserve components of the federal military (Army, Navy, Air Force, Marine Corps); when used in this dissertation, the term Armed Forces specifically excludes the U.S. Coast Guard and the National Guard; see also "Federal Military Forces"

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Capability Level – A part of a Capability Maturity Model consisting of grouped Generic Goals and Practices representing process institutionalization

Capability Maturity Model (Integrated) (CMM/CMMI) – A process improvement model consisting of defined capability and maturity levels designed to represent organizational and procedural best practices

Civil Support (CS) – Military support provided to civil authorities by the Department of Defense during designated incidents of national significance such as emergencies, disasters, or special security events

Common Operating Picture (COP) – A singular perspective of operational situations shared by all command personnel with decision making authority

Defense Support of Civil Authorities (DSCA) – The use of federal military assets (personnel, equipment, etc) to support civil authorities during emergency and disaster response, law enforcement activities, national security special events, and other domestic activities where military forces are requested. The DSCA process is executed per Department of Defense Directive 3025.18.

Dual Status Commander (DSC) – A commissioned officer of the National Guard or Active Component military who is legally authorized under 32 USC § 325 or 32 USC § 315 to command both NG and AC military forces at the direction of the President and with consent of the State Governor

Dual Status Commander Capability Maturity Model (DSC2M2) – the acronym identifier given to the final maturity model structure developed as part of this dissertation. The DSC2M2 is modeled after the capability maturity model (CMM) design architecture with its tasks and associated components specifically tailored to

the complexities of an unplanned dual status commander-led joint task force operation.

Federal Military Forces – Military units of the active and reserve components of the Armed Forces of the United States; for the purposes of this dissertation, Federal Military Forces refers to military units other than the National Guard; see also "Armed Forces"

Federalism – A system of government emphasizing shared powers between individual states and a central governing body

Fragmentary Order (FRAGO) – an abbreviated version of a military operations order issued when a change to a previously issued order is necessary

Generic Goal (GG) – A comprehensive requirement to institutionalize a chosen process area; mapped to capability levels; all GG for a chosen capability level must be satisfied before progressing

Generic Practice (GP) – A defined activity relative to multiple process areas that must be accomplished as partial fulfillment of a Generic Goal

Homeland Defense (HD) – The activities associated with the protection of the United States and its territories against external threats and aggression

Homeland Defense and America's Security Affairs (HD/ASA) – This dissertation makes several references to the Office of the Assistant Secretary of Defense (ASD) for HD/ASA. This office is located in the Pentagon and is the office within the Defense Department primarily responsible for establishing homeland defense and defense support of civil authorities policies and activities

Homeland Security (HS) – A nationally coordinated effort to specifically reduce vulnerability to, prevent, or recover from acts of terrorism, natural, and man-made disasters within the United States

Insurrection Act of 1807 (IA) - 10 U.S.C. § 331-335 (2008); a federal law establishing the limitations and circumstances of the President's ability to deploy federal military troops within the United States in order to quell civil disorder, insurrection, or rebellion

Joint Action Plan – Shortened reference to the Joint Action Plan for Developing Unity of Effort. The Joint Action Plan is a 2011 document developed and agreed upon by both the Department of Defense and the Council of Governors representing the states' interests in the matter of domestic civil support operations. Among the five areas of discussion, the Joint Action Plan specifically addresses the need for dual status commanders during combined state and federal military operations. It also generally outlines the expected processes and procedures for requesting, authorizing, and deploying a dual status commander to lead a response operation within a state

Joint Operations Area (JOA) – A defined area of land, sea, and air in which a Joint Task Force commander is responsible for the conduct of all joint military operations

Joint Task Force (JTF) Sandy – Military force structure consisting of state National Guard, civilian personnel, and federal military forces and established to coordinate and provide civil support response assistance in New York following Hurricane Sandy

Joint Training System (JTS) – A military reference publication that identifies and describes training requirements and specified performance measures related to military readiness activities

Key Strategic Issues List (KSIL) – An annual report published by the United States Army War College through the Strategic Studies Institute that addresses notable strategy and policy issues of interest to the Department of Defense

Maturity Level – A section of grouped Process Areas relative to increasing organizational process institutionalization and repeatability

Mission Essential Task/List (MET / METL) – A MET is generally considered to be a task or action determined by a commander to be necessary for mission accomplishment. A METL, therefore, is a compilation of several METs in list form that serves as a guide for commanders to accomplish a given mission.

National Defense Authorization Act (NDAA) – An annually published federal law specifically addressing all Department of Defense budgets and expense requirements and/or authorizations

National Guard (NG) – A reserve force of trained military personnel assigned to each U.S. state and territory under the command authority of the respective state Governor per Title 32 United States Code. Under Title 10 United States Code, NG personnel can be called to federal service and serve under the authority of the President of the United States. Also referred to as the "militia."

National Security Special Event (NSSE) – An event of national significance that poses a potential security risk due to terrorism or deviant activity

No-Notice/Limited-Notice Incident – An incident that occurs without warning (earthquake, terrorist attack, etc) or with minimal advance warning (hurricane, tornado, flood, etc)

Northern Command (NORTHCOM) – Domestic joint military command responsible for coordinating homeland defense and defense support of civil authorities efforts within the United States

Posse Comitatus Act (PCA) – 18 U.S.C. § 1385 (1981); a federal law intended to limit the powers and authority of the President in using federal military personnel to perform law enforcement activities or enforce laws within the United States

Process Area (PA) – A cluster of related task considerations or practices within a maturity level

Process Improvement – A method of identifying and analyzing a series of practices or actions in order to determine the most appropriate sequence needed to meet defined goals and objectives

Specific Goal (SG) – A defined activity area superior to Specific Practices; mapped to and within individual Process Areas which must be satisfied prior to progressing to the next stage of maturity

Specific Practice (SP) – A defined activity that must be accomplished as partial fulfillment of a Specific Goal

Sovereignty – A state of independent authority removed from the restrictions of a larger central governing body

State Active Duty (SAD) – A military duty status pertaining to state National Guard forces called to state service at the request and under the authority of the State Governor; Posse Comitatus does not apply

Target Profile – A mechanism of goal orientation intended to help users of the DSC2M2 plan targeted improvement efforts by selecting a desired capability or maturity level and focusing on only those tasks required to reach the desired level of performance relative to the model.

Task Consideration – In relation to the DSC2M2, a task consideration is similar to a Specific Practice of the Capability Maturity Model. For the DSC2M2, a task consideration represents a defined action that must be performed to contribute to satisfying a particular process area and by extension, a maturity level.

The Adjutant's General (TAG) – The senior military officer of a State or territory responsible for overseeing the employment of all state National Guard forces not under Title 10 status; reports directly to the Governor; referred to as the "TAG"

Title 10 Status – A military duty status pertaining to state National Guard forces called to federal service at the request and under the authority of the President; forces under Title 10 or "federalized" status are authorized to receive federal pay and benefits while performing their assigned duties; Posse Comitatus does apply to the National Guard while in Title 10 status

Title 32 Status – A military duty status pertaining to state National Guard forces called to state service at the request and under the authority of the State Governor and authorized by the President to receive federal pay and benefits while performing the assigned duties; Posse Comitatus does not apply

Unity of Command (UOC) – A military organizational architecture in which one commander maintains command authority and responsibility for all subordinate forces

Unity of Effort (UOE) – A state where the activities of multiple military forces are working towards and in support of similar objectives

Appendix C

DOMESTIC LAWS RELEVANT TO THE DUAL STATUS COMMANDER

Building on Figure 1 in Chapter 2 and the recommendations in Chapter 7,

Table 17 briefly describes each of the relevant laws that relate to the DSC concept.

Table 17: Dual Status Commander-Relevant Laws

Military Civil Support – Laws Relevant to the Dual Status Commander	
Law/Authority	Description
Article I, Sec. 8	Constitutional authority given to Congress to provide for defense of the nation; includes the authority to call forth the militia – or National Guard – to execute the laws of the nation, prevent insurrections and repel invasions; establishes the legal precedent for using the National Guard during domestic military operations
Article II, Sec. 2	Establishes the President as the Commander in Chief of the Armed Forces of the United States; and the National Guard of the individual states when called into service of the United States
Amendment X	Reinforces the federalism concept by reserving the rights and powers not delegated to the United States by the Constitution to the states respectively; this can be interpreted as the authority for a state governor to serve as Commander in Chief of the state militia or National Guard
Title 10 United States Code (USC)	Laws pertaining to the government and regulation of the Armed Forces of the United States
10 USC § 331-335	Insurrection Act of 1807: A series of laws designed to manage and limit the President's power to deploy federal troops within the United States in order to suppress an insurrection, repel an invasion, and/or quell rebellion and lawlessness; the Insurrection Act provides a legal mechanism to circumvent the restrictions of the Posse Comitatus Act (see below) and deploy federal troops to engage in law enforcement activities under specific circumstances prescribed by the law

Table 17 continued

10 USC § 12304a	Authorizes the activation of members of the Selected Reserve Component forces and Individual Ready Reserve to be activated for response to a domestic emergency or disaster at the direction of the Secretary of Defense
10 USC § 12403	Authorizes the President to call members of the National Guard into federal service of the United States; National Guard forces operating under this authority are colloquially referred as being in a "federalized" status
Title 32 USC	Laws pertaining to the government and regulation of the National Guard
32 USC § 315	Authorizes a commissioned officer of the federal Armed Forces to receive a temporary commission in the National Guard of the state in which service is required; this allows a federal military officer to legally command state National Guard forces (2000)
32 USC § 325	Authorizes a commissioned officer of the National Guard in any state to receive a temporary commission in the federal Armed Forces; this allows a National Guard officer to legally command federal military forces (2004)
32 USC § 502f	Authorizes members of the National Guard to perform duties and services in support of national interests at the request of the President or Secretary of Defense while receiving federal pay and benefits rather than state pay.
18 USC § 1385	Posse Comitatus Act: the principal intent of the Posse Comitatus Act is to restrict the President and the federal government from using federal military forces to perform law enforcement activities and/or enforce laws within the states and territories of the United States. The restrictions of Posse Comitatus do not apply to the U.S. Coast Guard or the National Guard when operating in state controlled status.
42 USC § 5122	Robert T. Stafford Disaster and Emergency Relief Assistance Act - Utilization of DoD Resources (section 5170b(C)): This section specifies that when the preservation of life and property are deemed necessary, at the request of a state Governor, the President may authorize DoD resources to assist in emergency and disaster relief at a 75% cost share to the federal government.
Public Law (P.L.) 112-81: 2012 National Defense Authorization Act (NDAA) Sec. 515 (C)(1)	Codifies the dual status commander (citing 32 USC § 315/325) as the usual and customary command arrangement during the simultaneous employment of the National Guard and Armed Forces in support of civil authorities during a major disaster or emergency.

Appendix D

HISTORY OF DUAL STATUS COMMANDER AUTHORIZATIONS

Table 18 is a comprehensive listing of dual status commander authorizations. The table lists the name of the operation, the type, dates, location and whether Title 10 forces were deployed. This table content was provided by contacts in HD/ASA.

Table 18: History of Dual Status Commander Authorizations

Operation	Type	Dates	Location	Title 10 Forces
G-8	NSSE	June 8-10, 2004	Sea Island, GA	Yes
Democratic National Convention	NSSE	July 26-29, 2004	Boston, MA	Yes
Republican National Convention	NSSE	August 30-September 2, 2004	New York, NY	Yes
Operation Winter Freeze	NSSE	November 2, 2004 to January 28, 2005	New Hampshire, Vermont and New York border with Canada (Swanton and Buffalo Sector)	Yes (all)
Democratic National Convention	NSSE	August 25-28, 2008	Denver, CO	Yes
Republican National Convention	NSSE	September 1-4, 2008	Minneapolis-St. Paul, MN	Yes

Table 18 continued

G-20 Summit	NSSE	September 24–25, 2009.	Pittsburgh, PA	Yes
National Scout Jamboree	NSSE	July 26, - August 4, 2010	Fort A.P. Hill, VA	Yes
Hurricane Irene	CM	August 27- September 2, 2011	New Hampshire New York North Carolina Rhode Island	No No No No
Asia-Pacific Economic Cooperation (APEC) Meeting	NSSE	November 7-14, 2011	Honolulu, Hawaii	Yes
NATO Summit	NSSE	May 18-20, 2012	Chicago, Illinois	Yes
Wildfires	CM	June 29- July 5, 2012	Colorado	No
Wildfires	CM	August 21- November 14, 2012	California	No
Hurricane Isaac	CM	August 24-29, 2012	Florida	No
Republican National Convention	NSSE	August 26-30, 2012	Tampa, Florida	Yes
Democratic National Convention	NSSE	September 3-6, 2012	Charlotte, North Carolina	Yes
Superstorm Sandy	CM	October 26- November 15, 2012	New Jersey New York Maryland New Hampshire Rhode Island Massachusetts	Yes Yes No No No No

Table 18 continued

Wildfire	CM	June 14-17, 2013	Colorado	No
National Scout Jamboree	NSSE	July 15-24, 2013	Mt. Hope, West Virginia	Yes
Floods	CM	September 20-23, 2013	Colorado	Yes
Super Bowl	NSSE	Jan 27 – Feb 3, 2014	New Jersey	No

NSSE – National Security Special Event (pre-planned event)

CM – Consequence Management (no-notice/limited-notice incident)

Appendix E

MILITARY REFERENCE PUBLICATIONS

Defense Support of Civil Authorities (DoD Directive 3025.18)

One of the principal documents establishing roles and responsibilities of the DoD during civil support missions is DoD Directive 3025.18. As a directive, this document is not a procedural manual and lacks the extensive guidance seen in many other DoD publications. However, given the increasing prominence of DSC arrangements for civil support missions and the revisions to this directive in September 2012, it is worth noting that this latest version of DoD Directive 3025.18 lacks any language related to authorities, responsibilities, or processes for DSC arrangements. This is a notable gap in the existing government literature that will likely be revised in future iterations of the directive. Further, the recent developments in DSC policy and procedures are well-documented in other military publications.

NORTHCOM Publication 3-20: Title 10 Support to Dual Status Commander-Led Joint Task Force Standard Operating Procedures

Official dual status commander policies are still under draft status within the DoD. As such, official guidance for dual status commander-led operations is limited to small sections of text within select military civil support publications with a broader scope than the dual status commander concept. The only publication directly addressing the DSC concept at this time is NORTHCOM Pub 3-20. Released in January 2012, this document outlines the employment procedures and considerations for the use of DSCs during civil support missions. However, this document pre-dates

Hurricane Sandy by nearly a year. Lessons learned from Sandy are beginning to matriculate in and have led to the need to re-write this publication according to officials at NORTHCOM.

Multi-Service Tactics, Techniques, and Procedures (MTTP) for DSCA 3-28

Released in February 2013, this reference publication is considered by many military planners to be the "how to" manual for conducting DSCA operations. This publication specifically addresses issues related to state and federal authorities during civil support missions (Figure 25) in addition to other important considerations for military coordination between federal and state forces. However, with 140 pages of information detailing the operational specifics of DSCA missions across the four military services, reserve component, and National Guard, it is worth noting that the DSC arrangement is mentioned only once (p. 10) in this document; despite its publication date *after* the events of Hurricane Sandy.
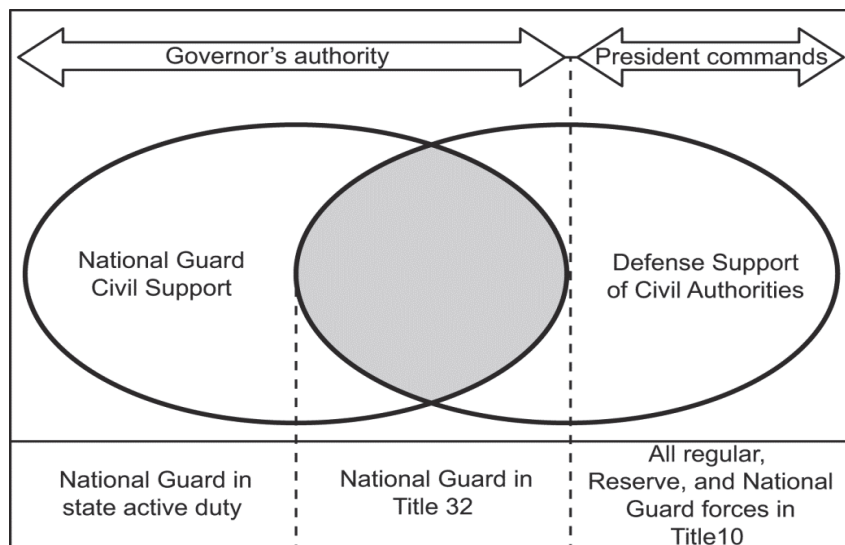

Figure 25: Civil Support Command Authorities
(Department of Defense, 2013b, p. 2)

Joint Publication (JP) 3-28 Defense Support of Civil Authorities

Published in July 2013 following significant revisions from the 2007 version, JP 3-28 offers the most comprehensive text regarding DSC policy of all the documents reviewed for this dissertation. This new version "introduces, defines and clarifies the dual-status commander to include nomination, training and appointment" requirements" (p. iii). Additionally, JP 3-28 includes a useful process diagram (Figure 26) to depict the DSC designation process once requested by state Governors (p. C-9, 2013).
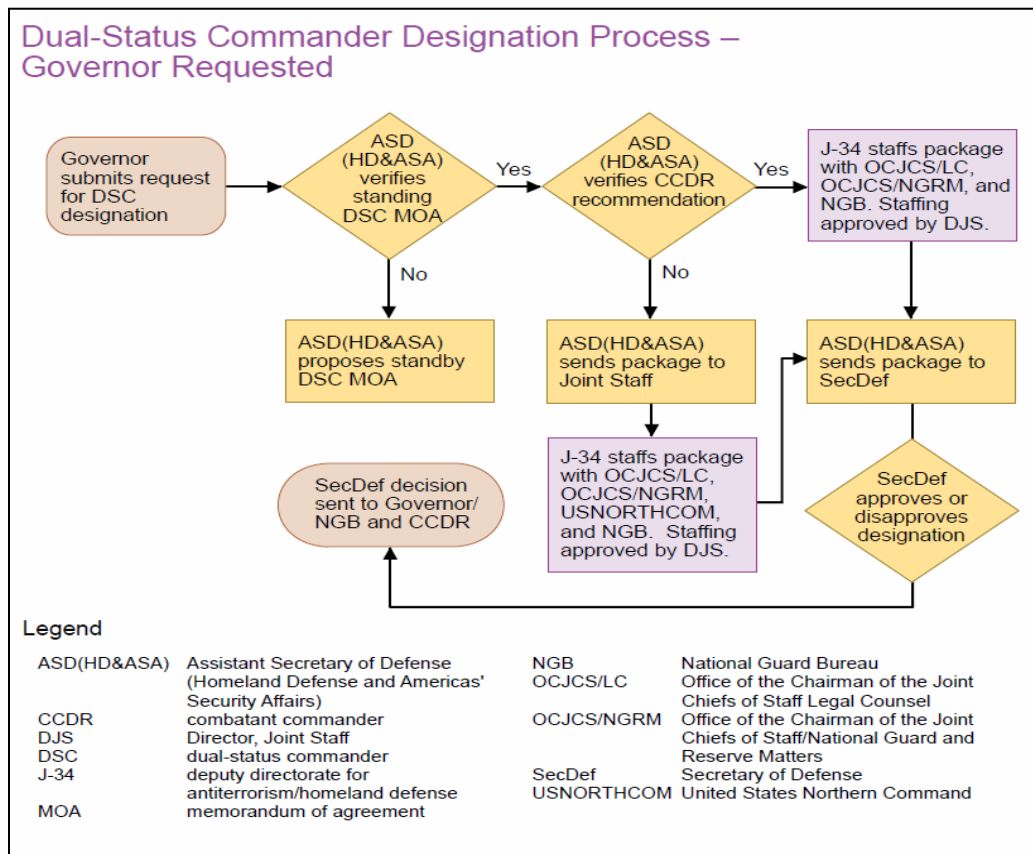

Figure 26: Dual Status Commander Designation Process
(Department of Defense, 2013a, p. C-9)

Army Field Manual (FM) 3-28 – Civil Support Operations

Given the likelihood that an Army officer will serve as a DSC, the U.S. Army maintains a detailed description of the DSC concept and construct within FM 3-28 (2010). This reference defines the authorities and requirements for establishing DSC arrangements and provides useful graphics to illustrate the operational and tactical command relationships between the DSC, state, and federal governments (Figure 27). However, defined guidance on the execution process for no-notice/limited-notice incidents is absent in this reference.
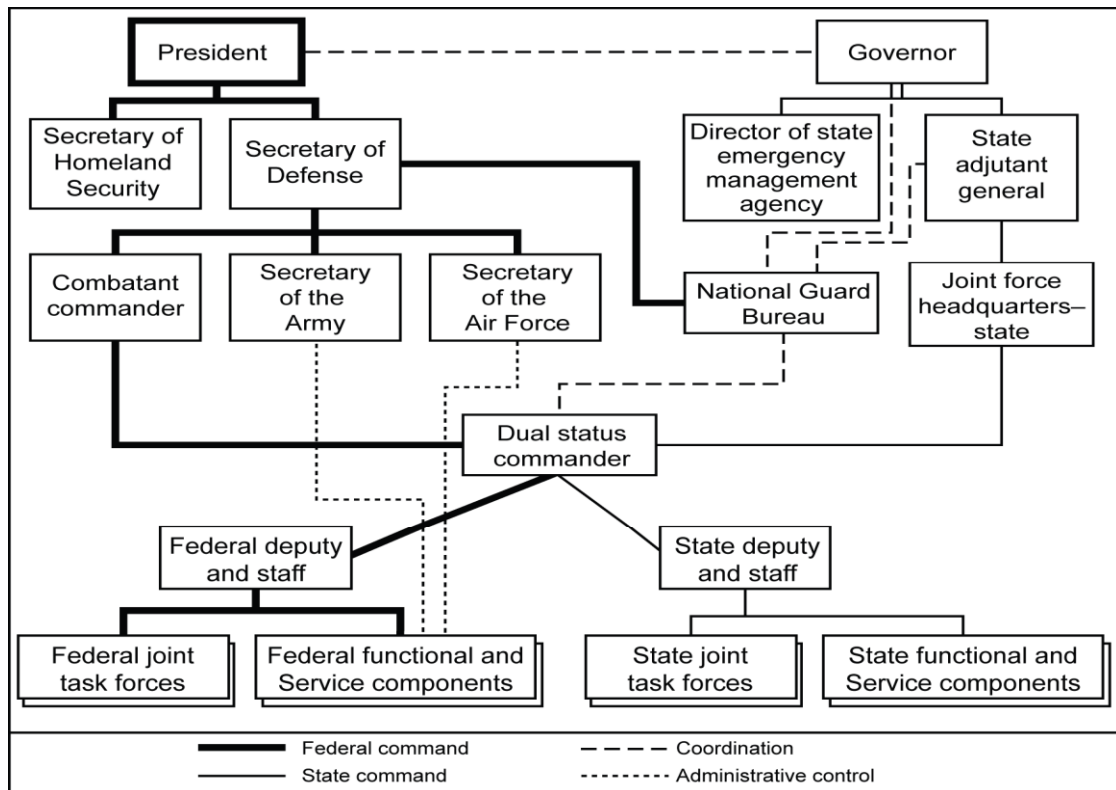

Figure 27: Example Dual Status Commander Structure
(Department of Defense, 2012c, p. 7-5)

Army Doctrinal Publication (ADP) 3-28

Like FM 3-28, ADP 3-28 (2012) also addresses the DSC concept in general

terminology as an alternative command structure to the more traditional parallel

command model used elsewhere. As with FM 3-28 and other previously addressed

military references, ADP 3-28 is also lacking specific process guidance regarding the

use of DSCs for no-notice/limited-notice incidents like Hurricane Sandy, beyond the

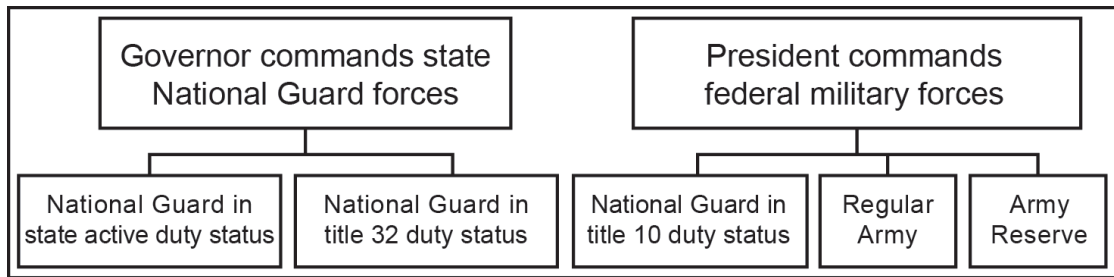duty status command relationships shown in Figure 28.

Figure 28: Duty Status Command Relationships
(Department of Defense, 2012a, p. 10)

Strategy for Homeland Defense and Defense Support of Civil Authorities

Published in February 2013, the Strategy for Homeland Defense and DSCA

outlines the strategic approaches DoD must take when engaging in domestic civil

support and homeland defense operations. It outlines a series of priority missions

specific to homeland defense and DSCA. The document emphasizes the unity of effort

concept addressed elsewhere in this dissertation. Building on this and in the context of

dual status commanders, the document notes that "DoD will continue to refine

processes for dual-status commanders and their associated command structures"

(Department of Defense, 2013c, p. 21). It notes the events of Hurricane Sandy as a

timely example of using DSCs for unplanned response operations and encourages future improvements.

National Guard Joint Force Headquarters – State (NG JFHQ) (DoD Directive 5105.83)

DoD Directive 5105.83 "establishes policy for and defines organization, management, responsibilities, and functions, relationships, and authorities of the NG JFHQ-State" (Department of Defense, 2011c, p. 1). In this context, the document outlines the interagency and intergovernmental functions of the NG JFHQ and also established the federal mission of the NG JFHQ-State during incident response. The Directive requires each State TAG to designate qualified DSCs and to ensure unity of effort between state and federal military forces. The document makes no other reference to dual status commanders.

Appendix F

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

UNIVERSITY OF DELAWARE

RESEARCH OFFICE

210 Hullihen Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

DATE: November 25, 2013

TO: Ryan Burke
FROM: University of Delaware IRB

STUDY TITLE: [534662-1] Contingency Dual Status Command: Maturing Missions in the Homeland through Process Improvement Modeling

SUBMISSION TYPE: New Project

ACTION: APPROVED
APPROVAL DATE: November 25, 2013
EXPIRATION DATE: November 24, 2014
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 6,7

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

- 1 -

Generated on IRBNet

INFORMED CONSENT FORM

**University of Delaware
Statement of Informed Consent**

Title of Project:
*Contingency Dual Status Command:
Maturing Missions in the Homeland through Process Improvement Modeling*

Principal Investigator(s):
Ryan Burke (doctoral researcher); Sue McNeil (dissertation advisor)

You are being asked to participate in a research study. This form tells you about the study including its *purpose*, *what you will do* if you decide to participate, and any *risks and benefits* of being in the study. Please read the information below and ask the research team questions about anything we have not made clear before you decide whether to participate. **Your participation is voluntary and you can refuse to participate or withdraw at anytime without penalty or loss of benefits to which you are otherwise entitled**. If you decide to participate, you will be asked to sign this form and a copy will be given to you to keep for your reference.

WHAT IS THE PURPOSE OF THIS STUDY?

This is a research study contracted to the above Principal Investigators at the University of Delaware and funded by the Department of Defense (DoD) through the U.S. Army War College Strategic Studies Institute (SSI). The purpose of this study is to learn more about the dual status command (DSC) arrangement used during defense support to civil authorities (DSCA) operations in support of the Hurricane Sandy response in New York. This project is also part of Ryan Burke's doctoral dissertation research. Data collected during the conduct of this research will be published in two SSI monographs and distributed to DoD strategy and policy personnel as appropriate. Additionally, certain data collected during this study will be used in the final version Ryan Burke's doctoral dissertation which will be published and maintained by the University of Delaware. This research will contribute policy and strategy-relevant knowledge to the developing conversation surrounding the unique command arrangements used during Hurricane Sandy DSCA operations. These improvements

will lead to increased efficiency and effectiveness and overall understanding of military response during future civil support emergencies using dual status command arrangement for no-notice/limited notice events.

WHY AM I BEING ASKED TO PARTICIPATE?

You are being asked to take part in this study because of your unique knowledge and experience with regard to DSCA and the history, policy, and operational conduct of dual status command. Your current position/capacity in an active DoD support role is a requirement of this research. Subjects can be excluded from participation in this study if he/she does not possess knowledge and/or experience related to military civil support operations, policy, history, or legality. The expected/anticipated number of participants in this study is twenty (*N*=20).

WHAT WILL YOU BE ASKED TO DO?

This research uses semi-structured and focus group interviews as a primary approach to data collection. The interviews and subsequent focus groups will be performed in-person to the extent made possible by scheduling and facility availability. All interviews and focus groups will be conducted in a pre-determined location chosen by the subject(s) in the subject's place of work; most likely an office setting with adequate lighting and ventilation. With the subject's permission, interviews will be audio recorded. *Interviews will last 15-30 minutes* and will consist of questions and discussion surrounding the subject's knowledge of specific process-related matters concerning dual status command and the military response to Hurricane Sandy in New York.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

This study is governed by strict ethics of confidentiality. Neither the researcher nor the University of Delaware, nor the U.S. Army War College will reveal the names of individual participants or organizations involved in this study. As this research involves face to face and telephone-based interviews performed in the subjects' work place, there is no additional risk to subject participation in these interviews. As such, the subject(s) assumes no physical, social, psychological, financial, or legal risk through participation in this study.

WHAT ARE THE POTENTIAL BENEFITS?

By providing strategic and policy recommendations, the resulting research will significantly benefit the U.S. military and state governments coordinating civil support response efforts following disasters and other civil emergencies. In addition, this research will benefit the general public by providing a mechanism for improving the

response efficiency and effectiveness of the military during national emergencies. Individual interview subjects may or may not directly benefit from taking part in this research. However, the knowledge gained from this study may contribute to our understanding of contingency dual status command and provide a tool that may result in direct benefits to those involved in the planning and execution of these operations.

HOW WILL CONFIDENTIALITY BE MAINTAINED?

We will make every effort to keep all research records that identify interview participants confidential to the extent permitted by law. In the event of any publication or presentation resulting from this research, no personally identifiable information (PII) will be shared. Final written products will use pseudonyms and other non-descriptive terminology to identify participants in this research (i.e. Subject 1, Expert 2, etc). All interview data will be encrypted using DoD approved Guardian Edge encryption software and stored on secure drives in a controlled-access laptop computer. The laptop is password and fingerprint protected.

In addition to password protection of individual files, participant names will be changed and coded into a format known only to the Principal Investigators. Digital audio files will be maintained on the secure laptop during interview sessions off campus. Interview digital audio files will be deleted immediately after transcription. All records will be stored and maintained via the above methods while the research is active (approximately 20 months). After completion of the project, all records will be stored and maintained by Prof. McNeil in a secure file location on a password protected computer hard drive. The files will be maintained for three years beyond the date of project completion, in accordance with 45 CFR 46.115(b) and University of Delaware policy. At the end of this three year retention period, all records pertaining to this project will be destroyed.

WHO ELSE WILL HAVE ACCESS TO THIS RESEARCH?

The University of Delaware Institutional Review Board and the U.S. Army War College Strategic Studies Institute may view participant-specific records, but the confidentiality of your records will be protected to the extent permitted by law.

WILL THERE BE ANY COSTS RELATED TO THE RESEARCH?

There are no costs associated with participation in this study.

WILL THERE BE ANY COMPENSATION FOR PARTICIPATION?

No monetary or other such form of financial compensation will be offered to participants of this study.

DO YOU HAVE TO TAKE PART IN THIS STUDY?

Taking part in this research study is entirely voluntary. You do not have to participate in this research. If you choose to take part, *you have the right to stop at any time*. If you decide not to participate or if you decide to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which you are otherwise entitled. Your refusal to participate will not influence current or future relationships with the University of Delaware and/or the U.S. Army War College Strategic Studies Institute.

WHO SHOULD YOU CALL IF YOU HAVE QUESTIONS OR CONCERNS?

If you have any questions about this study, please contact the Principal Investigator's dissertation advisor, Professor Sue McNeil, Ph.D. at 302-831-6578.
If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at 302-831-2137.
_____

Your signature below indicates that you are agreeing to take part in this research study. You have been informed about the study's purpose, procedures, possible risks and benefits. You have been given the opportunity to ask questions about the research and those questions have been answered. You will be given a copy of this consent form to keep.
By signing this consent form, you indicate that you voluntarily agree to participate in this study.

_____   _____
Signature of Participant   Date

_____
Printed Name of Participant

INTERVIEW GUIDE

Project Title:

Contingency Dual Status Command:
Maturing Missions in the Homeland through Process Improvement Modeling

Interview outline → topic areas for consideration and development of questions:

Employee Demographics	Dual Status Command (DSC)	Hurricane Sandy
Age	History	Role during the response
Gender	Policy	Assessment of DSC during
Education	Legality	Strengths and weaknesses
Years of experience	Past events	Procedural categories
Military service	Pre-planned vs. no-notice	Areas of improvement

Practitioner Interview – DSC during Hurricane Sandy

Background Information

1. Please tell me a little about (each of) your professional background(s) and experience.

    a. Education
    b. Specialized training
    c. Number of years working at this agency
    d. Number of years in other agencies (if applicable)

2. What is your current role in this organization? More specifically, what type of work are you involved in?

    a. Policy analysis/development
    b. Operational/Strategic planning
    c. Operational support
    d. Etc.

Dual Status Commanders and Hurricane Sandy

As you know, I am researching the use of dual status command during Hurricane Sandy. Since this event was the first and only time in history a DSC was used for a no-notice/limited-notice event, there is a relevant and timely opportunity to study and learn from it. Therefore, I would like to ask you some specific questions related to your knowledge and experience of DSC and its employment during Hurricane Sandy. Much of the content and document analysis I have done over the past year suggests that the DSC arrangement for Hurricane Sandy was validated as a successful alternative to more traditional parallel command and control arrangements used in the past. General Jacoby and others have suggested that the DSC arrangement as it was used for Hurricane Sandy was "successful" among other things. Given this background:

3. Do you agree or disagree with this assessment (that DSC was successful during Sandy)? Why?

    a. Probe: examples or specific instances to support assessment

4. Case study specific: Please take me through the events of Hurricane Sandy to the best of your recollection, focusing specifically on the processes used to activate and execute a successful DSC operation with limited to no notice. *Long answer anticipated with numerous opportunities for probing of additional information noted below*

    a. What did this process look like?
    b. What were the roles, responsibilities, requirements, etc. of the National Guard commanders, active duty commanders, and state emergency managers relative to DSC?
    c. What types of documents and/or agreements were required to activate the DSC?
    d. How did the National Guard and active duty military forces work together?
    e. Was there any instance of miscommunication or lack of coordination between National Guard and active duty commanders?
    f. Were there any specific instances of uncertainty or confusion?
    g. What information/capabilities/experience is lacking in the current DSC method of planning and execution based on our experience during Sandy?
    h. In your opinion, what could be improved?
    i. What worked well during the DSC-led operation in New York? Why?
    j. Were there any instances of improvisation or adaptation beyond known procedures that were effective and should be considered for inclusion in

future manuals? In other words, was there any instance of a "best practice" that should be noted?

    k. In your opinion, were there any process areas or points of focus in this operation that were critical to success?

5. Regarding planning and execution of DSC operations, what makes an event like Hurricane Sandy (no-notice/limited-notice) different than some of the pre-planned events using DSC arrangements in the past (political conventions, NSSE's, etc)?

    a. Is there a certain civil support scenario where a DSC arrangement is better suited than other C2 arrangements to respond effectively to the operational complexities present? Why?

Maturity Model Construction

Based on the information I gather during these interviews, I intend to develop a structured process model depicting the phases of DSC operations including operational best practices in the form of specific and generic goals and practices relative to each phase. In order to develop this model and ultimately help improve our knowledge and understanding of the DSC arrangement, I would like to ask you some additional questions regarding the mechanics of DSC operations using the recent events of Hurricane Sandy and the topics we just spoke about as a basis for this discussion.

6. In your opinion, what are the key requirements/points of emphasis/process areas that define a successful DSC operation? In other words, if I were to ask you to compose a list of critical tasks describing the DSC process in its entirety, what are some of the best practices from start to finish within a DSC operation? *Provide anecdotal example if required*

    a. Request elaboration on likely one-word responses (i.e. "planning" etc.)
    b. Can you tell me a little more about (answer)?

        i. What are the requirements for performing () well?
        ii. What are the specific goals of this area?
        iii. What are the specific practices (tasks that must be accomplished to achieve the goals) that map to the goals you just mentioned?
        iv. How is the efficiency/effectiveness of () measured?
        v. What are the indicators of success (i.e. how do you know when you have done well)?

7. Looking at DSC operations from a macro perspective beyond the process areas we just discussed, are there any generic practices associated with these operations? In

other words, is there a series of capabilities or requirements that must be present in an operational context to ensure the successful planning, management, and execution of DSC?

a. Training of personnel
b. Certifications on hand/accessible
c. Pre-scripted mission assignments
d. Policies/Procedures in place
e. Etc.

At this point: Review the discussion points thus far and reiterate process areas, goals, and practices identified

8. Based on the information we just discussed and with specific consideration given to the process areas that encompass DSC operations, I would like to rank this information into five levels of operational maturity, 1 being the lowest; 5 the highest. What process areas (along with the noted goals and practices) from the list should be placed in level 1? (repeat for all levels 1-5).

a. Where would you place process area 1? Etc.
b. Using the process areas we just identified, what are the most basic processes listed? (level 1)
c. In order to move to the next level of process maturity, what process areas from the list follow those noted in level 1?
d. Etc.

9. Now that we have populated the initial maturity levels of DSC operations, I would like to label each level with a single descriptive word representing the content (i.e. ad hoc, initial, managed, defined, repeated, optimized).

a. Provide examples of maturity level descriptions to subjects if questioned ("For instance…")
b. We determined the maturity level 1 contains PA 1, 2, 3, etc. What term best describes these operationally specific processes? Use pre-established list of words as "primers" to elicit discussion

At this point: show the participant(s) the constructed and populated initial model

10. Is there anything that you would like to change in this model at this time?

11. Thank you for your participation in this research study.

Appendix I

SUBJECT RECRUITMENT LETTER

Google apps
@UDel.edu

Ryan Burke <rpburke@udel.edu>

Request for Participation in Ph.D. Research

Ryan Burke <rpburke@udel.edu>   Mon, Nov 4, 2013 at 11:29 AM
Draft

To Whom it May Concern,

My name is Ryan Burke. I am a doctoral student at the University of Delaware (UD) pursuing a Doctor of Philosophy in the Disaster Science and Management program through the Disaster Research Center (DRC). I am currently conducting my dissertation research and respectfully request your cooperation and assistance. I have developed an interview questionnaire to collect information regarding the processes associated with the Contingency Dual Status Commander (DSC) arrangement during no-notice/limited notice civil support events involving Defense Support of Civil Authorities (DSCA).

I have been awarded a contract through the U.S. Army War College Strategic Studies Institute (SSI) for funding and endorsement of this research effort. Per the SSI contract, I am required to conduct in-depth research in order to make strategy and policy recommendations for the dual status command arrangement, my chosen area of study. The events of Hurricane Sandy coupled with my prior service as a Marine Corps officer motivated me to pursue my doctoral research in this subject. I have spent the past year examining the history, development, progression, and future direction of the DSC arrangement and its implications on national security and homeland defense strategy and policy. My research specifically focuses on improving DSC operations by examining the critical processes involved in each phase of a no-notice/limited notice event. As such, I am contacting you because of your experience and subject matter expertise in dual status command policy, planning, and execution. I am particularly interested in your knowledge of Hurricane Sandy and the associated military response in New York.

I would like to ask you questions (attached) related to this subject in an interview at your convenience. I prefer to conduct these interviews face-to-face when possible. The attached questions provide a general structure for the content of the discussion with the anticipation of further discussions beyond the guide. If a face-to-face interview is not possible, I would like to conduct a phone interview instead at a day and time of your choosing.

I am committed to maintaining privacy and confidentiality. Per my research requirements, your name and/or any other personally identifiable information will not appear in the final SSI research monographs or my doctoral dissertation. I have attached a detailed Informed Consent Form for your review that will help answer any additional questions related to the confidentiality of your participation in this research. Prior to conducting an interview, I will request your signature on this form to acknowledge your understanding of the provisions of this study.

This message is being sent to all Defense Department employees and contractors involved in the DSC conversation for whom I have contact information. Since this research uses interviews as the main source of data, I will appreciate any additional referrals to others who may have valuable experience in this subject matter. If you know of additional experts that can contribute to this study, with consent, please send me the appropriate contact information so that I may reach out to each individual to request assistance.

Thank you in advance for your time and consideration. It is my hope that this research will contribute to your ongoing efforts to mature the dual status command construct prior to the next civil support event requiring military support. If you have any further questions, please do not hesitate to contact me via email at rpburke@udel.edu or phone at 609-304-2818.

Very Respectfully,

Ryan Burke

Appendix J

RESEARCH DESIGN SUPPLEMENTAL INFORMATION

This appendix includes information intended to supplement the discussion in Chapter 3 regarding the research design. Here, I discuss the specific details pertaining to the interview sample selection criteria as well as the details relating to the interview subject recruitment process.

J.1   Sampling Criteria and Selection

Beyond the narrowly defined topic of dual status commanders, the research emphasis on Hurricane Sandy further limited the pool of relevant subject matter experts. Given the limitations in sampling criteria, I used purposeful sampling techniques for interview subject selection. According to Patton (2002), purposeful sampling involves the purposeful selection of data sources using specific criteria "to permit inquiry into and understanding of a phenomenon in depth" (p. 46). Using a purposive sample to inform the research helped to "ensure that certain types of individuals or persons displaying certain attributes (were) included in the study" (Berg and Lune, 2012, p. 52). The selection criterion for the sample, therefore, was specific to individuals directly involved in DSC operational planning and execution.

Since Hurricane Sandy was the only historical example of no-notice/limited-notice DSC-led operation at the time and there are limited personnel with relevant experience in this area, a homogenous sample of DSC experienced personnel was selected for in-depth study. Using narrowly defined sampling selection criteria helped me focus my data collection efforts on specific perceptions and interpretations

common to this selected population of DSC experienced personnel and their assessments of process inefficiencies or limitations during these operations.

In order to select appropriate subjects for this study, I initially limited my sample criterion to personnel who had served as a DSC in past operations; or given the very small number of people meeting this requirement, those who served in a DSC support role during past military operations. I generally defined "support role" as a member of a military or civilian staff involved in the planning and execution of a dual status commander-led support operation. These support roles included personnel, both military and civilian, who served in an area under command authority of a DSC and who participated in or executed command decisions originating from a DSC. This initial sample criterion limited the available subjects for interviews but still provided a defined basis to begin the process.

In addition to the defined sampling criteria, I was also able to maximize the use of snowball sampling throughout the course of the data collection. Since there was no initial expectation that snowball referrals would meet the initial sampling criteria, I chose to expand the snowball sampling criteria to include personnel with experience in a number of DSC-relevant areas including law, policy, and operations. Expanding the snowball sampling criteria to a broader scope helped me to identify and interview more subjects than initially expected. Aside from the specific criteria noted, selection and recruitment of interview subjects was indiscriminant of other factors such as age, gender, race, or ethnicity. Given the limited number of subject matter experts with relevant knowledge and experience to the focus of this study, my targeted sample size for this study was twenty (N=20). At the conclusion of this research, I successfully

completed 20 interviews. After defining the initial sampling criteria required for this research, I began the process of subject recruitment.

J.2   Subject Recruitment

My first recruitment attempt was an email sent to a Defense Press Officer in the Office of the Secretary of Defense who had been assigned as the DoD public affairs officer for the Sandy response. I sent this message on March 6, 2013. A former colleague who works in the same press office within the Pentagon referred me to this contact. By mid-May 2013, I had been referred to contacts in the Office of the Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs (ASD/HD/ASA). This office is the primary component of the Department of Defense dealing directly with DSCA operations and dual status commander law, policy, and other material relevant to this research. I established contact and exchanged regular emails with four representatives of HD/ASA between May 2013 and January 2014 as preliminary research prior to scheduling interviews. As personnel in HD/ASA represented a distinct policy-specific perspective on the DSC concept, I also determined that I needed to collect data from operationally focused subjects as well.

Through a series of referrals and additional personal contacts, I was fortunate to establish a connection with several employees of U.S. NORTHCOM in Colorado Springs. These connections began in September 2013 through initial email exchanges and have continued throughout the research effort. In addition to NORTHCOM and HD/ASA subject recruitment, I was referred through personal connections to the U.S. Coast Guard's (USCG) Atlantic Strike Team (AST) in Fort Dix, NJ. As a participating element of the Sandy response, the USCG AST provided an external (non-DoD) perspective to the research that will be discussed in subsequent sections. Further,

through my past military experience, I was also able to establish connections with several Marines and civilian employees from the I Marine Expeditionary Force (MEF) in Camp Pendleton, CA who were involved in peripheral aspects of the response to Hurricane Sandy and able to provide relevant information specific to the legal issues associated with DSC operations. Finally, through existing personal contacts elsewhere, I was also able to establish a connection with several flag officers of the U.S. Army and U.S. Army National Guard who have unique and relevant knowledge of DSC operations, including command experience during Hurricane Sandy. These recruiting efforts, largely facilitated through personal networks and contacts, generated excellent contacts and eventual sources of information. In covering the relevant policy, operations, and legal perspective of the dual status commander concept and its application during Hurricane Sandy, I was confident that my recruiting efforts were effective to begin data collection and analysis.

Appendix K

DATA COLLECTION SUPPLEMENTAL INFORMATION

This appendix includes information intended to supplement the discussion in Chapter 3 regarding the data collection process. Here, I discuss the specific details pertaining to my data collection efforts including the mechanics and logistics of the semi-structured interviews, focus groups, and non-participant observation of a military exercise.

K.1   Document Review

While many documents used for later analysis were provided to me through contacts within various parts of DoD, I also acquired documents through electronic databases via the University of Delaware library and similar sources. Beyond providing useful historical information to help shape the research, my document collection efforts were also an unobtrusive method of data collection.

Since this research involves the largest government agency, the DoD, there is an exhaustive amount of rich documentary data available for collection and analysis that is easily accessed through publicly available means such as the Internet. In addition to the benefit of being an unobtrusive and easily performed method of data collection, documents "prove valuable not only because of what can be learned directly from them but also as stimulus for paths of inquiry that can be pursued only through direct observation and interviewing" (Patton, 2002, p. 294).

K.2 Interviews

The following subsections discuss the interviews I conducted between January – May 2014.

K.2.1 Marine Corps Base Camp Pendleton

My first round of face-to-face interviews occurred from January 7-10, 2014 on Marine Corps Base Camp Pendleton, CA. Following a series of email and phone discussions with contacts in Camp Pendleton, I was invited to the base to perform interviews as part of my research effort. Prior to my arrival in California, I sent a detailed email with copies of the interview guide, Institutional Review Board (IRB) approval, Informed Consent form, and other relevant documents to a former colleague and my primary point of contact in Camp Pendleton – a Marine Corps colonel serving as the I MEF Staff Judge Advocate. The documents were disseminated among the intended interviewees prior to my arrival.

During my time at the Marine Corps Base, I conducted nine individual interviews with various members of the I MEF with relevant knowledge on general DSCA operations, the legal aspects of DSCA, the dual status commander arrangement, and Hurricane Sandy.[73] Interviewees included one civilian contractor, two senior staff non-commissioned officers, one company grade officer, and five field grade officers (2 majors; 3 colonels). Each interviewee was asked to sign the statement of Informed Consent prior to starting the interview. After providing a brief description

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[73] Two of the nine interviews with I MEF Marines were conducted via phone at separate times due to scheduling conflicts during my visit. One of the two phone interviews was audio recorded and transcribed as the interview subject was not on base or in a restricted access area at the time of the interview. The other interview was not recorded for similar reasons as noted above.

of the research and answering initial questions, I used the interview guide to begin the interview. Using the guide as a basis ensured a degree of consistency among the interviews. However, given the semi-structured nature of the interviews, there were times during each session where the conversation departed from the specific questions contained in the interview guide. While each interview was conducted in-person, for operational security reasons, I was not permitted to bring any electronic devices into either facility where the interviews occurred. As a result of this unexpected restriction, I was required to leave my recording devices in a secure area outside of the interview locations. Fortunately, I was able to take hand written notes throughout the course of the interviews. At the conclusion of each day, I wrote extensive notes and memos summarizing my conversations for later analysis.

K.2.2 U.S. Northern Command

The next interview occurred via phone on January 21, 2014. The interview subject was a civilian employee in the Domestic Operations branch of U.S. NORTHCOM in Colorado Springs whom I had previously recruited to participate via personal connections. This interview subject has been involved in every dual status commander operation since its inception in 2004 including his service as the Chief of Staff to the dual status commander during Hurricane Sandy in New York. He has unique and unparalleled knowledge of the operational aspects of DSC-led missions. With verbal permission granted and a copy of the signed Informed Consent form in hand, I was able to record this interview for later transcription. I again used the interview guide as a tool to progress the conversation. Similar to my previous experience in California, there were several occasions when the conversation departed slightly from the specific topics contained in the interview guide. Since the discussion

remained focused on the dual status commander arrangement and the response to
Hurricane Sandy, I felt this was still valuable data to collect. In addition to the audio
recording, I took several pages of hand written notes during the interview. At the
conclusion of the interview, I spent several more minutes writing addition notes and
memos to myself to assist with the eventual data analysis portion of the research

K.2.3 U.S. Coast Guard – Atlantic Strike Team

My third interview was held in-person with a senior officer of the USCG
Atlantic Strike Team (AST) in Fort Dix, NJ. After an initial referral through a personal
contact, I spoke with AST personnel who agreed to participate in the research. I was
invited to Fort Dix on January 23, 2014. Upon arrival and greeting, I was given a tour
of the AST facility and had an opportunity to meet with several AST personnel who
shared their experiences during the response to Hurricane Sandy. While the USCG is
part of the Department of Homeland Security (DHS), they regularly participate in
domestic disaster response operations due to their unique maritime capabilities. The
AST played a significant role in environmental clean up during the Sandy response. In
addition, some senior officers interacted with DoD elements and were able to provide
valuable and objective assessments of the military response to Sandy in New York.

As with the previous face-to-face interviews, I sent a copy of the interview
guide, IRB approval, and consent form to the AST personnel prior to my arrival to
Fort Dix. While I interviewed other AST personnel on an informational (no IRB)
basis, I conducted a formal interview with a senior AST officer who directly
participated in the response to Hurricane Sandy in New York. After obtaining a
signature, I requested and was given permission to audio record the interview. I used
the same process previously described using the interview guide as a basis for the

interview questions and discussion. I again took several pages of hand written notes during the conversation that would eventually serve as an additional piece of data for analysis.

K.2.4   Office of the Secretary of Defense (HD/ASA)

The fourth set of individual interviews occurred in the Pentagon on February 6, 2014 with members of the Office of the Assistant Secretary of Defense for Homeland Defense and America's Security Affairs (HD/ASA). Having established contact with HD/ASA personnel nearly a year prior, I was able to schedule interviews with this office without difficulty. Several individuals indicated their interest in participating in this research. As such, I was invited to the Pentagon to conduct interviews during the first week of February. Four interviewees from HD/ASA participated in the discussions on February 6 including two civilian contractors and two civilian government employees. Each interview subject had direct knowledge and experience with the dual status commander initiative and its use during Hurricane Sandy. One of the interview subjects is also the author of several dual status commander policy and guidance documents, as well as the aforementioned Joint Action Plan for Developing Unity of Effort.

After being escorted into the Pentagon and to HD/ASA, I was required to place all electronic devices into a secure lock box near the office entry way. Like my experience in Camp Pendleton, this again meant that I would not be able to audio record the interviews. As with my previous interviews, I sent copies of the pertinent documents to the HD/ASA staff prior to my arrival. After an initial discussion of the purpose and intent of the research, I obtained signatures from the subjects and commenced the interview. The interview guide again proved valuable as it allowed me

to maintain a progressive conversation while allowing the flexibility to depart from the guide as needed for further inquiry into discussion topics. I took several pages of notes throughout the various conversations that would be used for later analysis.

K.2.5 Joint Task Force Sandy

My fifth substantive interview occurred via phone on February 20, 2014 with a flag officer of the Army National Guard who served in a command billet with Joint Task Force Sandy during the response to Hurricane Sandy in New York. I recruited this subject through another personal referral. After a series of email discussions, the subject agreed to participate in a phone interview to discuss the response to Hurricane Sandy under the dual status commander arrangement. I sent the required research documents to the subject prior to our phone interview and obtained the necessary signatures on the consent form. While the subject signed the consent form indicating that he understood the purpose of the research, he did not give consent for the interview to be recorded.

I began the phone interview with a brief description of the research and the work I had done up to that point. I used the interview guide as a tool to enhance the conversation only; not as a script. Given the subject's unique personal experience with the Sandy response, he was able to provide extremely valuable first-hand knowledge of the events as they occurred. As with each previous interview, I wrote multiple pages of hand written notes to be used as data for my eventual analysis.

K.2.6 Joint Task Force Civil Support

The next interview in the data collection effort occurred via phone on March 4, 2014 with a flag officer assigned to Joint Task Force Civil Support in Norfolk, VA.

This particular general officer was temporarily assigned to serve in a command billet in Fort Dix, NJ during the multi-state response to Hurricane Sandy. With the help of a referral from HD/ASA, I recruited this subject through a series of emails and phone calls with his executive officer. Again, I provided copies of the research documents prior to the discussion and obtained the necessary signatures.

With verbal and written consent provided by the subject, I audio recorded this interview for later transcription. After offering an initial discussion of the research and progress up to that point, I began the interview using the guide as a basis for the discussion. Again, this subject's unique and direct first-hand experience as a commander during the Sandy response provided extremely valuable data for future analysis. While I was able to record this conversation, I also took several more pages of hand written notes to ensure full coverage of the salient points in the conversation.

K.2.7   Joint Task Force Katrina

In a fortunate series of conversations regarding this research effort, I was referred to another general officer with unique knowledge of DSCA operations from his experience as a commander during the 2005 response to Hurricane Katrina. As noted in the literature review, the response to Katrina was plagued by coordination failures between state-controlled National Guard forces and federal military forces operating in the same areas. Given his experience in Katrina, this interview subject was willing to discuss the response to Hurricane Sandy under the dual status commander arrangement from an objective and external perspective. The interview was scheduled through the General's executive assistant and conducted via Skype video chat also on March 4, 2014.

I again sent the required research documents to the executive assistant prior to the interview. For an unknown reason, the subject acknowledged the consent form during the interview but did not sign it until several days after. I conducted the interview from my advisor's office on the University of Delaware campus. Originally, I intended to use my personal laptop to both connect to Skype and audio record the conversation simultaneously. Unforeseen technical issues required that I use a separate computer. While I did record the conversation to an audio file using my personal computer as planned, because the conversation occurred on a separate device the audio file was nearly inaudible and could not be transcribed. I did, however, take hand written notes throughout the entirety of the conversation in order to capture the relevant points for later analysis.

K.2.8   HD/ASA – Second Visit

More than a month after my initial visit to the Pentagon, I determined that I needed additional data for the eventual development of the DSC2M2. In my previous interviews in February, I collected valuable data regarding the events of Hurricane Sandy that would contribute significantly to the development of my case study. Due to time constraints and other issues during the interviews, however, I did not feel as though I fully covered the maturity model aspect of my proposed research. Therefore, I contacted one of my past interview subjects with whom I discussed the maturity model concept in some detail. During our February conversation, this individual provided some basic insight into the development of such a model for dual status commander operations. As such, I requested a second on-site interview with him in order to more fully discuss the maturity model idea and development.

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After several email and phone discussions, I returned to the Pentagon on March 11, 2014 for a face-to-face interview to discuss the maturity model idea with the previous interview subject. For this interview, I chose to concentrate the discussion on the second section of the interview guide outlining the maturity model topics and questions. The interview lasted more than 90 minutes as we discussed several aspects of the conceptual DSC2M2 including design, content, structure, and utility. Because this interview occurred in the Pentagon, I was again unable to audio record the conversation. Instead, I took both hand written and computer-based notes throughout the course of the discussion.

K.2.9   HD/ASA – Third Visit

Two months after completing my second Pentagon interview, I had an additional opportunity to interview a Senior Executive Service (SES) employee in HD/ASA. As a SES level employee in DoD with decision making authority, this interview subject provided a senior leader perspective to both the dual status commander topic as well as the events of Hurricane Sandy. With this unique opportunity, I returned to the Pentagon for a third time on May 29, 2014 to conduct the interview face-to-face. Having met the interviewee on each of the previous two visits to the Pentagon, he was well aware of my research and intent. I provided a copy of the informed consent form and other relevant documents for review which he reviewed and signed.

Again, I was required to place my electronic devices into the secure lock box outside of the office prior to entry. As such, I was not able to audio record this interview. However, as I had done with each previous interview, I took extensive hand written notes throughout the conversation. I used the interview guide as a basis for my

questions while allowing the SES subject to deviate from the guide and discuss topics as needed that were relevant to the overall research.

K.2.10 Operation Vigilant Guard

As noted previously, I was presented with a unique opportunity to attend and observe a simulated dual status commander-led military response exercise. Operation Vigilant Guard took place during the week of May 12-16, 2014 in Fort Indiantown Gap, PA. As an invited guest observer, I attended this exercise on May 13, 2014 in order to observe the civil-military interactions and operational decision making activities in a dual status commander-led joint task force environment. Throughout the day, I spoke with numerous individual representing a variety of agencies and organizations relevant to the larger research focus. While I did not conduct any formal interviews during this time, I did speak with several people informally who provided some excellent perspective for me to incorporate into my final analysis.

K.3   Focus Groups

The next subsections discuss the details of each of the two focus groups I conducted as part of this research effort. The first focus group was held in the Pentagon and emphasized policy and legal matters related to the DSC2M2. The second focus group was held in Colorado Springs with members of U.S. NORTHCOM and emphasized operational matters related to the DSC2M2. Each is discussed below.

K.3.1   Focus Group 1 – Policy Emphasis

As noted earlier, this focus group was held in the Pentagon with representatives from HD/ASA. I began the focus group by revisiting the purpose and

intent of the research. Given that the participants were previous interviewees, each was familiar with the project. After distributing printed copies of the DSC2M2, I offered a brief explanation of the model and its intended purpose and utility. I then explained the purpose of the focus group was to evaluate the model for accuracy and solicit suggestions for revision. For the next 60 minutes, the focus group discussed the model and its various components, often offering critical but useful comments and suggestions. We began systematically assessing the model from maturity level 1 and its components through to level 5. Participants wrote notes on their copies of the model throughout the discussion while I took hand written notes and memos to better direct future revisions. By providing an open forum for experts to discuss their perspectives of the model, I could ensure a consensus design at the end of the first focus group session. By the end of this first session, I obtained several recommendations for changes including addition and deletion of material throughout the structure of the model. The focus group participants also offered to further assess the model and offer additional suggestions via email correspondence at a later date. By the end of this phase of the research, I had a refined model representing the insight and perspectives of experts with regard to the placement, description, and sequence of all terminology and design within the model.

K.3.2 Focus Group 2 – Operational Emphasis

This focus group was held in Colorado Springs with representatives from U.S. NORTHCOM. The second focus group was held from 11:00am – 12:30pm in a restaurant in Colorado Springs, CO just outside of the North Gate of Peterson Air Force Base. We chose to meet at a restaurant to allow the participants an opportunity to eat lunch and limit the interruption with their regular work schedules. We sat at a

round table in a room in the rear of the restaurant that allowed for uninterrupted discussion. As with the previous session, I began this focus group by revisiting the purpose and intent of the research. Similar to my experience in the Pentagon, the participants were either previous interviewees or were familiar with my research through discussions with previous interviewees in their office. After distributing printed copies of the DSC2M2, I again offered a brief explanation of the model and its intended purpose and utility. I explained that the purpose of the focus group was to evaluate the model for accuracy and solicit suggestions for revision. I then obtained informed consent signatures from those participants I had not previously interviewed for this research and then began the discussions.

For the next 90 minutes, the focus group discussed the model and its various components, offering their assessment of the model's architecture and potential utility during a real-world operational scenario. We again approached the model somewhat systematically by assessing the model from maturity level 1 and its components through to level 5. Participants wrote notes on their copies of the model throughout the discussion while I took more hand written notes and memos to better direct future revisions. By the end of this session, I obtained several additional recommendations for changes to the model; some similar to the first focus group, others quite different. Again, the focus group participants offered to further assess the model and provide additional suggestions via email correspondence at a later date. Less than two weeks after my travel to Colorado, I received an email from one of the participants that included several more suggested revisions to the original version of the model.

At the conclusion of the second focus group, I had a second set of distinctly different perspectives to compare to the first focus group. These two perspectives

provided me with enough data to eventually create two well-defined, rigorously developed model structures complete with the required content and data necessary to ensure compliance with the standards of research expected of a project of this scope and significance. The information obtained from the document review, interviews, non-participant observations, and focus groups provided a wealth of data to be analyzed and integrated into the final research products.

Appendix L

DATA ANALYSIS SUPPLEMENTAL INFORMATION

This appendix includes information intended to supplement the discussion in Chapter 3 regarding the data analysis process. Here, I discuss the specific details pertaining to my data analysis efforts including the mechanics of the open and axial coding processes.

L.1   Open Coding Process Explained

To develop my initial codes, I used content analysis techniques on the collected data. As a form of qualitative data analysis, content analysis is a "careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meanings" (Berg and Lune, 2012, p. 349). Content analysis also involves "coding, categorizing, classifying, and labeling the primary patterns of data" (Patton, 2002, p. 463). Interpreting and making sense of the complexities in the data is, according to Patton (2002), a challenge when performing content analysis. So, in an attempt to try to "make sense" of the data, I first sorted each document, transcript or notes page into categorical folders on my computer or in a hard copy file to try and reduce the data into workable groups for a more organized and systematic content analysis. Using an interpretative orientation to the data, I then began the process of open coding each document.

The principal intent of open coding in qualitative research is to promote inquiry and interpretation of the data by analyzing what is or is not significant (Berg

and Lune, 2012; Patton, 2002). To do this, researchers generally approach qualitative data systematically and with a defined unit or level of analysis for assessment (words, sentences, paragraphs, etc) (Berg and Lune, 2012). My original intent was to perform open coding with the aid of ATLAS Ti, a software package designed to assist researchers in performing qualitative data analysis. I downloaded a trial version of the software and after a brief period of familiarization, I began to open code my data files using the software. According to Berg and Lune (2012), open coding is an unrestricted coding approach where the researcher "carefully and minutely reads the document line by line and word by word to determine the concepts and categories that fit the data" (p. 369). To comply with this standard, I initially used ATLAS to assist in coding every word, sentence, line, and paragraph with coded labels. After coding multiple data files using this approach over a period of several days, I paused to assess the results and determine whether I was building codes relevant to my research questions. While the process I used was rigorous and thorough, I determined my level of coding analysis was too minute for the broader concepts I was attempting to assess with this research. Coding each word, sentence, and paragraph using ATLAS was not only very time consuming, it often resulted in irrelevant codes. I briefly discussed this with my committee chair to determine a more suitable approach to coding that would yield more direct, relevant codes. We determined that using a more direct analytical approach to the data would be appropriate. Rather than coding each word, phrase, or paragraph, we agreed that I would analyze the data and code only the material deemed relevant to building the Sandy case study and associated dual status commander capability maturity model.

While I attempted to use the "textbook" approach to coding to begin this effort, it was not appropriate for this particular research effort. Given the relative flexibility in qualitative coding, I decided to abandon the ATLAS Ti software for a more familiar approach to analysis using the review and comment function in Microsoft Word wherever possible. With this approach, I was able to highlight relevant material in the text body using the "New Comment" function in Word while placing the codes in the reviewing pane as numbered comments. I proceeded to analyze each Word-compatible document using this function. For non-Word documents such as PowerPoint files or Portable Data Files (PDF), I copied and pasted the text from these files into Word documents to facilitate further coding using the technique noted. For documents unable to be converted to Word (such as protected PDFs), I used the highlight and comment tool where possible to generate and document codes within the files. For all other electronic files, I took hand written notes and wrote memos to document the codes pertaining to these files. For all remaining hand-written data sources such as interview notes and observation notes, I analyzed each page and wrote codes and memos within the notes themselves. Because my approach to open coding was interpretative and inductive, I generated numerous codes among the data that had to be reduced and deductively categorized for further analysis to fit the intended research.

L.2 Axial Coding Process Explained

To perform axial coding of the data focused on building a case study and populating the maturity model, I developed a deductive coding scheme for each of the intended research products. For the case study and associated recommendations, I was focused on coding around lessons learned with a principle emphasis on successes and failures. Therefore, I used these areas to categorically code the data for eventual

inclusion in the case study findings and resulting recommendations. For the development of the maturity model, I coded material based on the existing model framework noted in Chapter 6.

To begin this process, I first built separate Word files for each of the intended code frames or categories. I created two files from the original documents for data extraction and consolidation: one for lessons learned from the Sandy response; and a second file for input of best practices or essential task considerations. Using a deductive approach supplemented by my own experience and logic to inform the proper code placement, I proceeded to extract coded material from the original data and manually input it into the consolidated topic files. To build the lessons learned code frames, I established individual categories relative to the source of the data. For instance, I analyzed numerous military after action reports, many of which grouped their recommendations by military unit or similar sub-categories. Within my lessons learned code frames, I created similar unit-specific categories for consolidation of the coded data. Within each unit-specific category, I created and labeled individual sub-categories relative to the topic of the coded data (e.g. command structure, communications, etc). The resulting code frames provided the substance for analysis that led to the development of the lessons learned discussion contained in Chapter 4. Beyond this, I was also able to use the coded material to develop a wire diagram that visually represents the links between my interview and after action report data sources and their associated recommendations noted in Chapter 7 (Figure 29). At the conclusion of this coding and analysis process, I performed a similar extraction and consolidation process for the development of my best practices code frames.
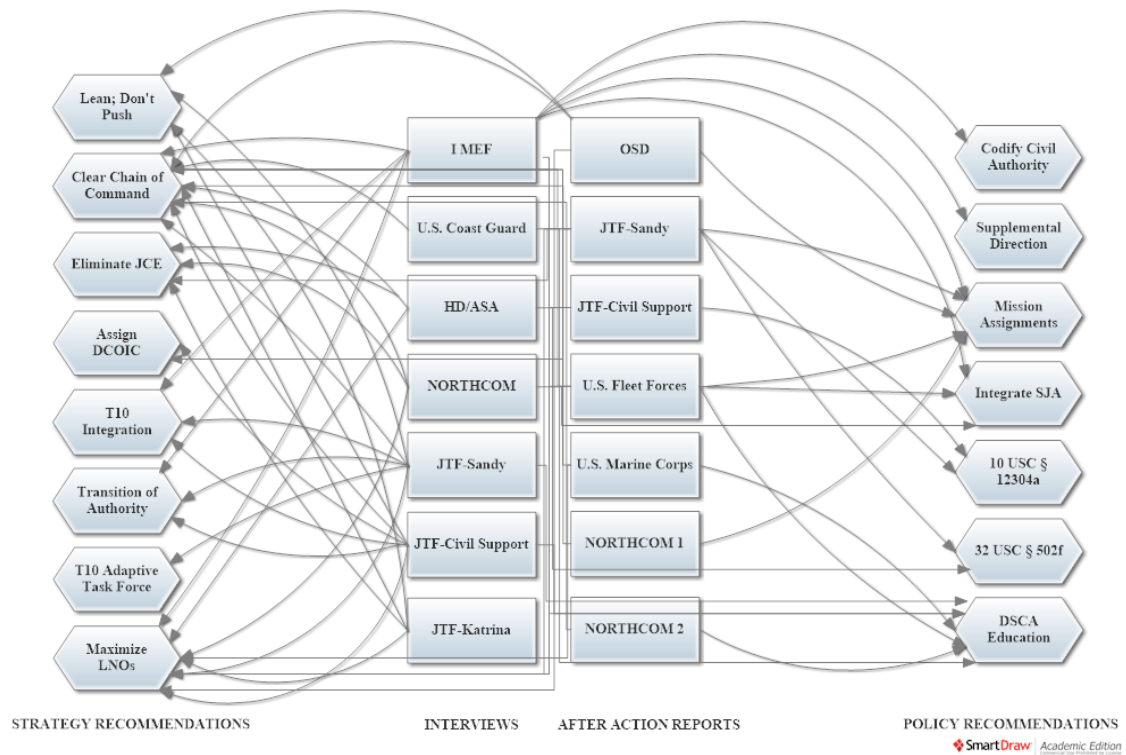
Figure 29: Data and Recommendation Links

At the conclusion of this process, I had generated a lessons learned code frame document with 32 pages of continuous text and over 10,000 words. Within this file, I identified 14 broad, unit-based code categories or families. Within these 14 categories, I generated 167 codes specific to successes, failures, issues, or recommendations (depending on the assigned code). While this was a comprehensive document with extensive data, I needed to further code and consolidate the material into a usable document to guide the development of the Sandy case study and inform the findings. To do this, I used the color highlight function in Word to assign color-coded categories to each of the codes. I highlighted each instance of "success" green; "failure" red; "issue" yellow; "recommendations" blue. After color coding the data

within this code frame document, I extracted the material and consolidated it into a new Word document, organizing and further grouping the material by color to allow for easier assessment of the grouped data. This data file formed the basis of the recommendations later in this dissertation.

Using the same process described above, I analyzed the coded data and generated a consolidated list of best practices or essential tasks to help with the creation and development of the DSC2M2. At the conclusion of this process, I had generated 115 tasks or practices extracted from the original coded data sources. I used a similar color coding process to further group these tasks into categories relative to the eventual maturity model design. At the conclusion of this portion of the analysis, I was able to reduce the original 115 tasks to 92 tasks as a result of limited data redundancy. These 92 tasks provided the substance for the first version of the DSC2M2. This coded data document was also the primary data source used for the population of each subsequent version of the maturity model following review by the focus groups and integration of suggested revisions.

Appendix M

DSC2M2 VARIANTS

The DSC2M2 presented in Chapter 6 is one of three models developed based on interviews, observations, document review and focus groups. This appendix documents each of the three variants of the model that were developed for this dissertation. They are described as the initial DSC2M2, the HD/ASA version and the NORTHCOM version. The following sections document these variants.

M.1 Initial DSC2M2

The initial version of the DSC2M2 was developed using the data collected from the semi-structured interviews, non-participant observation, and document review. This version served as the base model for presentation to each of the two focus groups in NORTHCOM and HD/ASA, respectively. Table 19 through Table 23 show maturity levels 1 through 5 and Table 24 shows the capability levels.

Table 19: Maturity Level 1: Initial DSC2M2

Maturity Level	Level 1 - Reactive		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Reactive maturity level relevant to J1, J2, doctrine, training, personnel, & leadership considerations	Generate a list of task considerations at the Reactive maturity level relevant to J3, J4, J5, Organization, Materiel, & Facilities considerations	Generate a list of task considerations at the Reactive maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, & Liaison considerations

Table 19 continued

Task Considerations	1ITC1: Obtain SECDEF approval for DSC activation	1OTC1: Pre-deploy T10 deputies to areas expecting DSC activation	1CTC1: Deploy DSC JTF Liaison Officers (LNOs) to state EOC, JFHQ
	1ITC2: Assign Anti-Terrorism/Force Protection (ATFP) role to member of DSC JTF J2 staff	1OTC2: Request a Restricted Operating Zone (ROZ) from the FAA (if necessary based on situation)	1CTC2: Establish communications link between LNOs / Emergency Preparedness Liaison Officers (EPLOs) and the Defense Coordinating Officer
	1ITC3: NORTHCOM pre-deploys Joint Support Force-Staff Element (JSF-SE) IOT facilitate quicker staff augmentation and ensure J1-8 manning	1OTC3: Initiate NG presence patrols in known affected areas to generate initial situational awareness	1CTC3: Deploy DSC JTF LNO to FEMA; request FEMA LNO for DSC JTF
	1ITC4: Complete initial Incident Awareness Assessment (IAA)	1OTC4: Conduct Search and Rescue (SAR) operations for first 72 hours following establishment of JTF	1CTC4: Establish wired/wireless internet capability in JOC/JTF HQ IOT facilitate required communications
	1ITC5: Issue Prepare to Deploy Orders (PTDO) for anticipated T10 forces	1OTC5: Rotate (2) T10 personnel on 12 hour shifts in Current Operations to ensure 24 hour coverage and continuity	1CTC5: All JTF personnel deploy w/ and use cell phones until sustainable communications can be established

Table 19 continued

	1ITC6: Generate and deliver Operational Security Brief (OPSEC) to DSC daily	1OTC6: Preposition T10 forces at nearby federal installations for future activation as needed	
		1OTC7: Identify Base Support Installations (BSI) w/in or near JTF JOA	
		1OTC8: Develop, publish, and disseminate a DSC JTF mission statement and commander's intent	

Table 20: Maturity Level 2: Initial DSC2M2

Maturity Level	Level 2 - Convergent		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Convergent maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Convergent maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Convergent maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations

Table 20 continued

	2ITC1: Standardize and define Verbal Orders of the Commander (VOCO) process and requirements	2OTC1: Locate and establish communication with the DCO	2CTC1: All subordinate JTF Task Forces (TF) in JOA deploy LNO to DSC JTF
Task Considerations	2ITC2: Employ a Chief of Staff for both T10 and T32/SAD forces	2OTC2: Generate and publish a command and control wire diagram in the JOC (include names/contact info of all key personnel w/ in C2 wires)	2CTC2: Generate and publish a document containing relevant legal considerations (decision flow chart, etc) for joint force actions pertaining to Posse Comitatus, Insurrection Act, Stafford Act, Economy Act, etc.
	2ITC3: Incorporate METOC analysis in daily Commander's Update Brief (CUB)	2OSP: 3: Generate and publish list of EMAC sourcing solution capabilities	2CTC3: Designate a T10 deputy as T32 LNO; designate T32 deputy as T10 LNO
	2ITC4: Brief all newly arriving personnel on general situation	2OTC4: Select and operate a single location for JRSOI	2CTC4: Build and maintain a requirements review board in JOC

Table 20 continued

	2ITC5: Develop and publish Commander's Critical Information Reporting (CCIR) requirements	2OTC5: Assess and disseminate operational boundaries for DSCA w/in JTF JOA (consider state borders for each DSC	2CTC5: Develop PACE (Primary, Alternative, Contingency, Emergency) plans for critical services, systems, capabilities and circulate among JTF staff and commanders
		2OTC6: Identify and converge on a single NG base/facility IOT stand up the JTF HQ	2CTC6: Identify closest medical facilities/hospitals by trauma level and establish contact in the event of a contingency requirement
		2OTC7: Hold a daily logistics coordination board (LCB) meeting with 167th Theater Sustainment Command (TSC)	
		2OTC8: Establish a Current Operations Center and a Future Operations Center	

Table 21: Maturity Level 3: Initial DSC2M2

Maturity Level	Level 3 - Integrated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Integrated maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Integrated maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Integrated maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	3ITC1: Teleconferences are conducted daily between DSC JTF, JFHQ, and JFLCC J1-2	3OTC1: Conduct daily situation report/story board/significant activities (SIGACT) briefing with integrated T10/T32 staff	3CTC1: Build Army Knowledge Online (AKO) webpage IOT facilitate knowledge integration among joint force and enhanced communication in the JOC
	3ITC2: Form functional Board Bureau Center Cell Working Groups (BBCCWGs)	3OTC2: Integrate T10/T32 future operations cells and plans IOT publish joint FRAGOs	3CTC2: Develop and implement a file tree structure/folder taxonomy on network share drive complete with J1-J8, + miscellaneous cells (SJA, PAO, etc)
	3ITC3: Integrate T10 MA's with T32 MA's in order to determine best sourcing solution	3OTC3: Establish a priority of work list and allocate resources according to priorities	3CTC3: Deploy a DSC JTF LNO to US Army Corps of Engineers (USACE) IOT integrate Emergency Support Function (ESF) 3 planning into current and future operations

Table 21 continued

	3ITC4: Draft template for DSC to request TACON of T10 forces under approved MA	3OTC4: Develop and maintain Common Operating Picture medium for use in JOC (Defense Connect Online; Google Earth, etc)	3CTC4: Use Defense Connect Online to publish and broadcast daily Commander's Update Brief (CUB)
	3ITC5: Develop and publish joint battle rhythm for real-time updates and improved situational awareness	3OTC5: Place a Current Operations staff member in Future Operations to integrate planning efforts and ensure accurate SA upon shift turnover	3CTC5: Integrate Public Affairs (PA) assets into JTF ground-based operations and develop a PA message for media coverage
		3OTC6: Assign one officer role of verbally briefing status updates to the JOC as needed	3CTC6: Integrate J8 (accounting/comptroller) personnel into JTF staff for financial advising WRT mission assignments and processes
		3OTC7: Designate NG officer as "Air Boss" to integrate T32/SAD assets into support operations	
		3OTC8: Develop and maintain a Mission Assignment tracker including requests, approvals, and execution status columns	

Table 22: Maturity Level 4: Initial DSC2M2

Maturity Level	Level 4 - Coordinated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Coordinated maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Coordinated maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Coordinated maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	4ITC1: Draft and maintain TACON request template for T10 IRA actions	4OTC1: Implement and employ LOGSTAT tracker in JTF with personnel assigned for real-time updates and shortfall requirements identification	4CTC1: Deploy and employ a Contingency Contracting Officer (CCO) to review support requests and ensure clarity
	4ITC2: Share intel reports between JTF, NORTHCOM, and JFHQ	4OTC2: Define and disseminate geographic limits in JOA for T10 IRA (i.e. selected counties) and maintain a tracker for all IRA activities	4CTC2: Use the Joint Acquisition Review Board (JARB) to track and assist CCO process contracting requests
	4ITC3: Coordinate and execute meetings between DSC JTF and T10 forces upon arrival in JOA	4OTC3: Coordinate with JFLCC/ARNORTH and establish contingency T10 sourcing conditions (if NG cannot fulfill request)	4CTC3: Ensure Staff Judge Advocate (SJA/JA) reviews all mission assignments, orders, etc. for compliance with laws

Table 22 continued

	4ITC4: Identify and empower one DCO with MA process/approval authority (when multiple are used)	TC4: Coordinate with JFMCC (USFF), JFACC, and JFLCC (ARNORTH/MARNORTH) IOT ensure general SA of maritime, air, and ground operations in support of mission	4CTC4: Identify the funding source/legislation for all NG operations (in T32); agreed upon by approving authorities
	4ITC5: Develop and publish list of EMAC capabilities and sourcing locations	4OTC5: Develop and maintain coordination link between JTF, State EOC, and FEMA	4CTC5: Coordinate w/ JTF ground-based PA assets and include PA personnel in JTF HQ to field media inquiries, VIP visits, etc.
		4OTC6: DSC conducts daily site visits to forces operating w/in JOA	4CTC6: SJA/JAG provides legal brief to DSC and deputies concerning the Responsible Use of Force (RUF)
		4OTC7: Conduct daily teleconferences with a single representative from all J-shops in JTF	
		4OTC8: Coordinate lodging, meals, vehicles, etc. for T10/T32/SAD personnel in JTF	

Table 23: Maturity Level 5: Initial DSC2M2

Maturity Level	Level 5 - Collaborative		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Collaborative maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Collaborative maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Collaborative maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	5ITC1: Post DSCA Execution Order (EXORD) response categories/notification requirements for quick reference	5OTC1: Implement and employ single electronic tracking system for all (T10/T32/SAD) unit movements/activities (i.e. Blue Force Tracker, SAGE, etc)	5CTC1: Assign personnel from T10/T32/SAD to operate/maintain BFT, SAGE, etc as primary function
	5ITC2: Issue standing General Order for T10 usage conditions	5OTC2: Collaborate with T10/T32/SAD leaders IOT establish defined exit strategy and conditions for redeployment	5CTC2: DSC JTFs, in conjunction with JFO and DCO have process mechanism in place to generate reimbursable/approved MA's for T10 force support
	5ITC3: Develop a single/uniform reporting format for all T10 and T32/SAD J1/2 reports	5OTC3: Place General Officer at JFO to serve as "Supreme DCO" (best for multi-state incident)	5CTC3: Draft PA message campaign and craft talking points to influence public perception in consonance with established points

Table 23 continued

	5ITC4: DSC JTF issues all subordinate Task Force execution orders; DCO, Service chiefs, etc do not issue orders	5OTC4: JFO/JFHQ are co-located in same area to minimize lag time and enhance collaboration	5CTC4: Assign DSC JTF staff member to monitor news media, social media, etc. for enhanced situational awareness; incorporate knowledge into daily commander's update briefs
	5ITC5: Maintain and update force structure manning and requirements as needed	5OTC5: Generate approved mission assignments for IRA actions (as needed)	5CTC5: Capture all operational costs and/or estimates for future processing
		5OTC6: Staff JTF with a budget/finance advisor to serve as a reimbursable authority SME (MA fund codes, processing, etc)	

Table 24: Capability Levels: Initial DSC2M2

Capability Levels			
Level 1: Defined	Generic Goals and Practices		Defined: GG 1: Institutionalize a defined process
			GT 1.1: Publish a dual status commander standard operating procedural manual
			GT 1.2: Publish a dual status commander defense directive
			GT 1.3: Publish a dual status commander doctrinal publication

Table 24 continued

		GT 1.4: Publish a dual status commander multi-service tactics techniques and procedures reference
		GT 1.5: Publish a dual status commander concept of operations (CONOPS)
Level 2: Managed		Managed GG 2: Institutionalize a managed process
		GT 2.1: Develop and implement after action/lessons learned collection reporting process
		GT 2.2: Use published reference material to assist in planning support operations
		GT 2.3: Establish, operate, and maintain a dual status commander training and certification program
Level3: Proactive		Proactive GG 3: Institutionalize a proactive process
		GT 3.1: Train and certify at least one dual status commander in all 54 states and territories
		GT 3.2: Publish and sign a dual status commander Memorandum of Agreement between DoD and 54 states and territories
		GT 3.3: Conduct dual status commander-led exercises and simulations/training
		GT 3.4: Obtain SECDEF and Governor pre-approval of designated dual status commanders for consequence management operations
Level 4: Adaptive		Adaptive GG 4: Institutionalize a mature process
		GT 4.1: Perform specific practices

M.2 HD/ASA Version

This version of the DSC2M2 is one of two alternative versions of the model developed following a focus group session with personnel within ASD HD/ASA. The original DSC2M2 was presented and changes were made according to the input received during this session. Table 25 through Table 29 show the resulting model for maturity levels 1 through 5 and Table 30 shows the capability levels. NOTE: The resulting model is a reflection of my own interpretation of the data and does not imply an endorsement by members of ASD HD/ASA or the Department of Defense.

Table 25: Maturity Level 1: HD/ASA Version

Maturity Level	Level 1 - Reactive		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Reactive maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Reactive maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Reactive maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	1ITC1: Obtain SECDEF approval for DSC activation	1OTC1: Pre-deploy T10 deputies to areas expecting DSC activation	1CTC1: Deploy DSC JTF Liaison Officers (LNOs) to state EOC, JFHQ
	1ITC2: Assign Anti-Terrorism/Force Protection (ATFP) role to member of DSC JTF J2 staff	1OTC2: Request a Restricted Operating Zone (ROZ) from the FAA (if necessary based on situation)	1CTC2: Establish communications link between LNOs / Emergency Preparedness Liaison Officers (EPLOs) and the Defense Coordinating Officer

Table 25 continued

	1ITC3: NORTHCOM pre-deploys joint task force support personnel IOT facilitate quicker staff augmentation and ensure J1-8 manning	1OTC3: Initiate NG presence patrols in known affected areas to generate initial situational awareness	1CTC3: Deploy DSC JTF LNO to FEMA; request FEMA LNO for DSC JTF
	1ITC4: Complete initial Incident Awareness Assessment (IAA)	1OTC4: Conduct Search and Rescue (SAR) operations for first 72 hours following establishment of JTF, and with approval following a state request	1CTC4: Establish wired/wireless internet capability in JOC/JTF HQ IOT facilitate required communications
	1ITC5: Request preliminary authorization from OSD to begin pre-deployment activities of federal forces	1OTC5: Rotate (2) T10 personnel on 12 hour shifts in Current Operations to ensure 24 hour coverage and continuity	1CTC5: All JTF personnel deploy w/ and use cell phones until sustainable communications can be established
	1ITC6: Generate and deliver Operational Security Brief (OPSEC) to DSC daily	1OTC6: Preposition T10 forces at nearby federal installations for future activation as needed	
		1OTC7: Identify Base Support Installations (BSI) w/in or near JTF JOA	
		1OTC8: Develop, publish, and disseminate a DSC JTF mission statement and commander's intent	

Table 26: Maturity Level 2: HD/ASA Version

Maturity Level	Level 2 - Convergent		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Convergent maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Convergent maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Convergent maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	2ITC1: Standardize and define Verbal Orders of the Commander (VOCO) process and requirements	2OTC1: Locate and establish communication with the Defense Coordinating Officer	2CTC1: All subordinate JTF Task Forces (TF) in JOA deploy LNO to DSC JTF
	2ITC2: Employ a Chief of Staff for both federal and state forces	2OTC2: Generate and publish a command and control wire diagram in the JOC (include names/contact info of all key personnel w/ in C2 wires)	2CTC2: Generate and publish a document containing relevant legal considerations (decision flow chart, etc) for joint force actions pertaining to Posse Comitatus, Insurrection Act, Stafford Act, Economy Act, etc.

Table 26 continued

	2ITC3: Incorporate METOC analysis in daily Commander's Update Brief (CUB)	2OSP: 3: Generate and publish list of EMAC sourcing solution capabilities for National Guard action	2CTC3: Designate a federal military deputy as National Guard LNO; designate National Guard deputy as federal military LNO
	2ITC4: Brief all newly arriving personnel on general situation	2OTC4: Identify JRSOI requirements and integrate into current and future operations planning	2CTC4: Build and maintain a requirements review board in JOC
	2ITC5: Develop and publish Commander's Critical Information Reporting (CCIR) requirements	2OTC5: Assess and disseminate operational boundaries for DSCA w/in JTF JOA (consider state borders for each DSC	2CTC5: Develop PACE (Primary, Alternative, Contingency, Emergency) plans for critical services, systems, capabilities and circulate among JTF staff and commanders
		2OTC6: Identify and converge on a single NG base/facility IOT stand up the JTF HQ	2CTC6: Identify closest medical facilities/hospitals by trauma level and establish contact in the event of a contingency requirement
		2OTC7: Establish a Current Operations Center and a Future Operations Center	

Table 27: Maturity Level 3: HD/ASA Version

Maturity Level	Level 3 - Integrated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Integrated maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Integrated maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Integrated maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	3ITC1: Teleconferences are conducted daily between DSC JTF, JFHQ, and JFLCC J1-2	3OTC1: Conduct daily situation report/story board/significant activities (SIGACT) briefing with integrated state and federal staff	3CTC1: Build webpage IOT facilitate knowledge integration among joint force and enhanced communication in the JOC
	3ITC2: Form functional Board Bureau Center Cell Working Groups (BBCCWGs)	3OTC2: Establish a priority of work list and allocate resources according to priorities and funding approval/availability	3CTC2: Develop and implement a file tree structure/folder taxonomy on network share drive complete with J1-J8, + miscellaneous cells (SJA, PAO, etc)

Table 27 continued

	3ITC3: Develop and publish joint battle rhythm for real-time updates and improved situational awareness	3OTC3: Develop and maintain Common Operating Picture medium for use in JOC (Defense Connect Online; Google Earth, etc)	3CTC3: Deploy a DSC JTF LNO to US Army Corps of Engineers (USACE) IOT integrate Emergency Support Function (ESF) 3 planning into current and future operations
		3OTC4: Place a Current Operations staff member in Future Operations to integrate planning efforts and ensure accurate SA upon shift turnover	3CTC4: Use Defense Connect Online to publish and broadcast daily Commander's Update Brief (CUB)
		3OTC5: Assign one billet assignment (rotating personnel) role of verbally briefing status updates to the JOC as needed	3CTC5: Integrate Public Affairs (PA) assets into JTF ground-based operations and develop a PA message for media coverage
		3OTC6: Designate NG officer as "Air Boss" to integrate state military assets into support operations	3CTC6: Integrate J8 (accounting/comptroller) personnel into JTF staff for financial advising WRT mission assignments and processes
		3OTC7: Develop and maintain a Mission Assignment tracker including requests, approvals, and execution status columns	

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Table 28: Maturity Level 4: HD/ASA Version

Maturity Level	Level 4 - Coordinated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Coordinated maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Coordinated maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Coordinated maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	4ITC1: Share intel reports between JTF, NORTHCOM, and JFHQ	4OTC1: Implement and employ LOGSTAT tracker in JTF with personnel assigned for real-time updates and shortfall requirements identification	4CTC1: Deploy and employ a Contingency Contracting Officer (CCO) to review support requests and ensure clarity
	4ITC2: Coordinate and execute meetings between DSC JTF and federal forces upon arrival in JOA	4OTC2: Coordinate with JFLCC/JFMCC/ARNORTH and establish contingency federal military sourcing conditions (if NG cannot fulfill request)	4CTC2: Use the Joint Acquisition Review Board (JARB) to track and assist CCO process contracting requests

Table 28 continued

	4ITC3: Identify and empower one DCO with MA process/approval authority (when multiple are used)	4OTC3: Coordinate with JFMCC (USFF), JFACC, and JFLCC (ARNORTH/MARNORTH) IOT ensure general SA of maritime, air, and ground operations in support of mission	4CTC3: Ensure Staff Judge Advocate (SJA/JA) reviews all mission assignments, orders, etc. for compliance with laws and statutory requirements
		4OTC4: Develop and maintain coordination link between JTF, State EOC, and FEMA	4CTC4: Identify the funding source/legislation for all NG operations (in T32); agreed upon by approving authorities
		4OTC5: DSC conducts daily site visits to forces operating w/in JOA	4CTC5: Coordinate w/ JTF ground-based PA assets and include PA personnel in JTF HQ to field media inquiries, VIP visits, etc.
		4OTC6: Conduct daily teleconferences with a single representative from all J-shops in JTF	4CTC6: SJA/JAG provides legal brief to DSC and deputies concerning the Responsible Use of Force (RUF)

Table 29: Maturity Level 5: HD/ASA Version

Maturity Level	Level 5 – Collaborative		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Collaborative maturity level relevant to J1, J2, doctrine, training, personnel, and leadership considerations	Generate a list of task considerations at the Collaborative maturity level relevant to J3, J4, J5, Organization, Materiel, and Facilities considerations	Generate a list of task considerations at the Collaborative maturity level relevant to J6, J8, Public Affairs, Judge Advocates, Surgeons, and Liaison considerations
Task Considerations	5ITC1: Develop a single/uniform reporting format for all federal and state intelligence reports	5OTC1: Implement and employ single electronic tracking system for all federal and state military force unit movements/activities (i.e. Blue Force Tracker, SAGE, etc)	5CTC1: Assign personnel to operate/maintain BFT, SAGE, etc as primary function
	5ITC2: DSC JTF issues all subordinate Task Force execution orders; DCO, Service chiefs, etc do not issue orders	5OTC2: Collaborate with federal and state military leaders IOT establish defined exit strategy and conditions for redeployment	5CTC2: DSC JTFs, in conjunction with JFO and DCO have process mechanism in place to account for all federal military support activities during DSCA operations; states account for their own activities
	5ITC3: Maintain and update force structure manning and requirements as needed	5OTC3: JFO/JFHQ are co-located in same area to minimize lag time and enhance collaboration	5CTC3: Draft PA message campaign and craft talking points to influence public perception in consonance with established points

Table 29 continued

		5OTC4: Staff JTF with a budget/finance advisor to serve as a reimbursable authority SME (MA fund codes, processing, etc)	5CTC4: Assign DSC JTF staff member to monitor news media, social media, etc. for enhanced situational awareness; incorporate knowledge into daily commander's update briefs
			5CTC5: Capture all operational costs for federal military activities and/or estimates for future processing

Table 30: Capability Levels: HD/ASA Version

Capability Levels		
Level 1: Defined	Generic Goals and Practices	Defined: GG 1: Institutionalize a defined process
		GT 1.1: Publish a dual status commander standard operating procedural manual
		GT 1.2: Publish a dual status commander defense directive
		GT 1.3: Publish a dual status commander joint operating doctrinal publication
		GT 1.4: Publish a dual status commander multi-service tactics techniques and procedures reference
		GT 1.5: Publish a dual status commander concept of operations (CONOPS)

Table 30 continued

Level 2: Managed	Managed GG 2: Institutionalize a managed process
	GT 2.1: Develop and implement after action/lessons learned collection reporting process
	GT 2.2: Use published reference material to assist in planning support operations
	GT 2.3: Establish, operate, and maintain a dual status commander training and certification program
Level3: Proactive	Proactive GG 3: Institutionalize a proactive process
	GT 3.1: Train and certify at least one dual status commander in all 54 states and territories
	GT 3.2: Publish and sign a dual status commander Memorandum of Agreement between DoD and 54 states and territories
	GT 3.3: Conduct dual status commander-led exercises and simulations/training
	GT 3.4: Obtain SECDEF and Governor pre-approval of designated dual status commanders for consequence management operations
Level 4: Adaptive	Adaptive GG 4: Institutionalize a mature process
	GT 4.1: Perform specific practices

M.3 NORTHCOM Version

This is an alternative version of the original DSC2M2 developed following a focus group session with personnel from U.S. NORTHCOM. The original DSC2M2 was presented and changes were made according to the input received during this session. Table 31 through Table 35 show the resulting model for maturity levels 1 through 5 and Table 36 shows the capability levels. NOTE: The resulting model is a reflection of my own interpretation of the data and does not imply an endorsement by members of U.S. NORTHCOM or the Department of Defense.

Table 31: Maturity Level 1: NORTHCOM Version

Maturity Level	Level 1 - Reactive		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Reactive maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Reactive maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Reactive maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	1ITC1: Obtain SECDEF approval for DSC activation	1OTC1: Pre-deploy T10 deputies to areas expecting DSC activation	1CTC1: Deploy DSC JTF Liaison Officers (LNOs) to key agency nodes like the state EOC, JFHQ
	1ITC2: Assign Anti-Terrorism/Force Protection (ATFP) role to member of DSC JTF staff	1OTC2: Request a Restricted Operating Zone (ROZ) from the FAA (if necessary based on situation)	1CTC2: Establish communications link between LNOs / Emergency Preparedness Liaison Officers (EPLOs) and the Defense Coordinating Officer

Table 31 continued

	1ITC3: NORTHCOM deploys DSC Staff Augmentation IOT facilitate quicker staff augmentation and ensure J1-8 manning	1OTC3: Initiate NG presence patrols in known affected areas to generate initial situational awareness	1CTC3: Deploy DSC JTF LNO to DCO (FEMA JFO); request DCO LNO for DSC JTF
	1ITC4: Get initial Incident Awareness Assessment (IAA) information from civilian agencies	1OTC4: Conduct Search and Rescue (SAR) operations, as requested, for first 72 hours following establishment of JTF	1CTC4: Establish wired/wireless internet capability in JOC/JTF HQ IOT facilitate required communications
	1ITC5: Issue Prepare to Deploy Orders (PTDO) for anticipated T10 forces	1OTC5: Rotate (2) T10 personnel on 12 hour shifts in Current Operations to ensure 24 hour coverage and continuity	1CTC5: All JTF personnel deploy w/ and use organic military and personal communications equipment until sustainable communications can be established
	1ITC6: Generate and deliver threat briefing to DSC daily	1OTC6: Preposition anticipated T10 forces at nearby federal installations for future activation as needed	
		1OTC7: Identify Base Support Installations (BSI) w/in or near JTF JOA	
		1OTC8: Develop, publish, and disseminate a DSC JTF mission statement and commander's intent	

Table 32: Maturity Level 2: NORTHCOM Version

Maturity Level	Level 2 - Convergent		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Convergent maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Convergent maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Convergent maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	2ITC1: Standardize and define Verbal Orders of the Commander (VOCO) process and requirements	2OTC1: Locate and establish communication with the DCO	2CTC1: All subordinate JTF Task Forces (TF) in JOA deploy LNO to DSC JTF
	2ITC2: Obtain additional staff to conduct staff operations based on the Battle Rhythm and anticipated force size under the JTF.	2OTC2: Generate and publish a command and control wire diagram in the JOC (include names/contact info of all key personnel w/ in C2 wires)	2CTC2: Generate and publish a document containing relevant legal considerations (decision flow chart, etc) for joint force actions pertaining to Posse Comitatus, Insurrection Act, Stafford Act, Economy Act, etc.

Table 32 continued

2ITC3: Incorporate METOC analysis in daily Commander's Update Brief (CUB)	2OTC3: Conduct mission analysis of possible civilian capability gaps and generate a list of possible military solutions to include EMAC, Active Duty forces, etc.	2CTC3: Conduct reoccurring situational awareness meeting among staff, i.e. T10 staff huddle
2ITC4: Brief all newly arriving personnel on general situation and mission	2OTC4: Create JRSOI concept and source to support deploying forces.	2CTC4: Build and maintain the ability to conduct mission tracking and excess capability in JOC
2ITC5: Develop and publish Commander's Critical Information Reporting (CCIR) requirements	2OTC5: Assess and disseminate operational boundaries for DSCA w/in JTF JOA (consider state borders for each DSC	2CTC5: Develop PACE (Primary, Alternative, Contingency, Emergency) plans for critical services, systems, capabilities and circulate among JTF staff and commanders
	2OTC6: Identify and converge on a single NG base/facility IOT stand up the JTF HQ	2CTC6: Identify closest medical facilities/hospitals by trauma level and establish contact in the event of a contingency requirement

Table 32 continued

| | | 2OTC7: Hold a daily logistics coordination board (LCB) meeting with logistics HQ supporting the operation | |
| | | 2OTC8: Establish a Current Operations Center and a Future Operations Center | |

Table 33: Maturity Level 3: NORTHCOM Version

Maturity Level	Level 3 - Integrated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Integrated maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Integrated maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Integrated maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures

Table 33 continued

Task Considerations	3ITC1: Teleconferences are conducted daily between DSC JTF, JFHQ, and JFLCC J1-2	3OTC1: Conduct daily situation report/story board/significant activities (SIGACT) briefing with integrated T10/T32 staff	3CTC1: Build webpage IOT facilitate knowledge integration among joint force and enhanced communication in the JOC
	3ITC2: Form functional Board Bureau Center Cell Working Groups (BBCCWGs)	3OTC2: Integrate T10/T32 into future operations cells and plans IOT publish joint FRAGOs	3CTC2: Develop and implement a file tree structure/folder taxonomy on network share drive complete with J1-J8, + miscellaneous cells (SJA, PAO, etc)
	3ITC3: Synchronize mission tasking at JTF to provide unity of effort in Active and National Guard support to the affected area.	3OTC3: Establish a priority of work list and allocate resources according to priorities	3CTC3: Deploy a DSC JTF LNO to US Army Corps of Engineers (USACE) IOT integrate Emergency Support Function (ESF) 3 planning into current and future operations
	3ITC4: Develop and publish joint battle rhythm for real-time updates and improved situational awareness	3OTC4: Develop and maintain Common Operating Picture medium for use in JOC (Defense Connect Online; Google Earth, etc)	3CTC4: Use Defense Connect Online to publish and broadcast daily Commander's Update Brief (CUB)

Table 33 continued

		3OTC5: Place a Current Operations staff member in Future Operations to integrate planning efforts and ensure accurate SA upon shift turnover	3CTC5: Integrate Public Affairs (PA) assets into JTF ground-based operations and develop a PA message for media coverage
		3OTC6: Assign one officer role of verbally briefing status updates to the JOC as needed	3CTC6: Integrate J8 (accounting/comptroller) personnel into JTF staff for financial advising WRT mission assignments and processes
		3OTC7: Designate NG officer as "Air Boss" to integrate T32/SAD assets into support operations	
		3OTC8: Develop and maintain a Mission Assignment tracker including requests, approvals, and execution status columns	

Table 34: Maturity Level 4: NORTHCOM Version

Maturity Level	Level 4 - Coordinated		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Coordinated maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Coordinated maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Coordinated maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures
Task Considerations	4ITC1: Establish information linkages with military IRA forces to understand what mission they are performing	4OTC1: Implement and employ LOGSTAT tracker in JTF with personnel assigned for real-time updates and shortfall requirements identification	4CTC1: Deploy and employ a Contingency Contracting Officer (CCO) to review support requests and ensure clarity
	4ITC2: Share intel reports between JTF, NORTHCOM, and JFHQ	4OTC2: Define and disseminate geographic limits in JOA for T10 IRA (i.e. selected counties) and maintain a tracker for all IRA activities	4CTC2: Use the Joint Acquisition Review Board (JARB) to track and assist CCO process contracting requests

Table 34 continued

4ITC3: Coordinate and execute meetings between DSC JTF and T10 forces upon arrival in JOA	4OTC3: Coordinate with JFLCC/ARNORTH and establish contingency T10 sourcing conditions (if NG cannot fulfill request)	4CTC3: Ensure Staff Judge Advocate (SJA/JA) reviews all mission assignments, orders, etc. for compliance with laws and statutory requirements
4ITC4: Identify and empower one DCO with MA process/approval authority (when multiple DCOs are deployed to support an incident)	TC4: Coordinate with JFMCC (USFF), JFACC, and JFLCC (ARNORTH/MAR NORTH) IOT ensure general SA of maritime, air, and ground operations in support of mission	4CTC4: Identify the funding source/legislation for all NG operations (in T32); agreed upon by approving authorities
4ITC5: Develop list of nearby military capabilities that may be used as the situation warrants under IRA	4OTC5: Develop and maintain coordination link between JTF, State EOC, and FEMA	4CTC5: Coordinate w/ JTF ground-based PA assets and include PA personnel in JTF HQ to field media inquiries, VIP visits, etc.
	4OTC6: DSC conducts daily site visits to forces operating w/in JOA	4CTC6: SJA/JAG provides legal brief to DSC and deputies concerning the Responsible Use of Force (RUF)

Table 34 continued

| | | 4OTC7: Conduct daily teleconferences with a single representative from all J-shops in JTF | |
| | | 4OTC8: Coordinate lodging, meals, vehicles, etc. for T10/T32/SAD personnel in JTF | |

Table 35: Maturity Level 5: NORTHCOM Version

Maturity Level	Level 5 - Collaborative		
Process Area	Information	Operations	Communication
Purpose	Generate a list of task considerations at the Collaborative maturity level relevant to personnel and intelligence, doctrine, training, and leadership processes and procedures	Generate a list of task considerations at the Collaborative maturity level relevant to operations, plans, logistics, organization, materiel, and facilities processes and procedures	Generate a list of task considerations at the Collaborative maturity level relevant to communications, funding, public affairs, legal, medical, and liaison processes and procedures

Table 35 continued

Task Considerations	5ITC1: Post relevant tactical and operational documents, like OPORDS and DSCA Execution Order (EXORD), or quick reference publications	5OTC1: Implement and employ single electronic tracking system for all (T10/T32/SAD) unit movements/activities (i.e. Blue Force Tracker, SAGE, etc)	5CTC1: Assign personnel from T10/T32/SAD to operate/maintain situational awareness tools such as BFT, SAGE, etc as primary function
	5ITC2: Issue standing General Order for T10 usage conditions	5OTC2: Collaborate with T10/T32/SAD leaders IOT establish defined exit strategy and conditions for redeployment	5CTC2: DSC JTFs, in conjunction with JFO and DCO have process mechanism in place to draw down and terminate T10 force support at mission completion
	5ITC3: Develop a single/uniform reporting format for all T10 and T32/SAD J1/2 reports	5OTC3: For a large State incident with a large number of Active Duty forces supporting, that may require multiple DCOs to support, indentify a single DCO to be in charge of the DOD MA process for that state	5CTC3: Draft PA message campaign and craft talking points to influence public perception in consonance with established points
	5ITC4: DSC JTF issues all subordinate Task Force timely and complete execution orders	5OTC4: JFO/JFHQ/State EOC are co-located in same area to minimize lag time and enhance collaboration	5CTC4: Assign DSC JTF staff member to monitor news media, social media, etc. for enhanced situational awareness; incorporate knowledge into daily commander's update briefs

Table 35 continued

	5ITC5: Maintain and update force structure manning and requirements as needed	5OTC5: Generate approved mission assignments for IRA forces (as needed)	5CTC5: Capture all operational costs and/or estimates for future processing
		5OTC6: Staff JTF with a budget/finance advisor to serve as a reimbursable authority SME (MA fund codes, processing, etc)	

Table 36: Capability Levels: NORTHCOM Version

Capability Levels		
Level 1: Defined	Generic Goals and Practices	Defined: GG 1: Institutionalize a defined process
		GT 1.1: Publish a dual status commander standard operating procedural manual
		GT 1.2: Publish a dual status commander defense directive
		GT 1.3: Publish a dual status commander joint operating doctrinal publication
		GT 1.4: Publish a dual status commander multi-service tactics techniques and procedures reference
		GT 1.5: Publish a dual status commander concept of operations (CONOPS)
Level 2: Managed		Managed GG 2: Institutionalize a managed process
		GT 2.1: Develop and implement after action/lessons learned collection reporting process
		GT 2.2: Use published reference material to assist in planning support operations
		GT 2.3: Establish, operate, and maintain a dual status commander training and certification program

Table 36 continued

Level3: Proactive		Proactive GG 3: Institutionalize a proactive process
		GT 3.1: Train and certify at least one dual status commander in all 54 states and territories
		GT 3.2: Publish and sign a dual status commander Memorandum of Agreement between DoD and 54 states and territories
		GT 3.3: Conduct dual status commander-led exercises and simulations/training
		GT 3.4: Obtain SECDEF and Governor pre-approval of designated dual status commanders for consequence management operations
Level 4: Adaptive		Adaptive GG 4: Institutionalize a mature process
		GT 4.1: Perform specific practices

Appendix N

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April 2, 2015

Ryan P. Burke
c/o Disaster Research Center
University of Delaware
166 Graham Hall
Newark, DE 19716

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I will expedite upon their return.

Best regards,

Darlene Moore

SCAMPI Operations Manager

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1150 Stanwix Street

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Sent: Wednesday, March 25, 2015 1:38 PM

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Appendix O

STRATEGIC STUDIES INSTITUTE CONTRACT LANGUAGE

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Subcontract Data. The contractor shall ensure that all reportable subcontract data is timely reported to this data collection web site (citing this contract/order number). At the discretion of the prime contractor, this reporting may be done directly by subcontractors to the data collection site; or by the prime contractor after consolidating and rationalizing all significant data from the subcontractors.
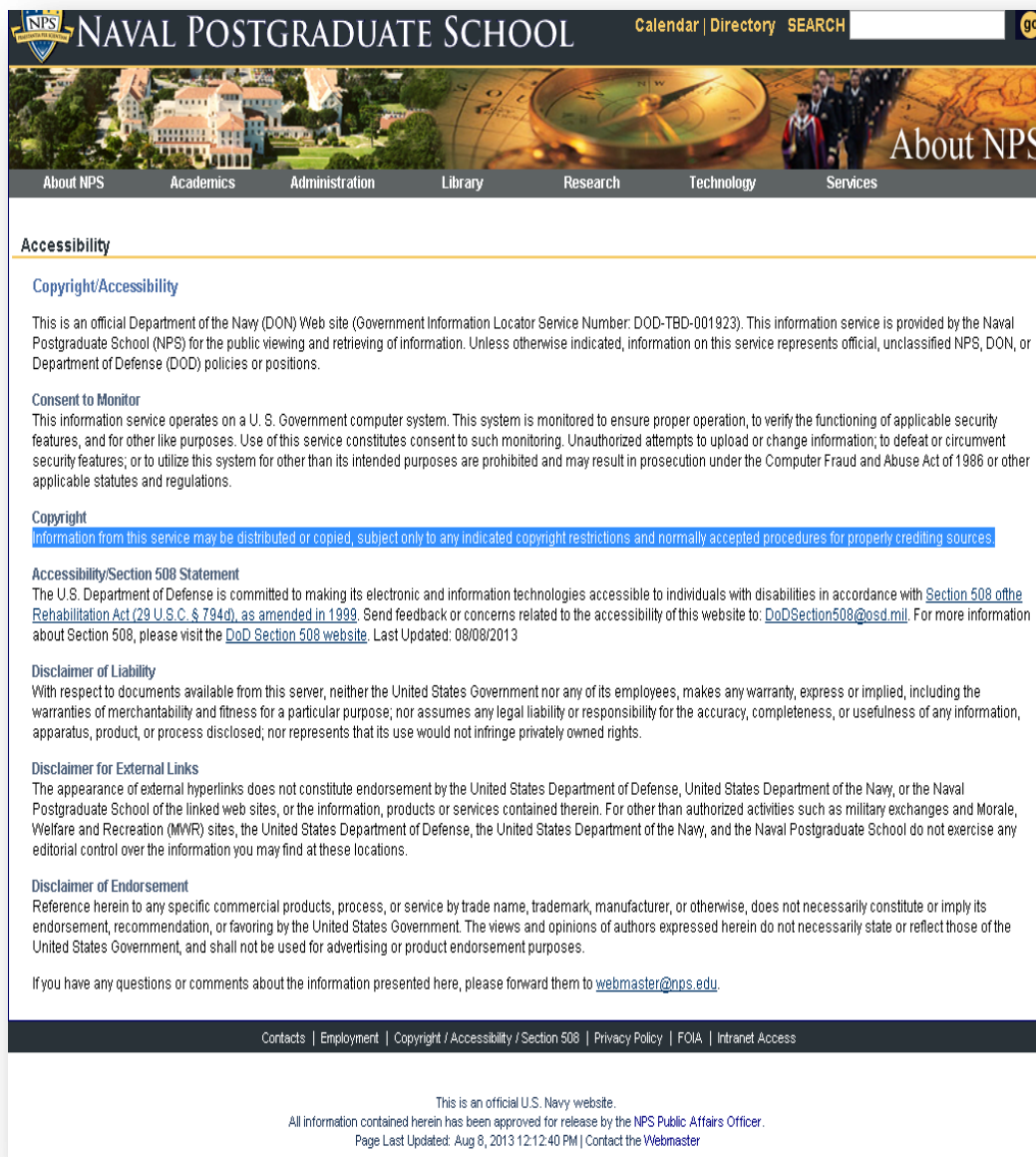
Reporting Flexibility. Contractors are encouraged to communicate with the Help Desk identified at the data collection web site to resolve reporting difficulties. Changes to facilitate reporting may be authorized by the contracting officer or the Help Desk (under HQDA policy direction and oversight).

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Appendix P

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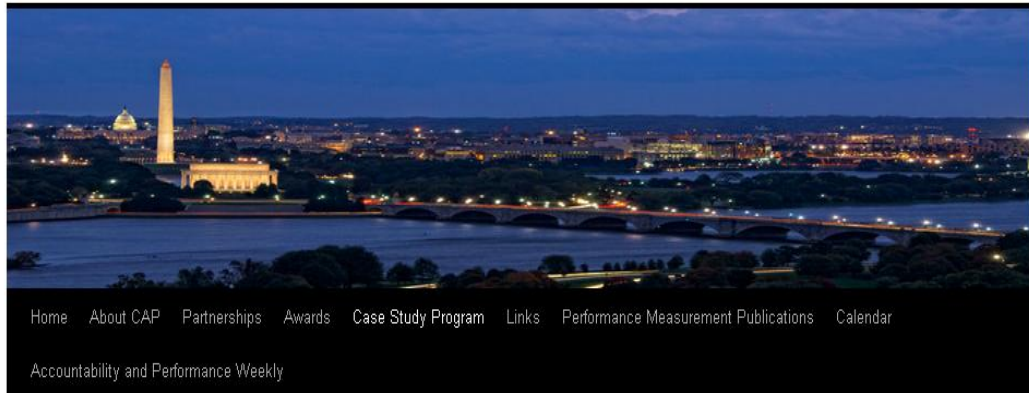
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