

Policing and Mass Casualty Events

Volume 3 of the Proceedings of the Futures Working Group



Joseph A. Schafer & Bernard H. Levin, Eds.

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Although many members of the FWG were able to attend the Palo Alto meeting and contribute written work to this monograph, others were precluded from doing so because of work constraints. The members of FWG contributed actively to the discussion that became this volume, even where they are not listed as chapter authors. Finally, Mary O'Dea served as a patient and meticulous copy editor for the chapters contained in this volume. Mary and the contributing authors deserve all of the credit for this volume's content; the editors are to blame for any remaining errors or omissions.

Lastly, we also would like to recognize the valuable assistance of Ms. Jeri Roberts. She has contributed significantly to the ongoing activities of the Futures Working Group throughout the course of her internship at the FBI Behavioral Science Unit. With regard to this particular work, we are especially grateful to Ms. Roberts for her important and timely role in the final copy editing, formatting, and design of this volume.

A Word from the Chairman

The Futures Working Group (FWG) was created over 5 years ago. Since that time the FWG has been very successful in its effort to examine current and emerging issues confronting the future of law enforcement. In addition to regular meetings of this group, several articles, at least two books, numerous training events, and many conference appearances have been devoted to examining future challenges confronting law enforcement. Through these efforts, the FWG has continually examined what futurists term the “possible, probable, and preferable” futures in an effort to achieve a singular mission: to promote the notion that by examining future possibilities we may be able to “create” the future rather than simply waiting for it to unfold.

The present work represents the third volume of proceedings inspired by the many activities of the Futures Working Group. Like previous volumes, this work found its roots in the numerous discussions, white papers, and thought-provoking works that the FWG has produced since its creation. Its aim is to examine social, economic, political, and cultural challenges that accompany mass casualty events to which law enforcement responds. While these events are always traumatic, heart-wrenching, challenging, and always difficult in their aftermath, the police and other emergency services personnel are the one constant that the public inevitably relies upon to help make things alright. The lives of the survivors are never the same but these first responders, sometimes in the smallest of ways, make the path to normalcy a little easier for folks to traverse.

This work explores these dynamics and the role of the police in foreseeing the possibility that such events may occur in your jurisdiction. It is in this spirit that this volume was pursued and, like other volumes in this series, we hope that the essays that are offered herein assist not just the police but communities nationwide to envision what

is not just possible but preferable when first responders once again are called to action to do whatever is necessary to assist when mass casualty events occur.

Lastly, many works contained herein are not so much predictions or remedies for responding to mass casualty events, as they are discussions of what pathways may be promising for law enforcement to pursue in responding to such events. Given the inevitable challenges of responding to various kinds of mass casualty events that seem to strike all over the world with some frequency, we could not have envisioned a timelier topic than that of this volume.

As you read the works contained herein remember that the goal of futurists is to inspire thought and provocative ideas that these works encourage. These arguments may both challenge your consciousness and confirm your sensibilities pertaining to appropriate responses to events of this nature. Contemplating future courses of action often yields these outcomes. In the end, you may agree with some perspectives offered and disagree with others. As is often expressed in these volumes: “Ultimately, our fervent desire is that this work will motivate you to devise ways to create your own preferred future.” By doing so, we hope that not only you, but also the communities within which you work and live, will benefit from the exercise of considering future responses to mass casualty events that unfortunately occur all too frequently.

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June, 2007

The opinions and statements contained in this volume are those of the individual authors and should not be considered an endorsement by the FBI or the Department of Justice for any policy, program or service.

Preface

The present volume is a product of the Futures Working Group (FWG), which is a joint effort of the Society of Police Futurists International and the U.S. Federal Bureau of Investigation. The volume was first discussed at the FWG meeting held in conjunction with the Accelerating Change conference in Palo Alto, California, in September 2005. This meeting was held in the immediate aftermath of Hurricanes Katrina and Rita when our nation was still working to understand those events and governmental responses. During the past year, members of the FWG have continued to cogitate about these events. The scope of discussion was not limited to what the southeastern U.S. experienced in 2005. Instead, we engaged in a much broader dialogue about how emergency and critical services can be used in the most effective manner. Our efforts resulted in the production of this volume: a set of essays on policing and mass casualty events.

“Policing and Mass Casualty Events,” the title selected for this volume, was not chosen randomly. Certainly, this volume was motivated in part by the 9/11 attacks and in part by natural disasters such as Hurricanes Katrina and Rita. Two chapters focus on Hurricane Katrina (those by Youngs and Gardner), and several touch on 9/11. The chapters are intended to serve as exemplars rather than post mortems. The entire volume seeks to consider not what we did wrong, but rather on future opportunities to do right. Because the FWG is dedicated to positively shaping the future, the members chose to discuss how responses to future mass casualty events might be shaped to minimize loss of life and property while reducing operating costs and problems.

The present volume does not focus on a single incident of disaster or on a single type of disaster. Rather, the editors and chapter authors recognize that we have

experienced many varieties of mass casualty events, at least as far back as paleontology takes us. While myriad events have been chronicled, e.g., Winchester's (2003) review of the eruption of Krakatoa in 1883 and de Boer and Sanders' (2005) discussion of seismic disruptions, few have looked across classes of disasters, and to our knowledge none has looked at the future of mass casualty events in general. The authors of this volume attempt to do just that.

This volume crosses boundaries. It applies to climate-related events, geological events, terrorist events, war, and events caused by disease and pests. All have in common the potential for mass casualties, all have in common a threat to society beyond the immediate event, all call for durable and effective communication, and all will place demands – often-impossible demands – on emergency responders, particularly police. We recognize some overlap with previous works. Winchester (2003), for example, does, *inter alia*, weigh the role of the (then-new) telegraph and print media, but the scope of the present text differs from earlier writings. This volume addresses various communications technologies as well as the social and organizational context, emerging models, and future applications to emergency services.

The contributing authors have expertise in policing, research, and technology. Their view is broad. They see policing as a public service and police as the ultimate community caretakers. They lay out many of the issues that mass casualty events portend, and consider resources, preparation, response and aftermath. That said, this volume is an initial slice at a set of Gordian problems rather than an exhaustive tome. The authors seek to expand the dialogue of mass casualty events to look more carefully at how we can be more effective in the future. Their contributions are intended to be thought-provoking,

insightful, and initial efforts; they are neither all encompassing nor the final word on these matters. The definitive work awaits another day.

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March, 2007

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An Analysis of Failure: Pearl Harbor, 9/11, Hurricanes Katrina and Rita Carl J. Jensen, III

Across the government, there were failures of imagination, policy, capabilities, and management.

National Commission on Terrorist Attacks Upon the United States (2004: 9)

Complacency and procrastination are out of place where sudden and decisive actions are of the essence.

Joint Committee on the Investigation of the Pearl Harbor Attack (1946: 257)

(S)tremlining, simplifying, and expediting decision making must quickly replace “business as usual” approaches to doing business.

Statement by Comptroller General David M. Walker on GAO’s Preliminary Observations Regarding Preparedness and Response to Hurricanes Katrina and Rita (Walker, 2006: 6)

Introduction

The scenario repeats with depressing regularity. A national-level catastrophe or tragedy strikes. Before the dust has a chance to settle, fingers get pointed, accusations are made, and blame is parceled out. Eventually, a Congressional Committee or other fact-finding body lies out, in excruciating detail, just what went wrong and how it can be fixed. And yet, things continue to go wrong for seemingly the same reasons (or at least that is the perception).

This chapter examines the following questions: to what extent does government learn from its past mistakes? If the answer is very little, the question becomes why? How can it be that the confluence of talented, motivated individuals does not equate to, if not perfection, at least competence? Are there other, systemic forces at work that confound and hinder the best efforts of individuals? And ultimately what does this mean for policing?

Methodology

The methodology employed herein is qualitative. Three relatively recent events in U.S. history – the Attack on Pearl Harbor, the 9/11 Attacks, and the Hurricane Katrina relief efforts – are examined for their similarities and differences. In particular, perceived governmental failures to prevent both Pearl Harbor and 9/11 in addition to inadequacies with regard to recovery efforts pertaining to Katrina and Rita are analyzed. These events were chosen for a particular reason: their national level significance and devastating consequences guaranteed that many hard questions would be asked. To that end, at least two (Pearl Harbor and 9/11) produced exceptionally comprehensive congressional reports that examined in great detail what happened, what went wrong, and what could be done to prevent such failures in the future. The General Accounting Office (GAO) has written a monograph that provides sufficient information from which to draw some tentative conclusions.¹

The source documents used in the present analysis are:

- *The 9/11 Commission Report*. The National Commission on Terrorist Attacks Upon the United States (2004)
- *Investigation of the Pearl Harbor Attack*. Joint Committee on the Investigation of the Pearl Harbor Attack, Congress of the United States (1946)
- *Statement by Comptroller General David M. Walker on GAO's Preliminary Observations Regarding Preparedness and Response to Hurricanes Katrina and Rita* (2006)

¹ Additional critique of the Katrina & Rita responses can be found in the Congressional report *A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for the Response to Hurricane Katrina*, http://katrina.house.gov/full_katrina_report.htm, which was released in February 2006.

Problems noted and recommendations found in the official materials were synthesized into broad, general categories. This was motivated by the need for clarity and the desire to determine whether consistent systemic issues across disasters could be identified. One might logically predict that the Pearl Harbor and 9/11 reports would highlight like issues; after all, both deal with the inability to prevent catastrophic attacks. Katrina and Rita, on the other hand, reveal significant deficiencies in response after the catastrophic event. However, if consistent, systemic government inadequacies exist, each might contribute to both an inability to prevent/foresee a disaster as well as an inadequate response in its aftermath.

Results

The 9/11 and Pearl Harbor reports are noteworthy in their similarities. Indeed, many of the findings in one can be equally applied to the other. Perhaps of greater interest, many of the problems and recommendations found in the Katrina/Rita analysis are similar to those found in the Pearl Harbor and 9/11 documents. In broad terms, the following categories of deficiencies cut across all three reports:

- *lack of imagination/creativity;*
- *failure to gain a comprehensive, strategic understanding of the threat;*
- *inability or unwillingness to share information/cooperate;*
- *failure to plan/train;*
- *and failure to act decisively.*

Each category is considered in turn within this chapter.

Lack of Imagination/Creativity

The 9/11 Commission did not mince words:

The most important failure was one of imagination. We do not believe leaders understood the gravity of the threat (pg. 9)...Terrorism was not the overriding national security concern for the U.S. government under either the Clinton or pre-9/11 Bush administration. The policy challenges were linked to this failure of imagination (National Commission on Terrorist Attacks Upon the United States, 2004: Executive Summary: 10).

According to the Commission, despite clear indications of al Qaeda's intentions, which included previous attacks on U.S. interests, proposed plots utilizing aircraft to attack buildings, indications of pilot training on the part of radical jihadists, and verbalizations by Osama Bin Laden himself, many in government were shocked when the September 11th attacks unfolded.

The inability to predict a particular attack goes well beyond a mere lack of understanding; in fact, it produces a complacency that causes many to completely underestimate all facets of the threat. The same type of complacency that was manifest following the September 11th attacks was evident after the attack on Pearl Harbor:

There is no substitute for imagination and resourcefulness on the part of supervisory and intelligence officials (pg. 260)...Contributing to the effectiveness of the attack was a powerful striking force, much more powerful than it had thought the Japanese were able to employ in a single tactical venture at such distance and under such circumstances (Joint Committee on the Investigation of the Pearl Harbor Attack, 1946: 251).

While it could be argued that successful subterfuge was employed to explain a lack of foreknowledge regarding both attacks, a similar phenomenon - perhaps more aptly insufficient imagination - can be noted with regard to Katrina:

Leadership underestimated the storm and damage. The DHS Secretary designated Hurricane Katrina as an incident of national significance on August 30th the day after final landfall. As a result of categorizing it as an incident of national significance instead of a catastrophic event, the federal posture generally was to

wait for the affected states to request assistance. If it were categorized as a catastrophic event the federal response would have been more aggressive and would have come right away (Walker, 2006: 4).

There are many attributes of groups that, if left unchecked, can serve to stifle creativity and imagination (Paulus, 2000). Indeed, most businesses today would agree with Einstein's famous admonition that "imagination is more important than knowledge" (Einstein, n.d.) and many work diligently to overcome institutional barriers to success (Tan, 1998). Given the strong likelihood that rates of change and levels of uncertainty will only increase in the 21st century (Kurzweil, 2005), the role that imagination and creativity will play in dealing with an unknown world should not be underestimated. The military appears to have recognized this and gears a great deal of its Professional Military Education program to developing critical thinking skills (Trott, 2006). Sadly, other public institutions seem less committed to the same goal.

Failure to Gain a Comprehensive, Strategic Understanding of the Threat

In the months following 9/11, a new phrase gained favor in our lexicon: "failure to connect the dots." Its meaning is quite simple; no one entity had successfully assembled and linked together all the available information to gain a strategic level understanding regarding the nature of the al Qaeda threat:

The most serious weaknesses in agency capabilities were in the domestic arena. The FBI did not have the capability to link the collective knowledge of agents in the field to national priorities. Other domestic agencies deferred to the FBI (pg. 9)...(W)hile there were many reports on Bin Laden and his growing al Qaeda organization, there was no comprehensive review of what the intelligence committee knew and what it did not know, and what that meant (National Commission on Terrorist Attacks Upon the United States, 2004: Executive Summary, 12).

In reality, the problem went well beyond the FBI. If one considers the totality of the information available in the files of intelligence agencies, other federal agencies (e.g.,

the State Department, the FAA) the military, local police departments,² and the private sector, there was a substantial amount of information that could have shed light on the pending attacks had the information been synthesized.

Difficulty in connecting dots did not begin with the 9/11 attacks, though. Consider the following from the Pearl Harbor report:

The Intelligence and War Plans Divisions of the War and Navy Departments failed: ...To give careful and thoughtful consideration to the intercepted messages from Tokyo to Honolulu of September 24, November 15, and November 20...and to raise a question as to their significance...To be properly on the qui vive to receive the “one o’clock” intercept and to recognize that military action would very possibly occur somewhere at 1 p.m., December 7. If properly appreciated, this intelligence should have suggested a dispatch to all Pacific outpost commanders... (Joint Committee on the Investigation of the Pearl Harbor Attack, 1946: 252).

While a strategic level understanding will help in the prevention of a catastrophic event, it will assist in the aftermath of one as well. Consider the recommendations of Comptroller General Walker concerning inadequate visioning and planning prior to Hurricanes Katrina and Rita:

...(P)rior to a catastrophic event, the leadership roles, responsibilities, and lines of authority for the response at all levels must be clearly defined and effectively communicated in order to facilitate rapid and effective decision making, especially in preparing for and in the early hours and days after the event (Walker, 2006: 3).

Gaining a strategic level understanding of one’s environment has always been a challenge; in today’s information-sodden world, that challenge has increased exponentially. “Connecting the dots” is not the only phrase to have gained prominence in the post 9/11 world. Consider the term “stovepipe,” a word used to describe systems that

² Some of the 9/11 hijackers had encounters with local police prior to the attacks, to include the issuance of traffic citations (National Commission on Terrorist Attacks Upon the United States, 2004).

do not integrate well with other systems. The sheer number of “stovepiped” systems that possess information today is staggering; there are so many, in fact, that assigning some overriding authority to gain the strategic vantage point may be counterproductive or impossible.

Levin and Jensen (2005) have proposed a somewhat different model, one more resembling today’s blogs, in which information is shared freely and consensus (or lack of same) emerges naturally. In such a system, the role of the central authority is to provide systems and guidance that facilitate sharing. That way, the group - rather than a single individual - understands and contributes to the strategic vision.

Inability or Unwillingness to Share Information and/or Cooperate

Rodney King’s lament for just getting along could be the mantra for governmental reform. The inability or unwillingness of government entities to cooperate and share is, unfortunately, nothing new. In the case of the disasters under study, guarding turf and fostering a competitive rather than a cooperative organizational attitude made things much worse:

Action officers should have been able to draw on all available knowledge about al Qaeda in the government. Management should have ensured that *information was shared and duties were clearly assigned across agencies, and across the foreign-domestic divide* (pg. 10 - 11)... The combination of an overwhelming number of priorities, flat budgets, an outmoded structure, and *bureaucratic rivalries* resulted in insufficient response to the new challenge (pg. 12)...Those working counterterrorism matters did so despite limited intelligence collection and strategic analysis capabilities, *a limited capacity to share information both internally and externally* (pg. 13)...At more senior levels communication was poor. Senior military and FAA officials had no effective communication with each other (emphasis added) (National Commission on Terrorist Attacks Upon the United States, 2004: Executive Summary, 15).

The Pearl Harbor Committee (1946) was more blunt in its assessment:

Specifically, the Hawaiian commands failed...to effect liaison on a basis designed to acquaint each of them with the operations of the other, which was necessary to their joint security, and to exchange fully all significant intelligence (pg. 252)

Any doubt as to whether outposts should be given information should always be resolved in favor of supplying the information (pg. 255)

Restriction of highly confidential information to a minimum number of officials, while often necessary, should not be carried to the point of prejudicing the work of the organization (pg. 261).

Personal or official jealousy will wreck any organization (pg. 264).

The lack of a shared vision, exacerbated by a dearth of pre-disaster relationship building and familiarity will derailed the best efforts of even the most competent and dedicated individuals:

The Federal Emergency Management Agency (FEMA) and the Red Cross – working together for the first time as co-primary agencies for ESF-6 under the National Response Plan – disagreed about their roles and responsibilities, and this disagreement strained working relationships and hampered their efforts to coordinate relief services for hurricane victims (General Accounting Office, 2006:1).

As human beings, we are enamored with competition. Consider the World Cup, the Super Bowl, or the Tour de France. That spirit of competition has spilled over into the public sector, with “no child left behind” legislation rewarding “good” schools and agencies competing for scarce resources.³

In spite of task forces and gradual improvement, both organizational and personal competition, rather than cooperation, are the norm for many police organizations. How many law enforcement CEOs *truly* reward their subordinates for cooperating with others over individually solving the “big case”? If “what gets rewarded gets done” is true, it leaves little incentive for cooperation.

³ Although, consider as a corollary, the following: the writer was once told by a senior law enforcement official that failure wasn't always a bad thing; indeed, resources would often be thrown at a “failed” venture in order to “fix the problem.”

If playing well with others is still a work in progress for some in policing, it seems to have gained legs in other venues. Recently, a leader of the white power movement in the United States issued congratulations and assistance to al Qaeda and like-minded organizations for their fight against the West. The possibility that two such disparate groups could get together may surprise some; however, game theory has shown that cooperation will often arise in non-cooperative situations, if it appears to be in the interest of the parties (Turocy & von Stengel, 2001). Making and breaking temporary alliances is a key component of the information age; those who persist in going it alone likely doom themselves to irrelevance.

Failure to Adequately Plan/Train

The lack of imagination generates damage throughout the entire prevention/re-mediation process, not the least of which occurs in planning and training venues. After all, without vision, meaningful plans cannot be constructed and comprehensive training will not result:

America's homeland defenders faced outward. NORAD itself was barely able to retain any alert bases at all. Its planning scenarios occasionally considered the danger of hijacked aircraft being guided to American targets, but only aircraft that were coming from overseas.... (T)he FAA did not adjust either its own training or training with NORAD to take account of threats other than those experienced in the past (National Commission on Terrorist Attacks Upon the United States, 2004: Executive Summary, 10).

The military was similarly outmaneuvered at Pearl Harbor:

There is great danger of being blinded by the self-evident. Virtually every witness has testified he was surprised at the Japanese attack on Pearl Harbor. This was essentially the result of the fact that just about everybody was blinded or rendered myopic by what seemed to be the self-evident purpose of Japan to attack toward the south (pg. 262).

Failure can be avoided in the long run only by preparation for any eventuality. The record tends to indicate that appraisal of likely enemy movements was

divided into “probabilities” and “possibilities.” Everyone has admitted that an attack by Japan on Pearl Harbor was regarded as at least a possibility. It was felt, however, that a Japanese movement toward the south was a probability. The overall result was to look for the probable move and to take little or no effective precautions to guard against the contingency of the possible action (Joint Committee on the Investigation of the Pearl Harbor Attack, 1946: 263).

Finally, the planning and training issues associated with Hurricanes Katrina and Rita have been well documented:

(T)o best position the nation to prepare for, respond to, and recover from major catastrophes like Hurricane Katrina, there must be strong advance planning, both within and among responder organizations, as well as robust training and exercise programs to test these plans in advance of a real disaster (Walker, 2006: 5).

Myriad books and articles have been written touting the importance of training; this article will not retread that well-worn path. Instead, it will discuss the role that visioning can play in devising realistic events based on probable futures; after all, training only on what has been and not considering what may be does little good.

Futurists spend a great deal of time attempting to devise methods for anticipating future events. Two different, but not necessarily mutually exclusive, schools of thought have emerged in this arena. The first, termed “creating the future,” assumes that individuals have the ability to take certain actions that will result in bringing about the “preferred” future. Others argue that, given the complexity of the universe and man’s inability to anticipate all possible consequences, “creating” may be an unrealistic goal. Rather, individuals should prepare for a whole host of possible futures in order to “manage” whatever comes along. The latter group is heavily invested in scenario planning, which attempts to anticipate many different possibilities and devise strategies to meet each situation.

Whichever way one chooses to proceed, successful implementation of this process is inextricably linked to a lack of imagination. Multiple Nobel Prize winner Linus Pauling once observed that it's "easier to tame a wild idea than to invigorate a dead one" (Pauling, n.d.). Organizations that can't escape timidity and parochialism are doomed to devising training better suited to solving yesterday's problem than to anticipating tomorrow's. All the training in the world (and the author agrees with the official reports that training is woefully underfunded and generally inadequate) won't help matters. To borrow a phrase from the computer world: "garbage in, garbage out."

Failure to Act Decisively

*Should I, after tea and cakes and ices,
Have the strength to force the moment to its crisis?
But though I have wept and fasted, wept and prayed,
Though I have seen my head [grown slightly bald] brought in upon a platter,
I am no prophet—and here's no great matter;
I have seen the moment of my greatness flicker,
And I have seen the eternal Footman hold my coat, and snicker,
And in short, I was afraid.*

T. S. Eliot, from *The Love Song of J. Alfred Prufrock* (1917)

In the 9/11 attacks (as with Pearl Harbor, Rita, and Katrina), many individuals acted bravely and decisively. Indeed, stories abound of brave first responders who saved many, many lives. Yet risk aversion seems to accompany any disaster. Consider the oft-cited Zacarias Moussaoui case in which Minneapolis FBI agents were convinced that Moussaoui was training to hijack an airplane for a possible suicide mission. As they conscientiously attempted to gain information to divine Moussaoui's intentions and confederates, FBI headquarters effectively applied the brakes:

There was substantial disagreement between Minneapolis agents and FBI headquarters as to what Moussaoui was planning to do. In one conversation between a Minneapolis supervisor and a headquarters agent, the latter complained that Minneapolis's FISA request [request to obtain a national security search

warrant] was couched in a manner intended to get people “spun up.” The supervisor replied that was precisely his intent. He said he was “trying to keep someone from taking a plane and crashing it into the World Trade Center.” The headquarters agent replied that this was not going to happen and that they did not know if Moussaoui was a terrorist (National Commission on Terrorist Attacks Upon the United States, 2004: 275).

The military, which should be expected to reward bold, decisive leadership, fared no better at Pearl Harbor:

Perhaps the most signal shortcoming of administration, both at Washington and in Hawaii, was the failure to follow up orders and instructions to insure that they were carried out. The record of all Pearl Harbor proceedings is replete with evidence of this fundamental deficiency in administration... In the dispatch of November 27, 1941, which was to be considered "war warning," Admiral Kimmel was instructed to "execute an appropriate defensive deployment preparatory to carrying out the tasks assigned in WPL-46." Very little was done pursuant to this order with a view to a *defensive* deployment; the Navy Department did nothing to determine what had been done in execution of the order (Joint Committee on the Investigation of the Pearl Harbor Attack, 1946: 255).

Perhaps the most significant failure discovered by the GAO with regard to hurricane response involved confused lines of command and uncertainty with regard to delegated authority. As a result, individuals unaware of their responsibilities were reluctant to act:

(E)vents unfolded both before and immediately after the landfall of Hurricane Katrina that made it clear that governmental entities did not act decisively or quickly enough to determine the catastrophic nature of the incident...Although the DHS Secretary designated a PFO to be the federal government’s representative under the NRP structure and to coordinate the federal response, the efforts of all federal agencies involved in the response remained disjointed because the PFO’s leadership role was unclear. In the absence of timely and decisive action and clear leadership responsibility and accountability, there were multiple chains of command, a myriad of approaches and processes for requesting and providing assistance, and confusion about who should be advised of requests and what resources would be provided within specific time frames (Walker, 2006:4).

Unlike the Prufrock character cited above, in most of the cases under study, the failure to act decisively did not result from cowardice—rather, individuals did not

appreciate the “big picture” and defaulted to overly-cautious decision making (or, in some cases, the decision making that was considered appropriate at the time). In a culture that punishes failure more severely than it rewards success, the safest decision is usually to say “no.” As a result, risk-aversion can become ingrained, as much a part of the corporate culture as the mission statement or logo.

Addressing the Problem

Unfortunately, many of the lessons emerging from the most recent hurricanes in the Gulf are similar to those GAO identified more than a decade ago, in the aftermath of Hurricane Andrew, which leveled much of South Florida in the early 1990s (Walker, 2006: 4)

(W)hen a crisis develops (that is, when the current paradigm fails to adequately resolve lasting problems), the revolutionary step of replacing the entire paradigm by another becomes essential...(Chalmers, 1982: 99).

This chapter is concerned with only three crises; analyses of other events may yield different results, but that seems doubtful. To be sure, there were differences between all three reports. However, the consistent nature of many of the identified problems across all three events is striking – indeed, it is striking enough to suggest that at least part of the problem has to be systemic rather than idiosyncratic.

The recommendations in all three reports addressed the need for greater centralization in the hopes that this would foster greater cooperation between agencies and produce a clearly defined chain-of-command. Indeed, in the months following 9/11, the largest reorganization of the civilian federal government in the history of the United

States produced the Department of Homeland Security (DHS).⁴ This prompts the question: do increased centralization and the creation of large, hierarchical agencies make it more or less likely that the common problems of Pearl Harbor, 9/11, and Hurricanes Rita and Katrina will be solved? Do bureaucracies typically encourage decisive decision making, better communications, cooperation, and imagination? In the next section, Joseph Schafer confronts these and other questions.

Members of the Futures Working Group meet regularly to discuss myriad issues, not the least being the organizational structures best suited for the information age. To be sure, centralization and hierarchies provide benefits (e.g., economies of scale, systems to permit information sharing); however, truly efficient models must provide for the maximum empowerment of decision makers on the ground. That is generally not the case with bureaucracies. We are convinced, though, that such information age systems can be developed (see Cowper, 2005; Levin & Jensen, 2005). Indeed, the remainder of this volume is dedicated to developing just such a model for disaster preparedness and/or response.

Conclusion

The world has shifted. Whereas national security was once under the exclusive control of the military, it is now a joint law enforcement/military issue. According to the late Tip O’Neill (n.d.), “all politics is local.” As the 21st century progresses, terrorism

⁴ Although it is beyond the scope of the present article, a similar reorganization of the military and intelligence communities was mandated by the National Security Act of 1947, which was passed amid controversy in the wake of Pearl Harbor/World War II (see Balogh, Grisinger, and Zelikow, 2002).

may become progressively more local as well. The military and intelligence successes against al Qaeda have caused that organization to fragment, becoming more diffuse and networked by ideas rather than strict chains of command. One need only consider the recent arrests of alleged “homegrown” al Qaeda sympathizers in Canada and Miami to understand that the threat is not just external.

Of course, response to natural disasters has always begun at the local level; that won't change. Both of these situations suggest that the role of local police will increase rather than diminish, especially in areas once thought to be the sole responsibility of “the feds.”⁵ Indeed, it is the Futures Working Group's fervent hope that as models are discussed and plans made, all parties – federal, state, and local – will have an equal seat at the table. In the information age, the coin of the realm is speed and flexibility. Let us hope that we do not have to learn too many more lessons for that message to sink in.

Finally, due to length restrictions of the present volume, an in-depth analysis was not attempted; rather, major points were examined to draw some preliminary conclusions. Given the striking similarities that emerged, a more comprehensive analysis is altogether fitting. To do otherwise would be to consign ourselves to failure upon failure.

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⁵ For example, in its quest to prevent terrorism, the New York City Police Department has detectives stationed in such international locales as Tel Aviv, London, Toronto, Montreal, Singapore and Lyon, France (Sostek, 2004).

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Bureaucratic Structures and Mass Casualty Events

Joseph A. Schafer¹

In the preceding chapter, Carl Jensen reviewed the final reports issued by commissions investigating Pearl Harbor, the 9/11 attacks, and Hurricanes Katrina and Rita. These inquiries paint a grave picture of the ability of government to consistently recognize and understand looming threats and to respond to large-scale critical incidents. We must, of course, recognize that all three documents he reviewed were produced by political entities that may have been seeking to further various ends in the course of investigating and reporting upon each incident. We must further recognize that while governmental efforts were not optimal in these three cases, they may succeed in many other situations. Unfortunately, society often judges government not on its many successes, but upon its glaring failures.

Considering Jensen's analysis, I contend we can find another important message. In all three circumstances he considers, we see that governmental responses (or failures to respond) took place through the dense, bureaucratic structures that so often typify dealing with large-scale problems. The involvement of varied personnel from varied levels of government (local, county, state and federal) as well as disparate agencies creates complex webs of personnel and resources. Bureaucracies are wonderful at providing control and micro-managing employee performance; they are woefully inadequate in dynamic circumstances that require flexibility, adaptability, and rapid decision making on the part of organizations and employees. American government at all levels has typically

¹ My description of police bureaucracies was influenced by an unpublished critique I co-authored with Dr. Clemens Bartollas; I would be remiss if I did not acknowledge his contributions to my thoughts on this subject.

embraced hierarchical bureaucratic structures, believing them to be the optimal and “safest” way to manage personnel and resources in these complex circumstances. In this chapter, I consider some of the problems with reliance on bureaucracy as an operational structure when large-scale events are taking place. Essays appearing later in this volume (particularly those by Olligschlaeger and Myers) will offer alternatives to the “business as usual” model that we often find to be so ineffective in American police agencies and government as a whole.

Police Departments as Bureaucratic Organizations

Bureaucracies were originally developed to help private businesses maximize profits and to regulate the actions of employees. By creating efficient and methodical social organizations, bureaucracies were supposed to streamline industrial production. The idea of bureaucracy is based on rationalism, the same principle that gave rise to modern science and greater understandings of the physical and biological worlds. If human social organization could approach the efficiency of a machine, theorists reasoned, profits and the acquisition of capital could be maximized. Bureaucracies focus on controlling employees and structuring organizations so that jobs are performed in a routine, orderly, and predictable fashion; discretion is minimized and decision-making authority is placed high within the organization. Advocates believe that when it is properly executed, a bureaucracy is the best way to achieve a high degree of organizational efficiency and accuracy (Gerth & Mills, 1958).

The origins of police agencies as bureaucratic organizations go back to the emergence of the police professionalism movement. Beginning in the 1880s and through

the mid-20th century, progressive police administrators sought bureaucratized and rationalized police departments. The professionalism movement began in response to an era of rampant patronage, corruption, and inefficacy in American government, particularly at the municipal level. Social reformers were seeking new ways to structure governmental services to ensure all citizens had equal access to the rights and services provided by their tax dollars. The progressive police leaders of this era believed bureaucracy would provide the control needed to eliminate the corruption and undue political influence that dominated policing at the time (Walker, 1977). Bureaucratic structures and processes would provide control over employees, ensure consistency in job performance and service delivery, and decouple officers and departments from undue community influences.

O.W. Wilson did as much as anyone to transform the structure and operation of American police organizations. Wilson worked with August Vollmer in Berkeley, California; he also served as Chief of Police in Wichita, Kansas, and Chicago, Illinois, and was Dean of the School of Criminology at the University of California, Berkeley. In the 1930s and 1940s, Wilson undertook a study of employees and organizations; at the time, the best minds and organizations were still advocating the use of bureaucratic models. Wilson's studies lead him to write *Police Administration*, a guide for how police organizations should be structured and should operate (Wilson, 1950). For decades, this text was one of the most influential works shaping how police leaders thought about their roles, responsibilities, and surroundings. Even today, the legacy of the text is evident through a simple examination of the organizational chart for virtually any American police department. Wilson was particularly focused on how police departments were

structured and how their internal operations were conducted; he emphasized command, control, authority, and responsibility (Wilson, 1950). This bureaucratic model envisioned the police as professional servants who were detached from the community they served (Manning, 1997). Organizational structures were to be clearly defined and would control the actions of employees. Hierarchy, span of control, chain of command, consistency in rules, and the formulation of explicit policies and procedures all flowed from this thinking. Discretion by low-level employees was tightly controlled. A central communication center directed how and where officers were to be deployed. Formal policies dictated officer responses to any given situation. The bureaucratic model advocated by Wilson and others continues to dominate policing and government services in the current era.

Problems with Police Bureaucracies in Action

The preceding section describes how bureaucratic police organizations operated, at least on paper. The application of bureaucratic principles to policing offers some important virtues, particularly in terms of control over decision making and employee discretion.² These virtues, however, generate a number of consequences that influence police operations, personnel, and community relations, perhaps in negative ways. In

² This point could, of course, be argued to the contrary. Bureaucracy does grant command and control in structured, spatially finite work places (e.g., factories). The level of direct supervision in policing has always been quite low compared to the direct supervision in the military and private-sector production facilities. Because of this, some have suggested that while police organizations appear to control the discretion and decision-making of their employees, the reality is that officers have considerable freedom in deciding when and how to perform their duties. See generally, Michael Brown, *Working the Streets* (New York: Russell Sage Foundation, 1988).

order to understand the problems police bureaucracies generate in responding to mass casualty events, it is first necessary to discuss some of the general problems bureaucracy creates in normal police operations.

First, police organizations are highly bureaucratic and formalized. Despite the emergence of alternative views on how to structure and operate police departments, agencies still tend to use variations on O.W. Wilson's model for police administration. Except in the smallest of police departments, there is a marked distance between front-line personnel and supervisors; there are extensive policies and procedures governing officer behavior and conduct; officers must often seek approval before they can make very basic decisions; and the emphasis is on organizational control rather than organizational efficacy. While these characteristics might work well in routine, predictable, and fixed work environments, policing work environments would rarely be described in such terms.

Second, police organizations tend to have poor internal and external communications, particularly as they become larger. Routing information via the chain of command means that messages and requests are delayed, lost, misplaced, and ignored. It takes considerable time for officers to receive feedback on their requests. External communication also suffers because too often we place police in the role of experts on matters of crime and community order (Manning, 1978). Consequently, agencies sometimes restrict the information that they give to the public.³ These restrictions are

³ At times, such restrictions can extend to denying access to public information maintained by the police, such as records of concealed weapons permits, police incident records, and documents detailing the expenditure of public funds by police departments. See "Open Records Check by Iowa Newspapers Finds Some Improvement, Some Backsliding" *Associated Press State & Local Wire* (March 19, 2005).

usually intended to protect on-going investigations. The tendency to hoard information can, however, permeate a police agency, resulting in citizens not being provided adequate information to protect themselves and their families. In a mass casualty event, restricting the information flow to the public can create hysteria, fear, looting, panic, or inappropriate responses (e.g., failing to evacuate) on the part of the public.

Third, police organizations tend to make decisions and changes very slowly. Bureaucratic organizations are meant to be rigid and predictable, not flexible and adaptable to changing circumstances. Unfortunately, police organizations exist in highly dynamic environments: law, community structures, public expectations, department personnel, departmental budgets, and beliefs about the best way to police communities are subject to constant change. In order to be effective, police departments need to be able to adapt to these and other changes. Unfortunately, police departments have been historically poor at adapting to changes. Some have likened the process of changing police departments to “bending granite” (Guyot, 1979).

Fourth, police organizations tend to operate with inefficiency and redundancy. Bureaucracies work well in highly predictable and routine organizational environments; police work does not fit these criteria. Problems arise when bureaucracies are applied in dynamic and chaotic environments. For example, the author is familiar with an agency in which street-level drug markets were independently investigated and targeted by patrol officers, the agency's vice unit, officers assigned to a multi-jurisdictional drug task force, and detectives (homicide and crimes against persons) whose investigations intersected with the community's drug market. All of these groups were attempting to resolve the same problem, but none of them were coordinating their efforts. As a result, different

units had different pieces of the puzzle; regrettably, they were unable to put these pieces together to develop a comprehensive understanding and response to that area's crime and drug problem. Such situations are common in bureaucratic police organizations and are reminiscent of the “failure to connect the dots” criticisms surrounding the lead-up to the 9/11 attacks.

Fifth, police culture and informal working relationships are extremely important. Following the chain of command and designated channels for acquiring information and receiving permission are time-consuming, frustrating, and inefficient. Experienced officers will rely on contacts they have developed throughout their organization (police academy classmates, former partners, etc.), as well as other organizations (police and otherwise), to circumvent the chain of command and formal communication channels. This does serve the ultimate objective of “getting the job done,” it also raises a new set of concerns. In particular, police organizations do not operate in a manner that is as coordinated, controlled, rational, and predictable as their organizational structure would imply. Informal relationships can be highly functional, but they are not institutionalized or formally evident; their operation can be haphazard, random, and result in myriad problems.

Sixth, the first-line supervisors (sergeants and lieutenants) play a crucial role within the organization. The nature of policing (working around-the-clock, on weekends and holidays, and across large geographic areas) means the chief executive must rely on these first-line supervisors to ensure that policies and procedures are being followed. The police chief is ultimately responsible for their organization, but cannot be everywhere at all times. As a result, sergeants and lieutenants play in an extremely influential role in

dictating how units within the organization actually operate (Trojanowicz, 1980). All too often, this situation is overlooked. Front-line supervisors can be a powerful resource for initiating organizational change, while overlooking their role can lead to critical failures.

Seventh, police bureaucracy is a source of stress and aggravation for police officers. *Stress research in policing suggests officers are more stressed by their organization than they are by the dangers of their job or the difficulties their job creates for their personal life.* Because bureaucracies tend to ignore the needs, motivations, and ambitions of employees, bureaucracies are notorious for generating employee dissatisfaction (Baker, 1997; Buzawa, 1984; Zhao, Thurman, & Hi, 1996). In the context of mass casualty events, this dissatisfaction exacerbates the stresses and personal complications officers are already enduring (see Gardner's chapter later in this volume).

Bureaucracy in Mass Casualty Events

In many ways, bureaucratic approaches to policing were once highly rational and desirable. Bureaucracy provided the perceptions of control over police agencies, employees, and services, a commodity that was vital during the early 20th century. As these approaches became institutionalized, police leaders became conditioned (beginning as rookie police officers) to see bureaucracy as necessary, if not virtuous, in American policing. Beginning in the 1960s, civil litigation rights were expanded, providing prospective plaintiffs with clear, legal paths to sue officers and departments. This development further motivated many police leaders and city administrators to embrace bureaucracy. For these and other reasons, bureaucratic principles and approaches continue to dominate American policing, despite a number of prominent limitations and

shortcomings. This section considers some of the more prominent concerns surrounding the application of bureaucratic principles in policing critical incidents and responding to mass casualty events.

First, flexibility, adaptability, customized responses, innovation, and situationally-derived outcomes are not encouraged under the theory of police bureaucracy, yet these are all typically positive attributes in critical situations the police confront. Following detailed rules and procedures is not always the best way for officers to “get the job done”.⁴ Clear lines of command, control, and authority are often needed to organize a safe and effective resolution. Problems arise, however, when the nature of a situation hampers communication between supervisor and subordinate. Employees accustomed to following explicit orders and policies become dependent on external input. These employees end up with limited skills and experiences in developing and implementing appropriate solutions in the absence of direction and guidance; officers are conditioned to do as they are told.

To be sure, some officers are quite adept at working independently in situations of duress; however, when there is a widespread communication failure, responses are likely to vary in nature and efficacy. When communication lines are interrupted, action can flounder. The Hurricane Katrina response is a prime example of how officers may struggle to cope when cut off from communications and command information. Media

⁴ To be clear, this is not to imply officers need to break the law to perform their duties. Rather, agency policies and procedures may be decidedly ill suited for guiding an officer toward the quick, efficient, and appropriate performance of their duties. At the very least, this can cause frustration and delays (for officers and citizens) in providing vital services. In extreme situations, this can compromise an officer’s ability to protect persons and property.

accounts of the police response to this disaster do not paint glowing pictures.⁵ Beyond possible problems in the New Orleans Police Department, there are clear and consistent reports of problems in the overall Katrina response across all levels of government.⁶ This should not be viewed as an indictment of all officers, agencies, or responses. Many officers stayed on duty and performed admirably under the circumstances. The failures of Katrina were more about the inadequacies of structures and systems than about failures of individual responders.

The intent of this essay is not to rehash the facts and allegations surrounding the Katrina response. Nonetheless, a very brief consideration of the federal government's self-critique is instructive. In the *Failure of Initiative* report, U.S. House of Representatives officials noted:

Response plans at all levels of government lacked flexibility and adaptability. Inflexible procedures often delayed the response. Officials at all levels seemed to be waiting for the disaster that fit their plans, rather than planning and building scalable capacities to meet whatever Mother Nature threw at them. We again encountered the risk-averse culture that pervades big government, and again recognized the need for organizations as agile and responsive as the 21st century world in which we live.⁷

Command and control was impaired at all levels, delaying relief. Lack of communications and situational awareness paralyzed command and control.⁸

⁵ Such accounts should be taken with due skepticism. These stories may contain errors that unfairly cast police in an unjustly negative (or positive) light. See Susannah Rosenblatt and James Rainey (2005, Sept 27) "Katrina Rumors" *Los Angeles Times*, <http://www.latimes.com/news/printedition/asection/la-na-rumors27sep27,0,5536446.story?page=1&track=hpmostemailedlink>.

⁶ See *A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for the Response to Hurricane Katrina*, http://katrina.house.gov/full_katrina_report.htm, which was released in February 2006.

⁷ *Failure of Initiative*, pp. 1-2.

⁸ *Failure of Initiative*, p. 3.

The collapse of local law enforcement and lack of effective public communications led to civil unrest and further delayed relief. The New Orleans Police Department was ill-prepared for continuity of operations and lost almost all effectiveness.⁹

Despite recognizing that the existing and dominant disaster response paradigms were inflexible (i.e., waiting for a disaster that fits existing plans, rather than adapting plans to fit the disaster at hand), these same authors seem to believe the solution is “better” bureaucracy, rather than the exploration of alternative structural models. The report focuses extensively on how circumstances eroded “command and control” in New Orleans, without questioning whether operational command and control (in the bureaucratic sense) were truly necessary to enact an effective and efficient response.

Second, bureaucratic communication systems tend to function in a slow and inefficient manner. This is not a function of communication technology; rather, it is produced by the numerous mechanisms and steps associated with seeking and obtaining formal permission to act. Traditionally, the chain of command has to be obeyed to secure authorization for a wide range of actions. Frontline personnel are empowered with some rights, but more consequential actions typically require authorization from higher levels of the organization’s command system. From a liability perspective, this is an important check on police conduct; authorization may have a positive effect by introducing a

⁹ *Failure of Initiative*, p. 4. To be clear, I do not provide this quote to be critical of NOPD, its leaders, or its personnel. Like virtually every American police agency has a bureaucratic structure and is beholden to external funding sources. Under such conditions, the agency and its officers, by and large, did a laudable job dealing with a disaster of historic proportions with inadequate resources, tools, training, and organizational structures. Any agency confronting a disaster of similar magnitude would suffer the same problems.

detached observer into a decision making cycle. From a pragmatic standpoint, important opportunities can be missed as frontline officers await permission and instruction.¹⁰

In recent decades, agencies have ameliorated this problem with the establishment of more formalized strategies for responding to common types of mass casualty events. These plans often empower lower-level supervisors with the right to make critical choices. At the same time, many agencies still lack plans that would provide officers with guidance about their roles and responsibilities during more chaotic, wide-spread, and long-term situations. Agencies have established plans, authority, and responsibility for the “routine” situations confronted by tactical units. Many, however, may lack such mechanisms to tell *all* employees where to go, what to do, how to do it, and what authority they have to improvise responses when there is a widespread disruption of command and communication channels. In New Orleans, this meant some officers abandoned their duties while others continued to serve. Many officers improvised and performed to the best of their abilities under seemingly impossible conditions; others allegedly seized the opportunity to take part in widespread looting. Many officers interviewed by the media expressed frustration, confusion, and uncertainty over basic aspects of their responsibilities (who, what, where, why, when, and how). Regrettably, New Orleans was simply the “poster child” for an ineffective and disorganized response;

¹⁰ The author directly observed a riot situation in a college community that involved several thousand youth. Local departments quickly mobilized personnel and equipment to regain control of a destructive situation. When a response effort was in place, the chief of police vested with the final authority to deploy officers could not be located in the midst of the chaos and did not answer contact efforts by radio. The response was delayed 30 minutes; during this time, assaults were taking place, property was being damaged, and additional youth were joining the melee. Because no one else had the authority to issue “marching orders,” the response was delayed until the chief re-established contact and officers might have confronted a more difficult situation.

similar results would likely be witnessed in most communities.¹¹ In future incidents, the criticisms leveled at the New Orleans Police Department might actually serve as a disincentive against creative, independent action by officers. Fearing their actions might generate criticism and possibly discipline, officers may be even further encouraged to await duty orders.

Third, problem- and community-oriented policing advocates have illustrated that agencies have relied too much on formal policies, procedures, and structures. Officers are expected to be obedient conformists; innovation, creativity, flexibility, and analysis are not encouraged. In reality, police officers have often excelled in developing situationally-appropriate responses to the problems they confront, even when such efforts were contrary to policy. The nature of policing allows and even encourages such innovation. The concern here is not that officers lack the ability to operate outside of rigid organizational structures and guidance (many can and will excel). The problem is that these skills are not formally encouraged, much less developed, within many police agencies. Some officers can improvise and innovate quite well; others have become conditioned to await and then execute orders from superiors. Large-scale critical incidents create problems for those in the latter grouping.

¹¹ My intent here is not to vilify the New Orleans PD or its officers. Ample evidence suggests that most officers did the very best they could in the face of a terrible disaster that effected everyone, including officers and city leaders. My contention is that bureaucratic models for disaster response have inherent problems that can produce disastrous and fatal outcomes. The inadequate Katrina response is replete with examples of how red tape, disrupted chains of command, overly narrow role orientations (i.e., “that-is-not-my-responsibility” thinking), centralized decision making, and communication errors can exacerbate the myriad problems associated with a large-scale, prolonged disaster.

Adherence to bureaucratic principles has led to a number of complaints issued against police agencies. The examples Jensen provides, while describing atypical events, illustrate routine challenges that are issued against what are normal business practices in most American police agencies. Police departments have been accused of failing to respond creatively to a changing social environment, of being unresponsive and closed to the citizens they serve, and of failing to develop the talents of the rank and file police officer. Right or wrong, bureaucracies are often viewed in a negative manner. Most of us have encountered the frustration of “red tape,” the process by which a seemingly simple task cannot be accomplished without great effort. Although the average person may unfairly assume that *all* governmental bureaucracy is inefficient, impersonal, and cumbersome, these images are generally apt descriptions, particularly as agencies (not just police departments) become larger in size. On the other hand, despite the emergence of new ideas for how police organizations might operate and be structured, it is difficult to move away from some elements of the bureaucratic model (Maguire, 1997). Although we often hear complaints about bureaucracy, police departments have not developed better alternative organizational systems. Until another way of organizing the police is proven to be better, bureaucracy will continue to dominate American police organizations.

Conclusions

Despite their possible virtues, bureaucratic structures are fraught with serious limitations that make them decidedly less than ideal in police organizations and in governmental responses to mass casualty, large-scale, and protracted incidents. The problem has less to do with the theoretical viability of bureaucratic models and more to

do with their application in chaotic, unstable, evolving circumstances. Critiquing bureaucracy is well-traveled ground; established problems have been described *ad nauseam*, including in this chapter. Despite these circumstances, large organizations, especially those affiliated with government and public service, continue to cling to this problematic model. The reason for this unfortunate situation has to do with the preservation of order, control, deniability, and a false sense of predictability; it has very little to do with achieving effective outcomes.

Given this critique, what is the alternative? How can agencies structure personnel and resources in order to form the best response to chaos? The answer, regrettably, is unclear. We know other structural patterns work well in small and medium-sized agencies. Despite claiming to be bureaucratic, many smaller agencies have been operating in a more adaptable, informal, and effective manner for decades. Will these models work in larger agencies; can improved operations be achieved without compromising other concerns? If so, how? In the following chapters, Richard Myers, Thomas Cowper, and Andreas Olligschlaeger offer further insight to begin answering these questions.

We are finally in an era when technology, training, and experience may allow us to develop more effective ways of organizing large volumes of personnel and resources in uncertain environments. Networked structures have the capacity to improve response efforts by empowering personnel to make decisions and take action within their environments. The technological advances that can facilitate networked operations may also enable enhanced computer modeling and testing to better determine the viability of these approaches in actual operation. The challenge for government and emergency

service agencies is to devote the resources and energies to better determine how to effectively respond to the mass casualty events of the future. We cannot predict when, where, or what these events will look like, yet we can create empowered, educated, prepared responders who have the capacity to provide the care and intervention necessary to improve future responses.

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Beyond Hierarchies: Toward a Universal Crisis Network

Andreas Olligschlaeger

Introduction

When response to natural or man-made disasters is required, there is no ideal world. Each situation is unique, and even the best-laid plans often do not work as envisioned. While it is true that many emergency situations are routine, the events of September 11th and Hurricane Katrina vividly bring home the realization that emergency responders of all types are often confronted with situations that have never been encountered and, in some cases, not even imagined.

Inevitably, disasters will occur that expose weaknesses within the disaster response system. Also inevitably, the media, the public and politicians alike will look for someone or something to blame. A typical response is to replace one or more key persons within the system, perhaps create a new agency, and to study ways in which future similar disasters can be better responded to. This chapter, however, is not about placing blame on individuals or agencies. Rather, the focus of this section is on the system itself. People are human beings and will make mistakes, no matter how well trained or competent they are, but even the most competent person is bound to fail if the system cannot support his or her efforts.

Government in general and emergency response in particular tends to be organized into hierarchies. A typical example of a hierarchy is the pyramid-shaped chain of command within a police agency such as the example shown in Figure 1: each group within a hierarchy answers to one or more superiors above it (although typically upward links are limited to one, such as a commander or a sergeant) and is linked to one or more

subordinate groups below. Hierarchies can also be geographical, such as precincts or patrol sectors, thus adding a third dimension. There are many who argue that hierarchical systems are ill suited for policing, and even less so for large scale disaster response. Their argument is centered on the notion that hierarchies are inherently flawed because they lack the flexibility to respond to large-scale disasters and are too vulnerable to failure due to institutionalized bottlenecks within the system. Such vulnerabilities are especially important in the Information Age, when rapidly changing situations result in ever-faster flows of data that need to be acted on in a timely manner. The breakdowns in communication and the lack of response by government agencies during Hurricane Katrina have been well documented both in the media as well by government panels.

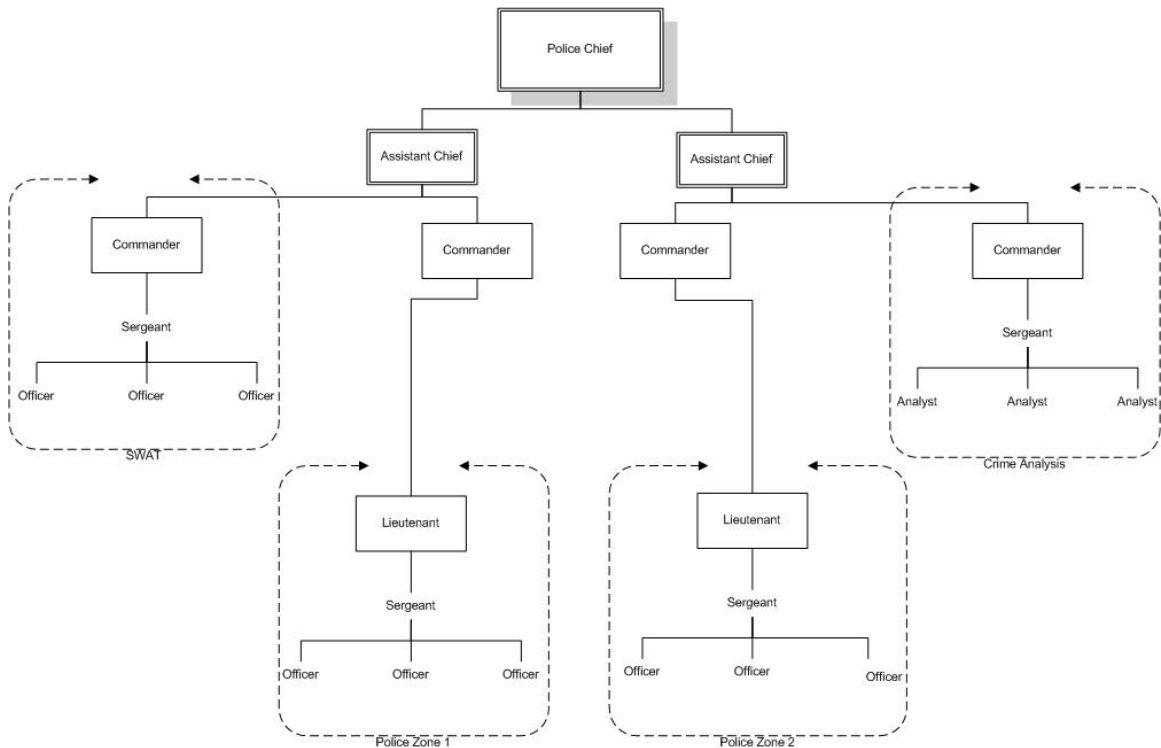


Figure 1: Portions of a Hierarchy in a Medium Sized Police Department

This chapter examines an alternative structure for crisis management, one that is network centric rather than hierarchical. While network-based organizational structures are certainly nothing new in other fields, it appears that their application is new to emergency management. The author hopes to show that a network centric organizational structure could have a dramatic effect on the efficiency and speed with which emergency management authorities can respond to major catastrophes. It should be noted that this chapter is not intended to be an exhaustive discussion of the subject. Instead, it is intended to provide a brief overview of what network centric emergency management and disaster response might look like.

Hierarchies

Traditional hierarchical organizations as we know them today in government are inherently a product of the Industrial Revolution. In the book “The Visible Hand,” which coined the term “Chandlerism,” Alfred D. Chandler (1997) argues that the success of 20th century manufacturing in the United States was due to large, vertically integrated and hierarchically managed enterprises (Lamoreaux et al, 2003). The reasoning, according to Chandler, was that the very hierarchy of larger firms allowed for a more efficient coordination of raw materials and goods, and, by extension, the provision of superior products and services. The primary driving forces behind this hierarchy were the introductions of smaller hierarchies of managers to break down the process into subunits, thus allowing them to supervise and control all aspects of the manufacturing process themselves. By contrast, traditional smaller companies had to rely on outside factors and the market for functions such as the supply of raw materials and marketing products. A

good example of a typical Chandlerian firm was Ford's River Rouge automobile manufacturing plant. The plant handled everything from raw materials to research and design to finished products, thus exerting complete control over the entire manufacturing process without having to rely on outside labor or suppliers.

Until the latter part of the 20th century, large hierarchical organizations appeared to function quite well, but by the 1980s classic Chandlerian firms were losing business to companies that were more specialized. Another feature of more successful companies was horizontal integration. Horizontal integration refers to the establishment of smaller subsidiaries that manufacture different products or cater to specific geographic areas. While the overall hierarchy remains intact, operations are spread out geographically, thus making the company less vulnerable to local economic factors. Good examples of horizontal integration in law enforcement are police zones, or precincts, each of which is responsible for a certain area, yet still answers to the police hierarchy, as well as specialized units such as SWAT teams (see Figure 1).

In the many attempts at explaining the failure of hierarchies, the most prevalent answer is that with the emergence of information systems, rapid access to increasing amounts of information quickly overwhelmed those organizations that did not adapt to the Information Age. Norton and Lester (1996, p.25) explain, "until the advent of modern information technology, an organization's structure was a relatively inflexible hierarchical channel through which information flowed, or sometimes trickled, dependent upon one's position in the channel." Norton and Lester further point out that while modern information technology such as email, shared data access, and electronic bulletin boards has allowed members of traditional organizations to bypass hierarchies to some

extent, information technology by itself cannot mitigate the inherent shortcomings of vertical hierarchies.

In figure 1, the vertical hierarchy consists of the connections between the officers up to the police chief. Bypassing the vertical hierarchy in this instance, for example, might mean a sergeant sending an email to an assistant chief to discuss a situation that in the absence of email would have meant going through two or more levels in the hierarchy.

It can be argued that the very structure of hierarchical organizations is not conducive to the free flow of information. This is especially the case in a command and control environment, where all information must pass through formal channels, is tightly controlled, where any attempt to bypass formal channels is frowned upon and infractions by personnel more often than not result in reprimands. In fact, traditional command and control structures within emergency management in particular are “frequently marked by competition, rivalry for public attention and resources, disrupted communications, differing priorities, differential leadership styles, cultural differences, and contradictory observations, all of which generate delays in response” (Burkle & Hayden, 2001, p.88). While in the past this traditional organizational structure has worked best when applied to routine emergency situations, it is clear that it cannot function in unusual and large-scale disasters such as Hurricane Katrina because the very structure of the organization stifles the creativity and flexibility required to provide an adequate response in such situations (Kendra & Wachtendorf, 2003).

Most authors who examine alternative organizational structures to vertical hierarchies suggest a horizontal approach. Horizontal organizations differ from vertical

structures in a number of factors. They are not as dependent on an organizational chart, have a more decentralized system of authority, require more flexibility on the part of participants and are more conducive to multi-agency interaction and cooperation. More importantly, though, they are functionally dependent on information sharing. As such they are in theory better able to adapt to quickly-changing environments. The establishment of the Department of Homeland Security (DHS) was an attempt by the Bush administration to implement a more horizontal organizational structure (DeCorla-Souza, 2002). Like any attempt at change in government, however, the formation of DHS was fraught with resistance to change and turf battles.

A horizontal structure most certainly represents an improvement over a vertical structure, but it is nevertheless still a hierarchy and inherits many of the issues associated with vertical hierarchies. No system is perfect, but what is needed is a 21st century solution that can more readily adapt to large-scale disasters.

A Network Centric Approach

In today's world, information and creativity are the driving forces behind any organization. An organization that is to survive and function must be able to collect, process, analyze and act on information as quickly and as effectively as possible, allocating resources as they are needed and ensuring that adequate supplies are on hand. This is especially true in light of the fact that we live in a world of accelerating technological change, a world where all aspects of humanity are changing at an exponential rate (Kurzweil, 2001). Traditional vertical hierarchies and even more modern horizontal hierarchies will be increasingly unable to cope with an ever faster changing

environment because decision making is too centralized and there are too many bottlenecks - or stovepipes - each of which can cause a system-wide failure in the event of human error or misinterpretation of data.

New technologies have emerged over the past ten to fifteen years that have rendered traditional means of communication and information gathering obsolete. By extension, this also means that traditional methods of decision-making will eventually become obsolete. We are already experiencing this on a smaller scale. Whereas 15 years ago decision makers had to turn to multiple human sources for information support, today's technology can provide far greater amounts of information at increased speeds in a more reliable fashion. The importance of human interaction and cooperation, however, cannot be discounted because it is the imagination and creativity of humans that ultimately leads to change. Thus the role of and manner in which humans cooperate in future emergencies must also change in order to nourish and reward, not stifle, creativity.

Modern computing algorithms in data mining, expert systems, artificial intelligence, and operations research allow for split-second decision making, which is precisely what is needed in future responses to large scale disasters. While these algorithms can greatly increase the timeliness of responses to quickly changing situations, a hierarchy can render their effectiveness moot. For instance, based on detailed nationwide knowledge of the location and extent of existing resources, a computer algorithm might recommend the redeployment of resources in response to an unanticipated change of events in order to mitigate serious consequences. If this recommendation is not acted upon immediately, for example because the action has to be

approved by several levels of an organizational hierarchy, then the delayed action might result in more serious consequences.

Cowper (2005) first suggested the use of network centric models for policing. Realizing that police organizations must progress from the Industrial Age system of organized control to a less structured and more dynamic form of policing, Cowper argues that network centric policing would put law enforcement into a better position to handle accelerating change and the challenges that law enforcement is likely to face in the next decades.

The idea of network centric operations has also been suggested for emergency and disaster management and response, although outside of the military establishment only a handful of authors have used the actual term. Aedo et al. (2002) suggest that the central problem to past disaster responses is a unidirectional and asynchronous flow of information between agencies involved in the response, resulting in lack of coordination and poor decisions. Scalem et al. (2004) outline a Decentralized Disaster Management Information Network (DDMIN) that aims at addressing the need for matching available resources with needs by deploying multiple mobile agents, mobile networking and real time operations. Carafano (2005, p.6) proposes the use of a network centric “system of systems” which he argues is especially well suited for responding to large-scale attacks or disasters. In particular, network centric emergency response operations would “generate increased operational effectiveness by networking sensors, decision makers, and emergency responders to achieve shared awareness, increased speed of command, and greater efficiency”. Finally, Allenby and Fink (2005) point out that network centric

organizations would be more resilient in instances of major disasters than those with a traditional hierarchical structure.

But what would a network centric system for emergency management and disaster response look like? Well, that is a very good question. Even the literature on network centric warfare does not always agree on what exactly constitutes a network. However, there does seem to be general consensus on one issue: networks consist of at least three distinct layers: sensors (or cognitive nodes), information processors (analytical nodes), and actors (action nodes). Computer science literature offers a more rigorous description of network centric architectures, including mathematical depictions of relationships between nodes and layers. One such example can be found in Yang et al. (2005), who examine the deployment of multi-agent systems within complex adaptive systems such as network centric architectures.

Whatever the final architecture, there is broad agreement on the advantages of network centric systems in general and for emergency management in particular. There is also agreement that many of the components of a network centric architecture for emergency management and disaster response already exist in the National Incident Management System (NIMS) and the Incident Command Structure (ICS).

Network Components

The most basic component of any network is a node. A node is not necessarily a single actor or group of actors, but can in and of itself also be a subnet of nodes. There are three basic types of nodes, each corresponding to a layer in the network:

- Sensor nodes function as the primary gatherers and disseminators of raw information during an emerging disaster. Sensor nodes can consist of small units of first responders, unmanned aerial vehicles (UAVs) that are deployed in situations deemed too hazardous for humans, or units of individuals. The primary goal of sensor nodes is to set up communications and provide sensory input to the network, much in the way that officers first responding to a bomb threat would assess the situation and communicate with secondary responders.
- Analytical nodes collect process and analyze all information that comes across the network from the heart of the network. Analytical nodes can consist of units of analysts or automated processing units that employ state of the art operations research, data mining, and other algorithms to provide situational awareness and suggest solutions to complex problems. Crime analysis and intelligence units would fall into this category.
- Actor nodes are responders and can consist of military units, local police agencies, warehouses, trucks and other equipment, hospital ships, search and rescue teams, and any other response unit that is dispatched by decision making nodes within the network. Note that this could include existing NIMS or ICS components such as an Area Command or Unified Command.

Regardless of the layer it belongs to, a node can also be specialized, such as a search and rescue team, or generalized, such as a police patrol unit. In addition, nodes can be either mobile or stationary, and the function of a node can change over time.

Perhaps the most important network component is the information backbone because without real time information flow and processing the network cannot function.

Each node is connected to one or more nodes via the information backbone. The more other nodes a node is connected to, the less prone it and the network as a whole are to communications breakdown or failure. Connections run both between layers as well as between nodes that are in the same layer, thus providing redundant connectivity. All nodes within a network are governed by a well-defined set of rules and constraints, and no single node is in charge of all other nodes.

Network Organization

Like any other organizational structure, the goal of network centric organizations is to exhibit maximum efficiency under a variety of conditions. The main difference between network centric and hierarchical organizations is that where functions and relationships between elements in hierarchies are predetermined, network centric organizations are self-adapting and self-organizing. This is a very important distinction and should be examined in more detail because it is the primary reason that network centric organizations are more efficient than hierarchies in complex and rapidly changing situations.

The idea of self-organizing networks has been around for quite some time. Herbert Simon's early research in the 1960s recognized that systems could produce emergent self-organizing behavior even though computer networks and modern computing algorithms did not exist at the time (Agre, 2003). Continuing into the late 20th century, most disciplines did not seriously investigate the idea, although some notable exceptions were the fields of physics, artificial intelligence, computer science, and psychology. Engineers were preoccupied with building hierarchy-based complex systems

whose overall functioning could be predicted well in advance and whose components could be modified to produce additional functionality when the need arose. By contrast, self-organizing networks are not complex systems. They consist of relatively simple components, but exhibit complex behavior that cannot be predicted a priori. For most engineers, a system whose behavior cannot be predicted from the functionality of its components is not considered to be well engineered (Agre, 2003). But from a disaster response perspective, therein lies the dilemma: *natural and man made disasters are so unique and so complex that it is virtually impossible to predict all possible behaviors that a system will have to exhibit in order to meet every conceivable situation that might arise during an emergency.* Indeed, it is often argued that emergency management organizations are always planning for the previous disaster.

Research shows that networks are uniquely capable of adapting and responding to very complex situations. It has long been known that simple rules within self-organizing systems can result in enormously complex behavior in response to complex situations. There are many examples of networks, including fractal geometry, artificial neural networks, and cellular automata that have proven to be very successful at self-organizing and providing optimal or near-optimal solutions to very complex problems, even though on the surface their behavior might appear chaotic. Moreover, such networks are very quick to adapt to changing complexities (what is needed during large scale disasters), which is not possible within a hierarchy.

In their purest form, networks act completely independently, i.e. without any sort of human intervention or supervision. In a command and control situation, this is clearly unacceptable because unlike purely mathematical networks, networks of human actors do

not always stick to the rules, and they inadvertently make mistakes. This means that network centric disaster management requires some command structure, albeit not as strict or comprehensive as that found in traditional hierarchies. So, to paraphrase Moffat (2003), network centric disaster response could be defined as networks that, within a broad intent and constraints known to all nodes, local nodes self-synchronize under an overall mission command in order to achieve the desired response. Furthermore, according to Moffat:

This process is enabled by the ability of the forces involved to robustly network. We can describe such a system as loosely coupled to capture the local freedom available to the units to prosecute their mission within an awareness of the overall intent and constraints imposed by higher-level command. This also emphasizes the looser correlation and nonsynchronous relationship between inputs to the system (e.g., sensor reports) and outputs from the system (e.g., orders). In this process, information is transformed into “shared awareness”, which is available to all. This leads to units linking up with other units, which are either local in a physical sense or local through (for example) an information grid or Intranet (self-synchronization). This in turn leads to emergent behavior in the battlespace. (49)

Moffat’s description nicely summarizes the way in which information forms the basis of shared awareness, self-synchronization, and the resultant behavior of the network in response to sensory inputs.

Training

Most networks require some form of training in order to exhibit optimum behavior. For purely mathematical networks, this is usually done via simulations such as Monte Carlo modeling (a method for simulating real life events) or supervised training. Much of network centric disaster response would involve the use of operations research and other algorithms for manpower and resource allocation. Testing the network as well

as training human elements is crucial in order to assess its capability to respond in an adequate and timely fashion during real disasters. Very little has been written about this subject for network centric disaster response, but a large amount of literature is available for network centric warfare applications. In general, network training occurs as a result of real world experiences as well as virtual scenarios. The goal of training is to build a knowledge and scenario base that can be applied during real emergencies. An example of a training scenario from a naval perspective can be found in Hutchins et al. (2001).

Conclusion

There is no doubt that the nation's system of multiple hierarchy response to mass casualty events has proven less than successful over the past years, in spite of the fact that considerable effort and resources have been expended to improve the system since the events of September 11th, 2001. This paper argues that the main reason for the lack of success is not to be found at the individual or political level, but rather lies in the hierarchical structure of disaster response. While traditional emergency response hierarchies can be effective in small-scale disasters, they become more inefficient as the scope of disasters and the number of hierarchies involved increase. In particular, hierarchies simply are not able to process and act upon large volumes of information in a timely manner.

Network centric operations are one alternative structure that has proven successful in military applications. Arguably, military battlefield situations can be just as chaotic as emergency operations and require even faster response times. Network centric operations have also proven to be successful in economic terms. Many modern firms employ

network centric concepts in daily operations that are better able to handle inventories and are more responsive to fluctuations in market demand and changing technology.

While the advantages of network centric operations are quite clear, the question is whether it is reasonable to expect to see them implemented in some form or another in the area of emergency management and disaster response within the next ten to fifteen years. Some of the elements are already in place, and much, if not most, of the technology is also in place. Most importantly, however, is the question: can we afford not to implement it before the next major disaster occurs?

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Net-Centric Crisis Response

Richard Myers & Thomas Cowper

The chapter by Andreas Olligschlaeger makes a compelling argument about shifting disaster response from hierarchical to networked structures. This chapter will explore the current elements of the National Incident Management System (NIMS), its Incident Command System (ICS), and how these systems represent hierarchical structure. Further analysis will explore which, if any, elements of the current NIMS could potentially translate into a networked environment.

One of the early agendas of the Department of Homeland Security (DHS), formed in the post-9/11 federal response, was to standardize America's public safety and first responder entities in emergency preparedness and management. DHS adopted their version of the Incident Command System (ICS) long practiced by the fire service and branded it the National Incident Management System (NIMS). NIMS/ICS presents a flexible but hierarchical manner in which to structure all elements of responding to wide-scale critical incidents. National confidence in DHS and one of its legacy agencies, FEMA, was rapidly eroded in the hours and days following the brunt force of Hurricane Katrina in the Gulf Coast region. NIMS and the ICS model were not in evidence in the days that followed Katrina's blast. Even with the strong leadership of the military eventually taking over, processes like ICS were likely to breakdown given the magnitude and unthinkable outcomes of the storm. Taking the best of the NIMS/ICS and transforming it into a net-centric model may present a more reliable and effective strategy for future emergency preparedness.

Current thinking may hold that critical incident management warrants the traditional “chain of command” structure that can control scenarios with military precision, while typical “day to day” problem solving is more likely to use more flexible, adaptive structures (Birzer, 1996). As technology evolves and information is increasingly available widespread and real-time, hierarchical structures hold less relevance in transferring critical information (Myers, 2006).

It appeared that during Katrina, the traditional command and control (C&C) within the pyramidal hierarchy of federal-state-local emergency management collapsed early in the disaster. Unanticipated conditions such as widespread lawlessness, radio system failure, and first responder grief and abandonment all contributed to disorder rather than order (see Gardner’s chapter in this volume). Significant numbers of first responders were completely disconnected with the centralized C&C, illustrating that “cutting off the head” of the central node in a hierarchical structure kills or disables the system (Myers, 2006).

NIMS, its Origins, and Hierarchical Design

NIMS was developed by the Department of Homeland Security in March of 2004. At the heart of NIMS is the Incident Command System (ICS), whose origins date back over 30 years. ICS began to take shape within the fire service in the early 1970s as a response to deadly wildfires in California. California and federal officials developed a model of ICS called FIRESCOPE, even as Phoenix, AZ fire officials were developing a Fireground Command System. Work continued throughout the 1980s to blend these

systems into what is now recognized as a consistent ICS process with universal terminology and tactics (FEMA, "NIMS and the Incident Command System", n.d.).

FEMA publication 501-8 (2006) provides a further overview of how ICS ought to operate. The ICS is a very hierarchical structure. ICS involves the establishment of an Incident Commander who has overall command and control of the incident through a well defined Command Staff (Safety Officer, Public Information Officer, and Liaison Officer) and General Staff (the Section Chiefs overseeing the major fundamental elements of ICS). The major elements of the General Staff include:

- Operations Section
- Planning Section
- Logistics Section
- Finance/Administration Section
- Intelligence Section (if needed/appropriate)

The Incident Commander (IC) and their section chiefs comprise the Basic Functional Structure in ICS. Growth of this structure is designed to follow a modular extension, whereby the structure grows as needed and diminishes as the need declines.

Section Chiefs further delegate authority as needed and may also add Branches (in the Operations Section) and Units (in all other Sections) as needed. Branches are added if there are too many Groups or Divisions, if the incident demands a Functional Branch, or if it is a multijurisdictional incident. Branches are for further delegation when the Operations Section Chief is getting too large a span of control. Under the Section Chief, and Branch Director if present, fall Groups and Divisions. Groups are always functional

assignments; Divisions are always geographic assignments. Supervisors within the Operational Section lead Groups and Divisions.

In all other Sections, Units are the elements that fall under the Section Chief and are led by Unit Leaders. The Planning Section contains the following Units:

- Resources
- Situation
- Documentation
- Demobilization
- Technical Specialists (as needed)

The Logistics Section contains the follow Units, which may fall under one or two Branches:

- Supply Unit
- Ground Support Unit
- Facilities Unit
- Food Unit
- Communication Unit
- Medical Unit

The Finance/Administration Section contains the following Units:

- Compensation/Claims Unit
- Cost Unit
- Time Unit
- Procurement Unit

Each of these defined Units within Sections has clear, defined missions. Often, there is a strong interconnectivity between Units towards the accomplishment of a specific need, (e.g. Food Unit works with Ground Support Unit and Supply Unit to make sure food resources are obtained, transported, and made available).

The Planning Section assists the IC in developing an Incident Action Plan (IAP). Significant planning throughout the event requires adapting the IAP, communicating the IAP's major objectives to the varying Sections, and measuring its outcomes. Finally, in major, multijurisdictional events, a Unified Command (UC) can take the place of IC. Rather than an individual IC, a team of commanders from each major governmental agency or discipline jointly develops the objectives, plans, and priorities for the incident (FEMA, "NIMS Basic" 501-8, 2006).

One readily apparent challenge of the ICS as defined within NIMS is the complexity of terms and the specific areas of responsibility. Despite federal mandates that all first responders must be trained in NIMS, if a police officer does not work with ICS every day, keeping the nomenclature and responsibilities straight is a daunting task. Assuming any police agency is well grounded in ICS, which is a most optimistic assumption, introducing a Unified Command and thrusting in additional commanders who may not enjoy any level of prior relationship with the police IC poses yet another challenge. At times, when observing the unfolding Katrina response, the command structure looked anything *but* unified. Even when all levels of government were working together (presumably in a UC structure), the "unity" was missing in the reporting out of activities and was replaced by finger-pointing.

With a strong, centralized C&C under the ICS plan, it is clear that the IC is the central node of the hierarchical network. Section Chiefs form major nodes immediately under the central node, Branch Directors and/or Unit Leaders slightly less major nodes under them, and so on. With this “top down” approach, as in the historic bureaucratic business model that dominated American culture, responsibility decreases as one travels outward in the organizational structure with information more difficult to manage and rigidity stifling adaptability (Barabasi, 2002, p 201).

ICS in the Katrina Environment

Countless panels, organizations, and governmental entities have and will continue to dissect the overall response to Hurricane Katrina in August and September of 2005. Most observers who watched on television news saw reported delays of federal assets and local authorities that appeared cut off from all C&C functions through loss of communications. As a panel of the National Sheriffs Association indicated in their white paper, federal agencies require a mobilization time measured in days rather than hours (National Sheriffs Association, n.d.). While FEMA provides for national resources through Emergency Mutual Aid Compact (EMAC), in the Katrina response, EMAC teams from some states arrived only to find local agencies ill prepared to use the distant resources. Some states or regions simply sent teams of responders, circumventing the EMAC protocols that are supposed to ensure a planned response and deployment.

Even when EMAC or other major national deployments occur, “there is no substitute for local knowledge when it is time for a decision to be made” (National Sheriffs Association n.d., p3). The heavy, cumbersome bureaucracy that the federal

government brings with it required paperwork processing and approvals from beyond even the reaches of local command posts, all the way to Washington, DC. The sheriffs' panel concluded that such delays detracted from the Katrina response. The sheriffs also identified multilayered communication systems that hampered effective coordination. In one example, the New Orleans Police Department radio network crashed because its backup generators went down with the flooding and State Police kept the radio technicians at bay outside of the flooded area (Fordahl and Meyerson, 2005).

Clearly there were more issues at play with the breakdown of C&C during Katrina than only failed radio systems. While not approaching the initially reported 500 officers, many police officers left the community, either to attend to family crises, or simply to flee the storm and its resulting chaos (Johnson, 2006). The reliance on a highly bureaucratic hierarchical structure such as NIMS in an extended time disaster with no jurisdictional boundaries, such as a potential Avian Flu pandemic, will likely see a similar outcome due to the absence of timely decision making and burdensome process.

Contrasting Net-Centric with Pyramidal Hierarchy

Unlike the top-down structure of the ICS, net-centric structures rely on mesh-like linkages that survive on the basis of many nodes, all interconnected, and able to adapt to interruptions within the network. Networks are more stable than pyramidal organizational structures because of their distributed nature; no one node in the network will stop communication if it goes down for whatever reason. While networks rely on small numbers of large hubs that have many links, and larger numbers of smaller nodes with fewer links, as long as each node averages one link minimally, there will be

communication (Barabasi, 2002, pp. 18, 63). Because of the interconnectivity of networks, it would require attacks on many major hubs simultaneously to cause a cascading failure to take down the network (Barabasi, 2002, pp. 119-120).

One of the earliest architects of the Internet illustrated the differences between vulnerable centralized (such as the ICS) and de-centralized (such as Community Oriented/Problem Solving Policing) structures and a distributed structure. Distributed networks are mesh-like with multiple contacts between nodes. The network monitors its own traffic history, modifying path selection to respond to changes in the network. Its efficiency comes from local control without the need for any central (i.e. vulnerable) control (Baran, 1964).

Cowper (2005) describes “net-centric policing” as citizens and police alike, linking electronically to multiple sources of information, used towards achieving mutually understood objectives. He describes two primary purposes of the networks, to provide:

- Organizational intent, mission, goals, and priorities for all to readily understand
- The immediate local context for each individual within the network.

In this fashion, a highly informed human network would coordinate activity absent centralized C&C, using local decision making, but within the organizational intent framework (Cowper, 2005). When contrasted with hierarchies, networks have the advantage of more resilience to breakdowns, less dependence on individual leadership skills in central positions, and less likelihood of, and vulnerability from, ego and turfism.

Whether in the context of natural disaster preparedness or attempting to prevent future man-made disasters through terrorism, the federal government still relies on highly structured hierarchies that move much slower than either the winds of hurricanes or the

dispersed cells of terrorists both domestic and international. The FBI's Joint Terrorism Task Forces (JTTF) is a key example of a highly structured and traditional organization, likely hampered with bureaucratic requirements. The FBI has sought ways to more quickly release information that may be classified beyond the normal law-enforcement sensitive releases to local police but has found that the length of time to secure high level clearances is extreme (Casey, 2004) and takes agents away from the higher purposes of actually preventing terrorism. In contrast, looking at a flatter, responsive, and team-oriented structure with a bias towards quick action could result in a decidedly effective approach to combating and preventing terrorism (Levin, 2006), and its net-centric design would make it resilient as well.

ICS in a Net-Centric Environment

Unlike the highly structured hierarchy of the NIMS/ICS, a networked approach would see knowledge and skills sets distributed across wide expanses. While ICS allows for cross training personnel to assume a variety of roles within the ICS structure, a net-centric approach would match individual first responders with other human assets to act as a force multiplier to their particular skill sets. Here is but one example of what a net-centric response to a Katrina-scale event could resemble:

Multiple rapid response clusters comprised of personnel from local, state and federal agencies, each with their own specialized sub-units, could have immediately deployed to the affected areas, setting up communications and providing instant situational analysis and information flow to all other clusters. Computerized disaster scenario models, derived from previous real-world disasters as well as virtual reality war-games conducted by emergency management authorities, would help guide individual clusters' responses. Personnel from local agencies would provide area-specific expertise to state and federal personnel within their cluster, eliminating the need for redundant efforts.

Modern algorithms, such as dynamic programming, could then immediately begin allocating resources to clusters or even individual nodes based on local needs, the needs of other clusters, as well as overall inventory. In the case of major communications failure or other breakdown within a cluster or hub, the entire system would still continue to work. And, because the system is dynamic, situation changes in various locations would lead to instant adjustments within the entire system, thus preserving maximum operational efficiency.

For those nodes or clusters that experience communication failures or are physically cut off from the rest of the network, Neighborhood –Driven Policing principles (see Levin and Myers 2005) could be applied by using local police officers (nodes) with well established community relationships (links) to provide leadership in the absence of outside help. These officers, supported by both the community and other state and federal officers within their cluster, could continue to support the mission and purpose of the effort and collaborate with local residents to survive until contact with the rest of the network is reestablished. (Myers, 2006)

Rather than rely on a flexible but hierarchical structure of ever expanding Branches, Divisions, and Units, a net-centric approach would incorporate the distributed task management and leadership functions in a way that would facilitate more rapid decision-making and quicker deployment of assets where they are needed the most. Nodes in the network would still likely rely on hubs of analysis, resources, and expertise that could not reasonably reside at each and every node. The networked approach would permit this sharing of expertise and resources even if a hub of information was cut off, due to the multiple paths of information available. Radio interoperability will not simply rely on basic radio backbones or even trunked systems. Emerging VoIP technologies and “black box” interconnectors will facilitate seemingly disparate systems to plug in with each other as needed, following the meshed infrastructure of the human networks.

This model presents a significant shift from the C&C paradigm of the current ICS structure. Those who took comfort in the eventual assumption of control by experienced and bold military leaders in the Katrina response plan will not embrace a concept of no

all-powerful, centralized Incident Commander replaced by micro decision making through a highly distributed network structure. With the introduction of Community Emergency Response Teams (www.citizencorps.gov) actively involving citizen volunteers, it appears that DHS recognizes the need for further engagement of average citizens in taking a higher level of ownership for community preparedness. Further evidence of DHS' recognition of the need to more deeply engage local first responders is the increasing number of NIMS training modules available through the FEMA website, <http://training.fema.gov>. Perhaps most indicative of providing resources directly available to citizen consumers is www.ready.gov, where DHS has provided preparation materials, brochures, and forms for adults, children, and private businesses. In spite of all these efforts, DHS' critical incident plans place private sector and volunteer/citizen participants on the fringes of the processes rather than at their heart, failing to recognize that the fastest and perhaps most critical initial responses will come from these sectors (Levin, 2006).

Whether within the Neighborhood Driven Policing description (Myers & Levin, 2005) or simply a widespread recognition that government cannot be the sole source of emergency preparedness, a net-centric approach by design draws in citizens as individual nodes in the highly distributed network. Existing Neighborhood Watch groups could take on much wider roles as information dissemination clusters, allowing individual professional first responders to assist and coordinate a group of citizens even if cut off from the broader network, as seen in Katrina. Building on existing relationships (links in the network) and creating new links before critical events can pay high dividends; actually practicing and preparing for the highly unusual critical events could greatly

enhance the probability that a Katrina-scale event would be managed in a dynamic and effective manner, even with delays in obtaining direct assistance from the state and federal resources. Well organized and prepared neighbors going door-to-door to collaboratively protect the neighborhood is a low technology network communication that can withstand almost any level of systems failure.

An Illustration of Net-Centric Response

While net-centric holds promise for policing and perhaps overall emergency planning, coordination, and operations, discussion has been primarily theoretical in nature. Implementing model systems within a networked environment might yield useful research-based evidence of the potential of net-centric for preparedness and incident management of Katrina-scale disasters. To better translate the theory of net-centric into an Emergency Preparedness application, Thomas Cowper wrote the following scenario for this chapter. What follows is a futures looking, net-centric model of emergency preparedness and disaster response that illustrates the more adaptive capabilities of disaster response organizations compared to traditional, pyramidal Incident Command that is the current model.

Emergency Management Networks, Elements, and Functions

Elements of a networked approach to Emergency Preparedness include, among others, the following entities:

- Local cops, firefighters and EMS personnel
- Local public works, utility and phone companies, street departments, public schools, hospitals, etc.

- Local citizens and private businesses
- State Police
- State DOT
- State emergency management
- National Guard
- Federal agencies – FEMA, Military, Coast Guard,
- Civilian agencies – Red Cross, bus companies, others

The network facilitates information flow – getting the right information to the right people at the right time and in a way that helps them be more productive. Networks can both push information out to specific individuals or groups of individuals and also include resources, Internet sites, and databases that individuals could be queried as needed. Information exchange would include real-time voice communication; near real-time data communication would include text, graphics, and video. Some of the information being pushed to users would be derived from other users as wearable sensors, cameras, and other data gathering devices collect information and put it on the network for others to see. Some data would come from fixed assets like security cameras, Intelligent Transportation System (ITS) sensors, or Doppler radar. Other data would come from strategic resources such as satellites and aerial photographs. Some of the individuals involved are in the field, actively participating in the rescue/recovery. Others are in a Headquarters (HQ), locally or hundreds of miles away. Some might be at home or in an office.

The Scenario

The event scenario is the explosion of an oil refinery. Before the event occurs, every police officer on patrol is tracked via Global Positioning Satellite (GPS); their automatic personal location information is displayed at the 911 center and on fellow officer's Mobile Data Terminal laptop computers (MDT's). Every employee of the refinery is monitored and tracked via GPS and their location is available for display to 911 center dispatchers. Every local citizen is given a small fob about the size of a quarter. When activated, these devices can transmit the citizen's location over a short distance, less than 100 meters. Cellular phones also have GPS enabled to transmit location information whenever 911 is dialed.

All major machinery at the refinery is on the network and its status is continuously monitored. Every vehicle has a GPS device that can be activated at the push of a button to transmit a distress signal to a 911 center; these devices are also programmed to automatically send a message if the vehicle is involved in an accident (airbags deployed) or breaks down. Every house is equipped with an intelligent alarm system that feeds information directly to the 911 center in the event of a problem at the residence. There are security cameras throughout the facility, which are available for viewing to authorized people. There are even some cameras available for viewing by the local public over the Internet. Residences in the vicinity have air quality sensors that gauge toxic gas and particulates, designed to warn people if the air becomes contaminated by releases from the refinery. The information from these sensors is available freely on the Internet. There is a local TV station with access to Doppler radar located at the airport.

In other words, the technology is in place to give everyone a comprehensive picture of their environment and at least some of the people within that domain. The 911 center has graphical displays showing all manner of activity in the area and the status of the refinery, along with real-time video from selected cameras throughout the jurisdiction and particularly around the refinery and other critical areas such as schools or shopping malls. Citizens can voluntarily contribute to this comprehensive picture by turning on various devices in and around their home or their person, and many do.

When the Explosion Takes Place

- Blast damage results in total destruction of the facility and its surroundings. The facility itself is almost completely obliterated by the blast and subsequent fire damage. The fire is still burning throughout the refinery proper and in the adjacent town.
- The surrounding area, a small village of homes and businesses just outside the refinery gates, is severely damaged within a 2-mile radius. Loss of life at the facility is 30 dead and another 50 injured. Some are disabled and still on the grounds. Some are “walking wounded” who are attempting to flee the area. The surrounding area includes another 20 dead and 100 injured within a mile of the site. Residents are fleeing both on foot and in vehicles. Some who are not injured are either helping those in their immediate vicinity or are heading toward the site because relatives were working there.
- The power grid is knocked out within three miles of the site.

- A larger city about five miles away is slightly damaged, with mostly broken windows. While there are some injuries, there is also a toxic smoke plume descending on the area and sickening people in the affected area.
- Local communications are down – a cell phone tower just outside the facility is knocked down. That tower was also a repeater site for the area public safety radio system, leaving a communications “dead spot” in a radius about four miles surrounding the site.
- Some local first responders are among the injured/killed. The local ambulance service building was severely damaged, disabling the nearest ambulances.
- The refinery had a fire fighting station that was destroyed. The nearest fire fighters are responding from the city five miles away.
- Local police from the city are responding. A county deputy was two miles away when the explosion occurred and his car was disabled from the blast, but his radio still works and he can see the site from his location.
- A state trooper was closer to the site when the blast occurred but was sheltered by terrain and is fully functional. She is responding to the site.
- An interstate highway was two miles away. A large number of motorists nearest the refinery are stranded on the highway, some injured. Some are residents of the surrounding village, and those who can are moving toward the area, either in vehicles or on foot. Two people have video cameras.
- The local airport is five miles upwind from the refinery. Two small aircraft were flying in the vicinity when the explosion took place. They are now circling at a safe distance and viewing the scene.

Net-Centric Response

With this rough overview of the situation and the associated conditions, attention shifts to how the network will function. There are two aspects of the network – the technology and the human. Both would spring into action. The autonomous portion of the technology network would react to the event by immediately displaying the outages of the commercial and public safety radio systems, showing the extent of the damage on a graphical display at the network operations centers controlling the systems. Those displays would show an accurate depiction of exactly where the coverage holes were, and that information could be relayed to all first responders and displayed on their MDT's, so they would know when they are in coverage or out. Repair crews would be alerted automatically; they would call up the real-time display and respond with portable transmission nodes or cells that would be able to temporarily fill the coverage gaps in the wireless system. They would be able to analyze their coverage displays and would be trained to know where to go to maximize communications coverage to fill the holes without responding too close to the hazardous site. Multiple temporary nodes would be established within an hour of the event.

Unmanned Aerial Vehicles (UAV's) with video cameras and wireless links could be launched immediately from miles away to autonomously loiter over the site for hours, sending back real-time video footage of the scene along with sensor data for air quality and toxic emissions. On the ground, exploratory robots, programmed to go to certain locations and search for specific objects (i.e. people, damage, fire, heat, toxic or gas) would send back data. Each robot or UAV would be a wireless node, creating an ad hoc communication link that would mesh with existing systems to fill coverage holes. Many

injured citizens would turn on their locator fobs that could be picked up by UAV's or robots. The location of the injured would then be incorporated into the displays at the 911 center. The closest first responders could also receive the information, allowing them to proceed directly to the location of the nearest injured to render aid or rescue.

All of this information would not flood the displays of human operators who would soon be overwhelmed with information overload. Instead, information would be processed by the technology network and depicted graphically in a way that human operators and first responders could immediately make sense of it all and understand the situation as it is unfolding in real time. In a net-centric environment, the goal is to create mutual mental models (MMM's) between everyone involved. MMM's provide everyone with a common framework within which to operate and improve the immediate situational awareness of each individual no matter what they are doing. With MMM's everyone within the network would interactively share his or her knowledge. People could "drill down" into the information display to gain more detailed information about the strategic situation or their own local vicinity contained within the system. In other words, 911 center operators could be presented with an overview of the whole area, perhaps an area five miles in diameter around the refinery site. By observing this picture, they would immediately see high-level information about holes in the communications and electrical grids, as well as physical destruction such as fires and toxic gas.

As time goes on and more sensors are sent into the area (UAV's, hazmat units, robots, first responders, etc.) the picture becomes more accurate and detailed. First responders could get a display that shows the area within 100 meters of their position, including the location of other first responders. This would allow them to "self-

synchronize” their actions from the bottom up without requiring top-down direction. This is not to say that some top-down direction or guidance might not be warranted. Commanders would have the luxury of more information displayed in a much more robust manner within a controlled atmosphere. They would provide an overall strategy for dealing with the event, high level guidance to help responders be more effective and outline exactly what their priorities should be as they work together to resolve the crisis.

The technology network, then, allows the human network to be more effective. Information would be flowing into 911 centers, news media outlets, police headquarters, fire stations, and all other nodes within the network. Information would be coming by phone as well as radio reports relayed directly from first responders who are within network radio coverage. The civilian aircraft would be talking on aircraft channels, relaying visual information that would be patched to 911 center operators who would put that information into textual and graphical context and send it to all responding units. Leaders at strategic command centers (police, fire, EMS, emergency management, DOT, public works, etc.) would be looking at the unfolding picture using all the in-coming information – voice, data, graphical displays, pictures from the media, UAV’s, and robots - and coordinating their planning. As soon as they start to understand a picture of the event, they begin providing guidance to the first responders on the ground. They are not controlling. They are developing a shared understanding of the situation and providing a strategic vision to the responders on the front lines, helping them to self-synchronize from the bottom up. At the same time, the commanders are also coordinating with follow-on aid coming from outside the region (State Emergency Management, National Guard, FEMA, Red Cross, etc.). Those responding agencies are also seeing the picture

on the ground and might also be bringing additional information gathering technology to the local and regional network, such as surveillance satellites, aerial recon, and more sophisticated sensors and robots.

Contrasted with NIMS/ICS, no single or group of isolated commanders would be giving a series of direct orders about how to proceed to resolve the situation. Each actor in this scenario, first responder on the ground, citizen on the street, dispatcher in the 911 center, police chief at his HQ, National Guard commander, or Red Cross volunteer 100 miles away, would have a comprehensive picture of the situation tailored to his or her particular needs. Based upon highly networked technology, this information would help responders and commanders create the MMM's that allow people at all levels to self-synchronize their actions to solve the crisis quicker and more effectively than waiting for orders to be passed up and down a structured chain of command. Police, fire, and EMS commanders would self-synchronize as they created a strategic vision to best resolve the crisis. Police, fire, and EMS workers on the scene could self-synchronize their actions in accordance with the strategic vision or guidance from HQ. Those responding from outside the effected area could self-synchronize their follow-on assistance so that it arrives where and when it is most needed without undue delay.

Conclusion

In the absence of an adequate central command, pockets of Katrina first responders and citizens joined together to focus on the highest order tasks at the time. While not consciously intended as such, this was effectively a basic form of ad hoc self-synchronization. Advanced and technologically integrated self-synchronization within a

net-centric model is intuitive, quick, and yields a more coordinated response than a hierarchical command structure that simply cannot know everything that everyone else knows. Implementing model systems within a networked environment might yield useful research-based evidence of the potential of net-centric for preparedness and incident management of Katrina-scale disasters.

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Disaster at a Distance: Planning to Receive Long-Term Evacuations
Michael E. Buerger

Disaster planning tends to concentrate on the epicenter of a potential catastrophe: what do we do if X event happens here? Tabletop exercises, evacuation routes, stockpiling emergency rations, medical supplies and fuel, and a host of other preparations all focus on surviving a local event. Much less remarked are the preparations necessary for an area that receives the evacuated population of a more distant disaster.

Most disasters in recent United States history have been relatively short-term. Wildfires, hurricanes, and the series of Richter 6 earthquakes in southern California caused death, damage, and temporary dislocation, but there was always a surviving infrastructure and the opportunity for people to return quickly and rebuild. The grounding of the commercial air fleet over North American skies immediately after the terrorist strikes on September 11, 2001, left many people stranded in areas far from home, but almost uniformly among supportive friends and strangers who united in the face of the national emergency. The strange new circumstance tested people's resilience and ingenuity, but only for a short-term. Even the individual survival advice takes as its starting point the need to survive in a disaster zone until help arrives or the ability to take oneself (and one's family) out of danger when all primary forms of transportation are unavailable.

One of the lessons of Hurricane Katrina has been that we need also to be prepared for diaspora: large-scale, long-term dislocations in the event of civil catastrophe. While the particular circumstances of the 2005 New Orleans evacuation -- large inhabited areas lying 14 feet below sea level and vulnerability to breaches in the levees -- are unlikely to

be found elsewhere, other large-scale catastrophes are possible. As we observed the centennial anniversary of the 1906 San Francisco quake, the media reverberated with speculation about the consequences of a larger earthquake in the San Francisco Bay area. The potential for a dirty bomb detonation in or near a populated area is one of the potential second-wave attacks envisioned by al-Qaeda. Accidents, near-accidents, and overlooked maintenance at nuclear power plants in Pennsylvania, New York, Ohio, and elsewhere remind us that nuclear disaster need not come at the hands of terrorists and could leave large swaths of land uninhabitable for months or years to come. Similar possibilities are forecast for chemical and biological attacks or accidents; there is even possible unpredicted volcanic activity.

Lessons of Katrina: Second-Tier Impacts

The primary lessons of Katrina have been well-documented and flogged through the media and the blogosphere: the failure to heed the warnings, born of local temperament and experience with hurricanes; unrecognized class-based assumptions that made no provisions for impoverished residents without personal vehicles; lack of coordination among local officials and regional planners; slow response by federal officials; absence of effective back-up plans for communications; ineffective rumor control; widespread looting.

Slowly, a second-tier set of impacts has emerged. Some were clearly evident in the first-tier effects and observed during the first days of the crisis. Over time, however, they can amplify considerably, morphing into long-term negative impacts on the receiving areas where displaced persons find themselves. Those phenomena fall into two

categories: impacts on individuals and impacts on communities. Some of the impacts on individuals will also have collective impacts on communities, while others will be purely personal, and still other entirely communal in nature.

In no particular order, the following are musings on some of the long-range elements of a diaspora. Some of them have possible solutions, or at least amelioration, in the advances of technology. Others will require social engineering, potentially being forced upon the communities receiving evacuees. The subjects presented here do not constitute an exhaustive or all-encompassing list by any means; they are offered as the beginning of a larger dialogue and exploration.

The Nature of the Diaspora

How the evacuation of a large-scale area occurs depends upon many factors: the elements of advanced warning, the nature and timing of the event itself, weather conditions, available pathways, or external conditions such as an oil embargo or other shortages. Broadly speaking, however, we can anticipate three broad types of evacuation communities.

Mass Evacuation

Large-scale evacuations using organized transportation are possible with sufficient warning or slow development of an incident. Under controlled circumstances, large groups of individuals -- neighborhoods, housing estates, and even whole towns -- can be relocated more or less systematically under controlled circumstances by authorities. Even in cases of sudden devastation, whether by earthquake, tsunami, or terrorist attack, organization can be forged at the perimeter if authorities can set up in

time. Expecting a such a condition to occur is on the outside fringes of probability, perhaps, but there are a number of circumstances during which containment is possible: when the main arteries of transportation infrastructure are destroyed or degraded, slowing evacuation; when intelligence gives advance warning of a strike (such as the airborne distribution of a nerve agent or chemical toxins); when prediction models suggest a rapid spread from a disease epicenter (the movie Outbreak model), and the like.

Mixed Evacuation

Individual motivation may take over at the first signs of impending problems with people deciding to relocate to relatives' homes elsewhere in the country or simply traveling as far away as they can get. Early relocation will ease the strain of subsequent evacuation, but unless the early-leavers leave word with neighbors or others (asking the police to watch after the house as if they were on vacation), their absence in any planned evacuation may cause temporary confusion, overestimation of casualties, and other unanticipated problems. Immediate reaction to the crisis will place an emphasis on the living and the present first, and the dead and the absent only secondarily, so the impact in the critical stages is likely to be slight. Foreseeable problems might arise as concerned family members attempt to enter a sealed disaster area to check on loved ones they are unable to contact, and there are attenuated hazards for first-responders and rescuers checking for survivors.

Individual Panic

Desperation will occur during and in the immediate aftermath of the disaster. While hurricane evacuations in the South tend to be orderly because of frequent

opportunities to practice, areas that are not ordinarily in the path of large natural phenomena will be caught generally unaware. Visitors and new residents will not be aware of local plans or expectations. Residents who make preparations may hunker down to wait out the situation, only to find that their supplies are inadequate or that they do not address the needs of the present emergency: several days' supply of food and water are no protection against radioactive debris for instance.

Individual panic may also overtake a planned evacuation that seems to be too slow or is affected by a secondary crisis such as an aftershock. Panic or insurrection models make for some additional hazards to evacuees in the first instance and additionally to rescuers in the latter, but the human body can only run at full tilt so long. Cars trying to bolt an orderly evacuation line will soon become disabled, mired in impassable terrain, or caught in a huge traffic snarl of their own making. It is the diffusion of the leaving population that creates a longer-term problem, with more persons at risk of exposure to the elements, less efficient use of the relief resources being marshaled, and a greater geographic area in need of search, perhaps rescue, and coordinated transportation.

The Receivers

The logical choice of refuge in the short term is sturdy public buildings with large capacities: schools, athletic facilities (like the Superdome and the Astrodome), National Guard armories, and the like. They are mostly vacant, have considerable space to accommodate large numbers of people (although except for athletic stadiums, the sanitary facilities are generally inadequate for the number of people seeking refuge), and there are at least some facilities for cooking meals. Food, bedding, and other amenities generally

have to be brought in after the brunt of the crisis has passed. There is no privacy to speak of except that accorded by courtesy as strangers endure close-quarter living with persons of vastly different needs, habits, and quirks. Depending upon the situation (and the timing), college dormitories, military TDY barracks, fire stations, and other facilities can be pressed into service. The state of Alabama, for example, recently moved to create a network of shelters in community colleges.

Long-term relocations, however, require different accommodations. The aftermath of Hurricane Katrina showed multiple patterns: the FEMA Village of live-in trailers trucked from other locations; cruise ships (which ultimately served more relief workers than displaced residents); hotel accommodations subsidized by federal relief funds in far-flung cities; relatives sheltering family members both near and distant; strangers inviting in persons who became like family; others inviting in persons who sooner or later became a burden; individuals who simply lived out of their vehicles until other arrangements could be made.

Local faith communities are renowned for taking in people at need. In the event of mixed or panic evacuations, local houses of worship comprise an invisible archipelago of relief, at least in the short-term. They many may not be prepared for the long-term dislocation and will expend their own resources before turning to the local authorities for more assistance (throwing off initial estimates when the emissaries of the invisible archipelago arrive requesting assistance). Incorporating the faith community into readiness plans can help reduce the rough edges of ad hoc refuge.

Though Katrina forced, by far, the largest and longest displacement in American history, there was still an understanding that there would be a return. In that regard, the

displacement was similar to other temporary decampments. The protracted period of time needed to assess the damage, repair the ruptured levees, and restore minimum public services has been far greater than anticipated or desired, and the aftermath has provided a hint of what might be the tasks of dealing with a more permanent dislocation. The area around Houston, Texas, opened its doors to the evacuees from the Gulf Coast and absorbed the lion's share of displaced persons; it recorded elevated levels of crime shortly afterwards. Welcome wore thin there and elsewhere, for a variety of reasons explored below. Social services in a number of areas were strained by the need (unanticipated in the state and local annual budgeting) to help sustain the large number of poverty-stricken people. The evacuated wondered if they would be able to return home or whether they should, or could, set down new roots in the communities where they found themselves.

Communications

The greatest need in a disaster, and often the greatest weakness, is accurate and comprehensive information. The same is true during the aftermath. From the standpoint of evacuees and their families, the greatest concern is for family members who are separated by the events. Perhaps the worst-case scenario is an evacuation occurring when parents are separated from their children (during the school day, e.g.) and evacuation patterns move out of practical necessity in opposite directions. Similar concerns attend the fate of elderly relatives in nursing homes and assisted living facilities.

Initially, all communications infrastructure will be overloaded: the Katrina storm destroyed the broadcast network, and in the wake of 9/11 attacks, what communications

networks that were not linked to the radio mast of the Twin Towers were quickly overloaded. Emergency personnel will be concerned entirely with rescue and evacuation, so census-taking and communication with registries will be a second-tier responsibility.

In the absence of a clear plan of action, external agencies including FEMA, the Red Cross, the Salvation Army, and other ad hoc groups will place demands on the local infrastructure, especially police and shelter facilities, merely in their search for information to help reunite families. Pets will add an additional burden in this regard, howsoever heartwarming the media's Incredible Journey stories may be. A network approach would be the most effective with a modicum of advanced planning. However, we should also prepare for a contingency in which the disaster is so sudden and so overwhelming that the best-laid plans are inadequate, and the various agencies will be playing catch-up for the first weeks of diaspora.

The Internet does not require a physical presence in the area for it to be effective. Federal-level planning can designate a single coordinating website and dozens of ancillary management stations throughout the country to coordinate census and contact efforts from afar. Local and regional coordinators can build in census-taking and reporting duties

The more a local community has a plan including definite responsibilities for taking and maintaining a census of evacuees in their area, the easier this will be. It is an activity that can easily reside within the faith community, a simple piggyback upon its solace and new arrival outreaches. Local Scout troops, Kiwanis, or Blue Star Auxiliary (or their equivalents) are other logical possibilities. The certainty of the assignments -- even though people's first instincts will be to render food and shelter types of aid -- will

make other logistical elements of the arrival run much smoother. Many of the attendant needs discussed below can be identified, quantified, and reported to central coordinating agencies, shortening the time between need and relief. Having an established census can also identify at-capacity and under-utilized receiving areas, enabling the transfer of evacuees from over-stressed towns and sites to those with available resources.

Preparation and dissemination of a stock of pre-devised and printed questionnaire forms (names, addresses, medical needs, “seeking separated relatives,” skills, employers, other considerations) may help reduce uncertainty in the initial onset. Unaffected communities with those stocks will be able to send them readily to unprepared communities in other areas should the disaster occur in another region of the country in the event that Internet transmittal and printing is somehow not available in the new sites.

Medical and Mental Health Needs

Loss of contact with medical and mental health care providers was a dire problem during and after the Katrina evacuation. In a telephone survey begun five months after the storm, the rate of suspected mental health problems was thirty percent (“double the usual” determined by an earlier national survey), although respondents’ answers also indicated a strengthening of resilience and resolve (Associated Press, 2006c). Those findings were made during a time when New Orleans was in the process of clearing and rebuilding storm-damaged areas, offering the possibility of return, or at least a choice to return. The prospect of a long-term or permanent dislocation may produce more serious and enduring mental health impacts. This can include increasing mental health concerns within the population at a time when services are strained or completely unavailable

(Associated Press, 2006b; Turner, 2006). In some areas, the arrival of large numbers of refugees may exacerbate a local situation already strained by a lack of resources (Jackman, 2006).

Persons forced to leave home or evacuate from an area without being allowed to return home will be separated from sustaining pain, mood-leveling, hormone, and other medicines for an unknown period of time. They may not be able to obtain temporary relief in the evacuation's way-stations. Upon arrival at a long-term refuge, a number of logistical problems will confront them. Patients will almost certainly be separated from doctors and therapists, making renewal of prescriptions problematic. It is even conceivable that doctors' credentials will not be recognized in the areas where they arrive, though the AMA and other regional groups will have the facilities to buffer such problems in fairly short order.

At some point in time, a national medical registry coupled with a reasonably secure biometric identification system may obviate the present difficulties, but those systems are still some years off. There is an interim technology -- the implantable chip that contains medical history and other data -- that is at the threshold of acceptance, but neither the chip nor the technology to read it is widely disseminated. Validation of the legitimacy of prescriptions will follow hard upon the identification of needs through whatever census mechanism is in operation; even in the absence of a structured census-taking, the need will identify itself on an ad hoc basis. In the short-term, con artists with and without drug dependencies will attempt to take advantage of these conditions to game the system (as below), and local medical personnel will most likely err on the side of compassion.

A large population influx will place a strain on the stock of local pharmacies, which tend to order within certain parameters based on their customer base, allowing for new prescriptions. Standard orders are placed on a weekly or semi-weekly basis, and although the supply chain will undoubtedly adjust quickly once new needs are quantified, the initial blitz of elevated demand will affect both newcomers and residents with shortfall. Emergency transports can be done from stocks in outlying areas, but there will be logistical and security measures to be devised on short notice.

Articulate patients who can identify their medical problems and treatment regimen should have a fairly easy time making the adjustment. Psychiatric and other mental health patients may have more difficulty, as it is easier to start anew with a physician than with a psychiatrist or therapist when one's entire history of counseling is lost or unavailable. A similar but even more difficult problem faces those without a framework for communicating easily, such as autistic children and mentally impaired adults. Still another problem may emerge as individuals who had been barely functioning at a competent level become unhinged by the trauma of the event and relocation. Without reference to a diagnosis, their behavior will be the only marker of a psychiatric difficulty and may be confused at first with criminal behavior. Both law enforcement and the medical community could find themselves dealing with large numbers of traumatic stress disorders, some clear, some perhaps masked.

In the event of a massive population dislocation, we should anticipate that drug dealers would seize upon it as a moment of opportunity: widespread attempts to obtain drugs under fraudulent guise should be expected. (Drug addicts may do the same, but the larger and more capable enterprises will most likely be from the purveyors.) The

developing network of pharmacy chains with their own national databases may mitigate to some degree, but the opportunity for fraud is still prevalent. There is also an elevated danger of attempts to hijack new shipments of drugs coming into areas where evacuees are staged.

In some of the more isolated areas, medical personnel may be exposed to a whole host of addictions and schemes to which they have never been exposed; in the more populated areas, pharmacy-hopping is almost certain to be a feature of the early days, as addicts and dealers try to take advantage of the confusion that attends the dislocation. While law enforcement will eventually catch up with these schemes, the criminal element will nevertheless place an additional demand on a system already taxed to accommodate the rapid influx of population.

Over the long-term, various forms of trauma will creep to the surface. In one of the first comparison studies, the children who fled Katrina demonstrate a higher rate of physical and emotional problems than does a comparison group of children living in the inner city of Los Angeles (Dewan, 2006). People who girded their loins to meet the emergency may suffer deferred stress symptoms even once they reach seemingly solid ground. Those who suffer from addictions and dependencies may make it through the disaster on sheer nerve, but relapse when the enormity of the situation hits them. There is no immediate gauge of the impact of large new numbers of people entering local AA or Al-Anon groups. Nor do we realize the longer-term strain on members in sobriety accustomed to helping members through the familiar substance abuse problems now finding themselves confronted with emotional problems including traditional substance-based forms compounded by disaster-related trauma.

In the event that the disaster involves radiation exposure, either from a Chernobyl-like accident or a dirty bomb attack, the medical situations will be both acute and long-lasting. The closest model we have is Chernobyl, whose woefully inadequate Soviet-era records understated the problem. The effects are slowly manifesting themselves over time, with a growing number of cases straining medical systems in the new Ukraine (Associated Press, 2006a). The medical communities in the receiving areas will bear the brunt of the initial impact (all but the crisis cases treated in emergency triage facilities, presumably), and unless there are long-term preparations, they will also bear the brunt of the longer-term cases with little or no support.

Managing Criminal Populations

Three separate categories of criminals will be displaced by the event: those who are incarcerated at the time of the event; those who are under community supervision, either in lieu of incarceration or under release conditions; and active criminals not under the control of the authorities. Despite Hollywood's penchant for jailbreak scenarios, it is more likely that the populations of jails and prisons will be part of an organized evacuation. When their removal takes place in the order of evacuation is not clear because the facilities share the features of both containment and facilities; incarceration sites may be resupplied and their residents kept in place until the general rescue and removal operations are complete. The extent of structural damage and the ability of the authority to maintain adequate staff for supervision under conditions of emergency are wild cards in this scenario.

Offenders in the community, both active and under nominal supervision, will pose the greatest problem for the receiving communities. While many are not necessarily going to continue their ways in new locations, the experiences of Houston in the wake of Katrina suggest the need for extra vigilance in receiving communities. The nature of the census (assuming one exists) allows canny offenders to assume new identities, at least in the short-term. While AFIS and DNA databases will eventually remove the cover of an assumed identity, any such classification still rests upon apprehension for new criminal offenses or suspicious activity. The sheer volume of need will prevent mass validation of identities: the first response of the authorities will be the humane treatment and relocation of those whose lives have been devastated.

Any subsequent validation, even those involving checking criminal histories with AFIS, will be a long, sporadic process that offers a window of opportunity for some offenders to simply disappear, their own identities perhaps counted among the dead and missing of the disaster. If their new lives are law-abiding, the net gain to society may be positive. If the individuals continue their antisocial ways, they will eventually be identified and returned to their former bad name. A slightly different path might open up for those who wish to escape prior debts, but the economic dislocation of a mass-casualty event and relocation of an entire area's population will have economic repercussions far exceeding the sum of individual debtors who "disappear." They will have more protection in the larger national effort to relieve the economic dislocation than will the criminal element that resumes their misdeeds under other names.

Some criminals will be temporarily unable to provide the goods and services they did in their home territory: drug trafficking supply lines will be disrupted, and dealers

may find themselves in virgin territory or relocated to areas already under franchise. The former brings the possibility of the introduction of new drugs into previously unaffected areas (assuming such truly exist any more), or areas where the drug was previously less accessible. Bringing in a new drug creates a more vulnerable criminal due to greater visibility and earlier interdiction by law enforcement, but there may still be collateral damage inflicted upon the receiving communities. Potentially much more dangerous is the relocation of displaced dealers into established territories: it poses the possibility of sudden eruptions of street violence as the newcomers contend with established markets for turf, a replay of the late 1980s and early 1990s conflicts wrought by the appearance of crack cocaine.

Sex offenders are a particular danger, as they will be going into a location where their identity is unknown, operating among a population with its natural defenses down, opening its doors to help the innocent. At the time of this writing, a number of states are experiencing difficulty tracking their released sex offenders even without catastrophe. A single newcomer with unusual behavior will stand out in an area; the same person mixed in with a large evacuated population has much greater cover, and thus has much more potential opportunity. That same condition also provides new opportunity for residents with predilections that previously had been held in check.

A further problem exists for local authorities: any sudden increase in criminal activity overall, or a particularly heinous crime like child abduction and murder, may quickly change the tenor of the community response to the newcomers. Human nature will likely ascribe the blame for a heinous event to the newcomer community, especially if the perpetrator is not quickly apprehended. Police and other officials will have to deal

with the crime itself as well as with the spillover frictions between resentful, long-time residents and newcomers unfairly tarred by the sins of a few.

Local enforcement capacity may also be strained by other factors if police and rescue personnel who volunteered to be part of the original relief effort are absent when the evacuees arrive. Courts, detention, and jail capacities may be strained by an influx of gang members, drug turf violence, or simply the volume of new offenders. Similar impacts on medical facilities may result from new violence or simply an increased number of patients.

Epidemic and Contagion

A special challenge to the law enforcement and medical communities is an evacuation under plague conditions. In the event of terrorist strike by widespread release of a highly contagious ebola or Marburg-type virus, attempts at planned evacuation may give way to panic. Under such conditions, all newcomers will be suspected: creating refuge for the displaced population will be a matter of establishing an effective quarantine. Medical examinations and certification can be provided for those removed under planned or controlled conditions, but those who flee in panic and scatter are both suspect and potential targets of vigilante actions.

The same biohazard protection afforded to first responders in the epicenter will be needed as well for those who manage the evacuation and the placement of the evacuated population. Whether there is a sufficient stock, whether that stock can be promptly delivered in the areas where it is needed (including the need to hold some in reserve for assignment to newly-identified outbreak areas, while there is a crying need for protection

in the identified areas), and whether the transportation network will be nimble enough to move needed supplies to newly-identified areas are all open questions in need of exploration and planning.

Logically, a medically-defined evacuation would call for a receiving area that allows a natural quarantine: tent cities to begin with, FEMA trailers as soon as the logistics allow. The amenities of such places will be scant at first, requiring a separate logistical effort to provide stores, schools, medical clinics, and the like. To avoid people making parallels to concentration camps, and to calm fears of areas receiving refugees, these areas must clearly be transitional housing rather than an end-destination. The overriding focus must be the thorough medical examination of all residents and placing the sick or exposed in real medical quarantine. The healthy must be moved as quickly as possible to unaffected areas and with some recognizable certification of their state of health to reassure the receiving areas. Census mechanics and the security problems of a plague evacuation will be considerably more difficult than those of other disasters. The natural impulse to facilitate reunification of families must be tempered by public safety needs and will require an investment in alternate forms of quasi-reunification -- dedicated communications networks or web-based capacities that allow healthy individuals to communicate with their afflicted loved ones. Whether the strain created by mass numbers will allow the expected communication with health care providers (as we have come to expect in the course of normal events) is highly problematic and may require new management efforts.

Local Capacities

The post-Katrina focus on placing evacuated children in schools was a natural product of the catastrophe occurring at the end of August, the beginning of the school year. Mid-year disasters will cause an even greater dislocation. With Katrina evacuees, there have been secondary issues with insufficient classroom capacity, the impact on school ratings under No Child Left Behind testing, and the integration of students with different levels of preparation at the same nominal grade level. Those same issues would attend a longer-term evacuation as well.

There is a long history of American schools using trailers as classrooms to absorb temporary bubbles in school-age population, so the physical dimensions of school attendance may be the easiest problem to solve. Greater difficulties will lie in matching capable teachers to the new school-age population. In planned relocations and new residential facilities along the FEMA Village model, new school facilities can be created specifically for the incoming population, but in other receiving areas where the new population is absorbed by whatever means are available, the existing schools will be under greater stress to accommodate the new students.

Teachers from the disaster-stricken area will wish to be reunited with their families, and the logistics of the evacuation will almost certainly divide the population in unusual ways. Even if teachers evacuate with their students during the school day, reunification efforts will sunder the classes as the census efforts transport students to wherever their parents are as a result of the evacuation. Once arrived at a stable haven, however, the teachers will be able to supplement the area's teaching cadre.

The need to work -- to earn money, to normalize life to the degree possible -- will be paramount for almost everyone in the diaspora community, but states may need to devise ways to suspend or modify licensing rules in order to accommodate them. The same will be true for medical licenses, as medical personnel and mental health care professionals will almost certainly be needed. The potential for criminal fraud, though small in probable numbers, is an important consideration in screening and cross-checking claims of licensure in the disaster-affected state. Less acute considerations will attend the acquisition of licensure for the other occupations that are regulated. One consideration will be the need to mount “crash courses” in the new location’s rules for those ready and willing to work in their profession.

Localities will also be affected in a number of other ways. Local police will find themselves dealing with a host of emotional difficulties and behaviors related to the evacuation. Whether or not they recognize them as such, and whether there are social work and mental health services available as a backstop if they do, remains problematic. As with teachers, one can assume that some mental health professionals will be part of the diaspora, and will be seeking to reestablish themselves in their new locations.

Local Economies

Though the essay speaks in terms of long-term diaspora, the extent of displacement and the length of relocation -- perhaps permanently -- will not be known in the first few weeks. Some in the diaspora may use their first refuge as a jumping-off point, staying for a while, using the time to assess other options, and then moving on. Areas that receive the displaced populations will also receive infusions of federal and

state emergency funds. There may be a temporary depletion of food and medical supplies as the demands of the new arrivals overwhelm existing stocks. It should be possible to rectify that situation fairly easily by redirecting shipments bound for other locations (some of which would have been in the disaster area). With or without a coordinated census, chain stores -- groceries and pharmacies -- will be able to restock quickly by communicating with their central supply depots. Similar support may be available to building supply stores that will be tapped for new shelter construction.

The local housing market will be saturated, and emergency funds will boost the local economy almost overnight. As with all booms, however, the specter of a trailing bust is ever-present. Even if a return to the disaster area is impractical because of radiation, the first relocation for safety may not be the new home of all evacuees. A rise in population does not translate into an expansion of available jobs: economic necessity and other options may lure the new residents elsewhere.

Booms may turn to bust, which is not exactly a shocking revelation in American history. A disaster-based boom is an artificial one, bringing a quick flood of money into areas that receive evacuees, but not necessarily creating a new foundation for the local economy. Boom conditions of this sort should be considered ephemeral; they are not necessarily negative unless they trigger profligate spending in the receiving community. That simple fact should be a fundamental lesson for second-tier disaster planning: local residents should recognize the windfall for what it is, and avoid spending or making new commitments that will outlast what may be a short-lived bounce.

The unknown factor in the matter is the decisions that will be made by corporations with assets in the disaster zone. Some jobs may disappear forever; others

may be shifted to manufacturing or service centers elsewhere in the country. Some workers may be able to relocate to jobs in other areas, but it is equally possible that the new capacities will simply hire residents in that locality, leaving displaced workers jobless. Part of the sucker punch of the disaster may be the necessity for many evacuees to find new means of making a living. Such opportunities are likely to be scant in the areas that are the first-level receiving communities for the displaced populations, encouraging second- and third-stage migrations to other areas. Such movements may ease local pressures but create new complications in terms of managing the documentation of the diaspora and management of relief efforts.

Katrina dispersed a large number of persons living at or below the poverty level, and communities have been hard put to absorb a population dependent upon public resources. Another type of disaster may well create another such population as local infrastructure and economies cannot expand quickly enough to accommodate the overwhelming need. Government assistance will mitigate the problem somewhat, but the federal purse is not limitless. Katrina strained FEMA's ability to pay for hotel accommodations, which has since ended. A more long-term diaspora would need, and planning should encompass, an alternative form of financing for more stable housing.

Burnout

A high burnout rate from recovery personnel is a lesson learned from the collapse of the World Trade Center towers: the helpers and rescuers will find themselves in need of assistance. A tertiary network of relief, respite, recreation, and assistance will be necessary for those who come to help the displaced populations. The faith community

will be first-line bulwark in the receiving areas, as the initial focus will be on the disaster area personnel. Red Cross volunteers and others will also find themselves absorbing the emotional trauma of the displaced. While all have some experience on a smaller scale, the sheer weight of the volume may erode the helpers' stamina.

We are accustomed to flocks of grief counselors descending whenever there is a school shooting, but those are temporary events, affecting a relatively small portion of the entire population in most cases. The trauma is confined, with the remainder of the community intact, stable (if shaken), and familiar; those conditions will not attend a massive population dislocation, especially when families are separated.

Miscellaneous Concerns

In this day and age, we must anticipate that a proportion of the evacuees will include undocumented immigrants. Humanitarian concerns in the epicenter areas likely will not ask about citizenship or conditions of entry. Even if illegal immigrants are discovered, the mechanics of evacuation are unlikely to include provisions for prosecution and deportation. Second-level follow-up, however, may be different. The post-Katrina rebuilding of New Orleans has been accomplished with the help of large numbers of illegal immigrant laborers, and the identified dislocations discussed above constitute an even better opportunity for undocumented immigrants than for native lawbreakers.

FEMA villages and other quickly-built housing may rapidly deteriorate. Unless there is an adequate pre-planning survey, some housing may be poorly sited, as some FEMA trailers were in staging areas, leading to swift physical deterioration from water.

No community wants a shanty-town; no one forced from their homes and lives wants to live in one. Where rapid housing construction is required because of volume, it would be prudent to have contingency plans for either further dispersal or a plan to reinforce and upgrade the facilities, possibly in rotation.

Long-term communications challenges will include the ability to deliver mail, reconstruct financial records, notify creditors and debtors, coordinate insurance claims, and the like. The census infrastructure, with Internet communications and perhaps some other options such as corporate representatives visiting the various sites on a traveling circuit, should facilitate these efforts. The problem of volume may, however, create additional difficulties. There is no way to anticipate the exact dimensions that might occur; the backstop provisions for these sorts of problems lie in the hands of the Congress and the legislatures.

Katrina brought to our attention the uncertainty of residency in the face of long-term diaspora. Many evacuees returned to New Orleans to vote in the local elections, but the reconstruction efforts were already well underway when they did so. There is no precedent for declaring that a disaster area is unsalvageable or for voiding residency and voter eligibility. The status of displaced voters is of considerable interest to the receiving communities, especially where large numbers of evacuees can easily upset the balance of politics dramatically. While prisons and college communities share similar concerns over their temporary populations, the liminal state of the voters of a disaster area -- particularly during the early stages of damage assessment -- comprises a special concern. The franchise is a fundamental right of citizenship regardless of economic status or even

dislocation, but there are practical problems of managing the process that must be addressed in advance.

Perhaps the most important concern in a long-term diaspora is the potential for turning “evacuee” into “refugee.” Compassion fatigue has set in post-Katrina in some locations (at the same time that life-long friendships seem to have been forged in others). The United States has, on several notable occasions, evidenced episodes of unkindness toward displaced persons. The most vivid of these episodes is that of the Okies, farmers displaced from their lands in the Dust Bowl during the Great Depression. John Steinbeck’s novel The Grapes of Wrath paints a stark portrait of their plight; the potential for evacuees’ needs outlasting the good will of the communities that receive them is a real possibility. A long-term or permanent displacement from areas blighted by disaster should be treated as a national emergency, and the resettlement and mitigation of victims a national priority. The best preparation for such a worst-case scenario is an open planning process, clearly defining areas of responsibility, mapping out contingency plans, and looking as far over the horizon as possible to determine needs, resources, and possibilities.

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The Role of the Media in Mass Casualty Events: Lessons Learned from Hurricane Katrina

Alan Youngs

“The first thing you should know about Hurricane Katrina is that everything you know about it is wrong.” So said editor Jonah Goldberg of the *National Review Online* in a post mortem of the media’s performance following the deadly 2005 hurricane.¹ This clever quip is startling, but is it accurate? In the days following Katrina, the public was treated to an endless media diet of horrifying stories that included wanton violence and destruction; reports of rescuers being fired upon by snipers; and a multitude of reports of rape and burglary. Most astonishing perhaps, were reports of thousands of people dead with bodies stacked like cord wood in refrigerated units.

The facts of the hurricane were terrible enough: By the time Hurricane Katrina had cast its net of devastation over New Orleans and the Gulf Coast, her fury had inflicted an estimated \$75 billion in damages – the costliest hurricane in U.S. history. In its wake, Katrina left about 1,420 people dead and millions displaced. It is estimated that more than 275,000 homes and businesses were damaged or destroyed.² The breach of the New Orleans levee, intended to keep storm surges at bay, left 80 per cent of the city under water. Wind damage stretched along the coastlines of Louisiana, Mississippi, and Alabama.³ Katrina was the sixth strongest Atlantic hurricane ever recorded, and its legacy was one of chaos and human tragedy.

¹ www.hurricane-katrina.org/medias_coverage_of_the_disaster/Index.html

² Ken Ritter, Associated Press writer; www.chron.com/disp/story.mpl/ap/nation

³ http://en.wikipedia.org/wiki/Hurricane_Katrina

Rescue personnel, law enforcement agencies, and other first responders faced logistical and communications challenges never before encountered. The lack of interoperability (the ability of multiple agencies to communicate with one another during emergencies) was, and is, a problem that plagues agencies to this day. Astonishing as that may seem – especially following Columbine and 9/11 – it remains true. Media covering the aftermath of the hurricane likewise faced daunting problems of communications, with the contrasting result that much misinformation was disseminated, while at the same time serving as valuable communications links relaying vital information.

World Attention

Reporters from throughout the world descended on New Orleans in the days following Katrina. The story was one of the biggest of 2005. If the media are judged on their ability to deliver accurate information in a timely way to a public desperately in need of information, then one would have to conclude that their effort fell short of the mark and left the industry stained. For most emergency service personnel, the presence of reporters and photographers at the scene of a crime or disaster is an annoyance that is expected and tolerated. A natural conflict exists to one degree or another when both parties are simply trying to do their jobs. The rub comes from the divergent missions of law enforcement and media.

Law enforcement is to investigate and to bring order from chaos. The media are there to gather information and make it available to the public. For law enforcement to fulfill its mission, confidentiality and secrecy are often required. Too, most emergency personnel simply want to be left alone to do their jobs. For the media to fulfill their

mission, openness and accuracy are required. At times, those seemingly conflicting requirements are compatible, at other times, they are not. At times the public is served; at times it is not.

Following Katrina, the media were plagued by the same communications blackouts – such as land-based and cellular phones – as everyone else. Relaying information, checking leads, investigating rumors, and confirming facts were made nearly impossible by the communications collapse. In many cases public officials dispensed inaccurate information, believing it (presumably) to be accurate. Rumors fed larger rumors. Problems were spotlighted to appear much larger than they were. The nerves of citizens, emergency personnel, and the media were stripped raw. In part because gathering factual information was so difficult, the citizenry of New Orleans could not be assured of its safety or rescue. Coupled with media deadlines and a competition to “out-scoop” the next guy, the situation was ripe for an orgy of hyperbole and distortion.

Misinformation

The reality of the disaster was epic without embellishment. When swollen further by misinformation, it became stupefying. Stories abound. For instance, on Tuesday Sept. 6, the *New Orleans Times-Picayune* reported a story of a National Guardsman who said 30 to 40 bodies were stored in the Convention Center freezer. Six days later the newspaper corrected itself and noted that only four corpses were there.⁴ In another instance, National Public Radio reporter John Burnett repeated the circulating story that a

⁴ www.sptimes.com/2005/09/28/Columns/Media_outlest_exagger.shtml

young girl, perhaps 13, was dead and had possibly been raped in a bathroom at the Convention Center.⁵ The reporter had evidently taken his information from eyewitnesses who turned out not to be credible.

Readers of newspapers and viewers of TV news were treated to seemingly endless reports of thefts, carjackings, gunfire, rape, murder, and gang violence. In some instances, city officials relayed gross misinformation. CNN anchor Paula Zahn quoted the mayor as saying that “as many as 10,000 people may have died in that storm or its aftermath.”⁶ (About 1,400 people perished, not all of them of course, from New Orleans). On Sept. 6, (a week after Katrina) New Orleans Mayor Ray Nagin and (then) police Superintendent Eddie Compass appeared on the *Oprah Winfrey* TV show. They told viewers of hundreds of armed gang members raping and killing people, including babies, inside the Superdome.⁷ Earlier the mayor had said on camera, “They have people standing out there, have been in that frickn’ Superdome for five days – watching hooligans killing people, raping people.”⁸

Reporters, with no way to confirm the mayor’s comments, took him at his word. Problem was, the mayor gave erroneous information. One can sympathize with a reporter hearing the same “facts” from multiple sources, but unable (because of blacked out communications) to verify the information, might conclude that the information is accurate. The same could be said of emergency personnel. It is also entirely reasonable to expect reporters to qualify their reports with a disclaimer such as “these reports could not be verified.” In too many cases that was not done, and rumors were presented as

⁵ Ibid.

⁶ Ibid.

⁷ www.sptimes.com/2005/09/28/Columns/Media_outlets_exagger.shtml

⁸ www.pbs.org/newshour/bb/weather/july-dec05media_9-29.html

facts. On a brighter note, the *LA Times* observed in a post mortem of the disaster that the *New York Times* was generally more cautious about stating that certain information could not be verified, than were other media.⁹

Looking back on the coverage, NBC News reporter Carl Quintanilla said, “I can’t recall a situation or a story in which I tried harder to couch what we were saying in as much uncertainty as we could, telling people, these are reports that are coming from authority figures, people who you normally quote without question in regular everyday stories, fires, police stories and so forth.”¹⁰

A Mythical Place

Throughout much of the aftermath of the hurricane, the media indulged in a frenzy of exaggeration and fabrication. “It just morphed into this mythical place where the most unthinkable deeds were being done,” said National Guard spokesman Maj. Ed Bush.¹¹ Rumors such as sharks from Lake Pontchartrain swimming through the New Orleans business district or an infant’s body being found in a trash can¹² fed the media’s insatiable need for news, regardless of source or accuracy. The *Ottawa Sun* reported that a man seeking help was gunned down by a National Guard soldier and that another young man was “run down and then shot by a New Orleans police officer.”¹³

Nationally syndicated radio talk show host Hugh Hewitt delivered a scathing critique of the media’s performance during a panel discussion:

⁹ Ibid.

¹⁰ Ibid.

¹¹ www.lastimescom/news/nationworld/nation/la-na-rumors27sep27,0,5492806

¹² Ibid.

¹³ Ibid.

...in fact, they were reporting lies. The central part of this story, what went on at the convention center and the Superdome was wrong. American media threw everything they had at this story, all the bureaus, all the networks, all the newspapers, everything went to New Orleans, and yet they could not get inside the convention center, they could not get inside the Superdome to dispel the lurid, the hysterical, the salaciousness of the reporting. I have in mind especially the throat-slashed seven-year-old girl who had been gang-raped at the convention center – didn't happen. In fact, there were no rapes at the convention center or the Superdome that have yet been corroborated in any way.¹⁴

In some instances, reporters stepped out of their traditional roles as detached observers and became players within the story. Fox TV news reporter Shepard Smith at one point angrily and emotionally pleaded on air for rescuers to bring water and food to a group of citizens stranded on an overpass. “What are you going to do with all these people? When is help coming for these people?” Smith demanded to know. “Is there going to be help? I mean, they're very thirsty. Do you have any idea yet? Nothing?”¹⁵ Within his industry, Smith was criticized by some for his lack of composure, yet his outburst reflected the frustration felt by many at the slow response to the situation. Ironically, had he not been able to uplink his report, the stranded hurricane victims would have gone unnoticed even longer.

Smith's pleas point out an important part of the media story in New Orleans. Despite the excesses and negligence in verifying facts, the media (TV in particular) played a valuable role in assisting authorities. City and government officials monitored TV reports and were able to coordinate rescue efforts based on the information being broadcast. Equally valuable was the Internet – a conduit of information and photos for citizens searching for loved ones.¹⁶

¹⁴ Ibid.

¹⁵ www.pbs.org/newshour/bb/weather/july-dec05/media_9-29.html

¹⁶ http://en.wikipedia.org/wiki/Hurricane_Katrina

The media's efforts following Katrina are likely to be fodder for panel discussions and journalism textbooks for long to come. But did the media hurt their credibility in the long run? After all, most media honored their professional obligation to correct inaccuracies once they were known. "I see this as an admirable amount of self-examination (The press) has been very quick at calling public attention to their own dirty laundry," said Steve Lovelady, managing editor of the *Columbia Journalism Review*. He noted, "You don't see FEMA saying to the public, here's seven ways we screwed up."¹⁷

In a panel discussion about the role of the media in the disaster, the editor of *Broadcasting & Cable* magazine, J. Max Robins, crowed, "This in so many ways was local television, the local media, really at its finest hour."¹⁸ Others saw it differently. Mayor Nagin noted to the panelists that once the national media arrived on scene, the hurricane changed "from reporting the news to making the news."¹⁹ *The National Review's* Jonah Goldberg called the coverage "probably the biggest media scandal of the last 20 years."²⁰ Was it as bad as Goldberg asserts? Will the public forgive? Whether it does likely depends on the media's ability to get it right the next time a disaster visits.

But what would it take to get it right? The question is a conundrum because Hurricane Katrina wasn't a singular event such as a hostage situation or plane crash in which command and control is clearly defined. With Katrina, no one person or agency had the knowledge or responsibility to control the flow of information. Katrina's fury

¹⁷ www.sptimes.com/2005/09/28/columnse/Media_outlets_exagger.shtml

¹⁸ J. Max Robins, editor of *Broadcasting & Cable*, a trade magazine. *Nagin chides media for Katrina coverage*, Tuesday January 24, 2006, Associated Press, <http://www.foxnews.com/story/02933,182689,00.html>

¹⁹ www.chron.com/disp/story.mpl/ap/nation/3609577

²⁰ www.hurricane-katrina.oorg/medias_coverage_of_the_disaster/Index.html

wreaked its devastation (mostly) in three different states, and affected thousands upon thousands of people. Property destruction occurred on a massive scale. Thousands of stories were being played out at the same time – most of them emergencies in their own right. Did any one agency have the whole picture?

Further, should the public expect a flawless and efficient response from emergency services in such a situation? Katrina was a once-in-a-hundred year event. Communications were flawed and sometimes non-existent. Emergency crews literally from throughout the U.S. descended on the area, and there was no plan for what to do with them. Some might say the left hand didn't know what the right was doing. In fact, it might be more accurate to say the left hand didn't even know if there was a right hand. Certainly the public shouldn't expect a flawless performance in such a time, but just as certainly it has the right to expect a better performance from both service agencies and the media.

The chaos of Katrina strained every emergency service provider from the National Guard to local police departments and ambulance crews. No one disputes that the effort was disorganized and slow. Placing blame for the chaotic response depends upon where one sits. Mayor Nagin bitterly blamed the Bush administration and the Federal Emergency Management Agency (FEMA) for not mobilizing faster. Today, few would take issue with his argument. The Bush administration blamed officials at the local level for not using the resources at hand to move people to safety and to provide services. Few would take issue with this argument either.

There are no neat and easy answers to the many questions surrounding relief efforts and dissemination of news during Katrina. Some general observations, however,

are in order. Surely technology will provide some assistance in the future. The blackout of cell phone communications during Katrina severely handicapped efforts to coordinate relief efforts. The media were likewise affected and were frequently unable to check out leads, verify facts, or seek comment from appropriate officials. It is not unreasonable to expect a day when person-to-person communications will not be so vulnerable to weather.

The issue of interoperability looms large in Katrina and other disasters. No doubt the public would be astonished to know that emergency responders – even after Columbine and 9/11 – still cannot communicate with one another in times of crisis. Yet, this is the case. With different agencies using different communication systems, a fire department over here, can't talk with a fire department over there. But interoperability *is* achievable. What's lacking is sufficient will too make it happen. One has to wonder why the media have not taken up this issue as a national scandal.

The confusion and misinformation that plagued the news media during Katrina were also something of a national scandal. No one seemed to have the “big” picture. In many disasters or incidents, journalists can rely on a spokesperson to feed them information. The devastation of Katrina was so widespread that to expect one agency to be the mouthpiece to the media would be utterly impractical.

Nevertheless, coordination could have been better. FEMA might be the appropriate agency to provide accurate information about what resources are deployed, where, and why. Certainly during Katrina, FEMA was in no position to fulfill that role. Criticism of FEMA's competence during the disaster was withering and left the public wondering how the U.S. might rescue itself in a larger event. It also seriously eroded

FEMA's credibility. Presumably FEMA will repair its own inadequacies before being called up on such a scale in the future. If it does, then perhaps it will be in a position to provide vital information to the media (and therefore the public) that can save lives and bring relief.

The river of misinformation and confusion that was Katrina has too many tributaries to point blame in only one direction. It would also be self-serving since there was plenty of blame to be shared. A dispassionate review with an eye toward interagency cooperation, coupled with media's rededication to the principles of journalism, will strengthen the response the next time a Hurricane Katrina comes calling.

An Agency in Recovery

Karen Gardner

In March 2006, the General Accounting office (GAO) observed that the size and strength of Hurricane Katrina resulted in one of the largest natural disasters in our nation's history. How one component agency – the New Orleans office of the Federal Bureau of Investigation (FBI) – coped before, during, and after the storm provides some valuable lessons learned for managing law enforcement during a catastrophe. Given the FBI has nationally deployed resources in 56 field offices and 400 resident agencies, experiencing natural disasters (and recovering) is something the FBI has been through over and over again, each time learning valuable lessons. During its 98-year history, the FBI has developed expertise in a number of areas critical to overcoming catastrophes.

Background of Post-Land Fall Deployment

On August 26, the FBI's Jackson, Mississippi, Field Office notified its Resident Agencies in Hattiesburg, Pascagoula, and Gulfport, Mississippi, to implement their hurricane plans. Hurricane shutters were installed, vehicles were secured, computers were bagged, and safes were locked. The traditional FBI operations of the Jackson Field Office were moved to its Oxford Resident Agency in northern Mississippi. Prior to the landfall of Hurricane Katrina, the Special Agent in Charge of the FBI's New Orleans division, James Bernazzani, had made preparation for the continuity of his division's operations, including establishing a protocol for communications with his employees. In 1992, Hurricane Andrew struck a densely populated urban area in southeast Florida as a category 5 storm. This storm (Hurricane Andrew) provides the closest comparison to the

destructive power of Hurricane Katrina. Because of lessons learned during Hurricane Andrew, FBI offices now put a priority on locating all current and former employees during a major catastrophe. Accounting for his employees' whereabouts was a priority for Bernazzani, and the communications protocol has consistently worked well.

Hurricane Katrina made landfall at 6:10 a.m. on August 29th. The powerful storm generated a 27-foot storm surge, which overwhelmed levees along the Mississippi river and Lake Pontchartrain. As the hurricane made landfall, SAC Bernazzani and a small staff remained in the lakefront office on Lake Pontchartrain in order to maintain security of the FBI's records, equipment, and evidence. The damage wasn't pretty. Two of the four floors were heavily damaged, although no evidence in current investigations was lost. The storm ripped the roof off the building and case files and classified documents were drenched. The bureau practically moved Heaven and Earth to get the documents dried out before they mildewed and were completely lost. Bernazzani characterized the damage to the field office as a "direct hit." He said water damage and biohazards rendered the building uninhabitable, and even labeled Katrina a terrorist. A total of 138 parishes and counties were affected; the storm crippled 38 emergency calls centers (911 centers) in Louisiana, Mississippi, and Alabama. An estimated \$3 billion in government property alone was destroyed.

FBI air assets and personnel who remained on the Mississippi coast were used to determine the damage and security of the Mississippi offices. Within 12 hours of the hurricane's subsiding, the Jackson Field Office was in contact with all of its personnel. The Jackson Field Office established a Command Post at Keesler Air Force Base in Biloxi. On August 29, the Special Agent-in-Charge (SAC) of New Orleans surveyed the

damage to the New Orleans Field Office. Sixty percent of the top floor was uncovered. Due to the sensitivity of documents housed in the Field Office, the SAC and four agents remained at the building. The SAC ordered the move of the New Orleans Division to the Louisiana State Police headquarters in Baton Rouge. All FBI personnel living in Louisiana were accounted for by September 4th.

Prior to Hurricane Katrina, federal law enforcement had worked to prepare their coastal offices for Katrina's landfall. Immediately after the hurricane, these law enforcement agencies implemented their continuity of operations plans and began the process of locating personnel living in the affected areas. Within days, federal law enforcement offices began snapping up large pieces of commercial real estate on the north shore of Lake Pontchartrain in the town of Covington. On August 30th, FBI headquarters officials put their Field Offices on alert that additional personnel were needed in the affected area. Ten Special Weapons and Tactics (SWAT) agents from the Houston, Texas, Division were deployed to New Orleans to assist the New Orleans Police Department (NOPD) SWAT. These agents brought a boat that enabled them to transport personnel and supplies.

On September 1st, the Critical Incident Response Group (CIRG) deployed agents from the Dallas, Atlanta, Baltimore, and Houston SWAT teams and Hostage Rescue Teams (HRT) to continue to help NOPD control its affected area. The Violent Gang Task Force from the New Orleans Division worked out of the Gretna Police Department. Over 30 more agents coordinated with NOPD to back up NOPD SWAT, FBI SWAT, and HRT Special Agents. The FBI Command Post at Keesler Air Force Base in Biloxi, Mississippi, communicated with the Mississippi Bureau of Criminal Investigations, the

Mississippi Highway Patrol, the Homeland Security Director for the State of Mississippi, and local police and sheriffs to respond to requests for assistance. The FBI was able to create a Virtual Command Center for the Law Enforcement On-Line Internet site. All law enforcement nationwide were able to log onto the website and receive daily situation reports regarding FBI relief efforts.

The New Orleans Division set up a web page with valuable links to insurance information and the FBI's employee assistance program. Although administrative leave was authorized until October 1st (as necessary), employees reported in daily to the Shreveport, Louisiana, Resident Agency with their current address and telephone numbers (landlines and cellular numbers), the location and status of Bureau vehicles, their family situations, and their availability to work. Coordinated through FBIHQ, the employee assistance program offered emergency funds, lodging, and banking and insurance liaison services. The Justice Federal Credit Unit put together an emergency assistance package of personal and automobile loans as well as deferred payments on loans and mortgages.

SAC Bernazzani quickly called on other bureau resources, arranging for the deployment of personnel, equipment, and supplies from the FBI's Operational Technologies Division in Quantico, to Baton Rouge, where Bernazzani intended to temporarily relocate his field office operations should that become necessary. One beauty of the FBI's "surge" capacity is to be able to allocate additional personnel and resources in a time of crisis. Within a few days, there were nearly 500 agents and other personnel from around the nation on the ground in New Orleans to help secure the city, answer emergency calls, patrol the streets, stop the looting and conduct search and rescue

operations. In a large field east of Baton Rouge, as many as 300 agents were living in tents to support the hurricane relief.

Once the storm passed, FBI SWAT agents relieved SAC Bernazzani, and he immediately relocated to a mobile FBI command post in Baton Rouge, which provided him with the communications equipment needed to account for his personnel and re-establish FBI field operations. It became evident that the vast majority of FBI New Orleans division personnel were displaced. One-third of the agents and other employees were homeless.

On September 1st, the Office of the Attorney General directed several other federal agencies to identify personnel, assets, and other resources for immediate deployment to the areas impacted by Hurricane Katrina. By September 2nd with the inventory in hand, the Attorney General issued a memorandum to the agencies directing the FBI to continue deploying its special agents, including SWAT; and tactical assets, including helicopters, boats and technical/communications assets to the area. The DEA was directed to deploy Mobile Enforcement Teams of agents and tactical assets (including helicopters and other aircraft) to the area. The ATF established a Violent Crime Impact Team in Baton Rouge to address the rise in criminal activity in that city, and the US Marshals Service continued to deploy deputy marshals, and court security officers conducted prisoner transport operations and additional court security.

Ken Kaiser, who was the head of the FBI's office in Boston, was sent to Louisiana on September 1st and designated the FBI Tactical and Emergency Operations Commander. As such, he was responsible for all command and control of FBI tactical assets deployed to the affected area. His role was to coordinate and manage requests for

standard SWAT operations, including high-risk arrests or search warrants. He also directed the coordination, management, and execution of the critical infrastructure and site security operations requested by the Federal Emergency management Agency or other components of the Department of Homeland Security under the National Response Plan.

Upon Kaiser's arrival in New Orleans on September 1st, it was immediately apparent that the storm and its subsequent damage to the levees severely affected the ability of the New Orleans Police Department to performance effectively. Like the FBI personnel, the NOPD officers were dealing with personal losses, but unlike FBI personnel, they were without a supporting infrastructure and had depleted resources in the areas of communication, ammunition, transportation and food. It was estimated that as many as 70 percent of the NOPD were themselves victims. Effective law enforcement could not be carried out. There was a complete devastation of the communications infrastructure, which left first responders without a reliable network for coordinating emergency response. Also, many law enforcement agencies from around the country were beginning to send resources to New Orleans, and their efforts needed to be coordinated.

Under the National Response Plan (NRP), the Department of Justice and Department of Homeland Security (DHS) coordinate mechanisms by which federal law enforcement assets can be used to support state and local authorities with public safety and security related functions during an incident of national significance. The NRP also provides for a Senior Federal Law Enforcement Official to be appointed to oversee combined federal, state and local law enforcement responses during an incident of

national significance. The FBI identified another Special Agent in Charge, Michael J. Wolf of the New Haven (Connecticut) division, as possessing the experience and expertise to support this mission. SAC Wolf arrived in Louisiana on September 4th and began the process of establishing an effective method of command, control and coordination of law enforcement assets in New Orleans.

Along with Assistant Director Mike Vanacore, U.S. Immigration and Customs Enforcement, Wolf assumed the duties as the Senior Federal Law Enforcement Official (SFLEO). In order to address the identified gaps in the law enforcement response, SAC Wolf established something called the Law Enforcement Coordination Center (LECC). Unlike entities established under the national response plan such as the FBI Joint Operations Center, or the U.S. Secret Service Multiagency Command Center, the LECC was created as a solution to the unique challenges facing law enforcement in New Orleans after Katrina's landfall.

The LECC set about the task of coordinating, de-conflicting, tracking requests for, and providing law enforcement support. It organized and coordinated interaction among law enforcement, ensured communication between law enforcement efforts and those of the National Guard and Department of Defense, and provided limited investigative and criminal law enforcement resources until such time as the NOPD was able to maintain services without resources from other law enforcement agencies. Ironically, the LECC brought the New Orleans Police Department command element together for the first time after the hurricane struck. Further, they integrated federal law enforcement assets and personnel into the remaining local police structure. Within a day of their appointment, and for the first time since Katrina made landfall a week earlier, Wolf and Vanacore

brought together all the federal law enforcement agencies operating in the New Orleans area with the State police to coordinate efforts. The LECC was first established in Baton Rouge on September 5th and subsequently in New Orleans on September 6th. The rapid establishment of the LECC led to the rapid coordination of law enforcement activities and the restoration of law and order in New Orleans.

During the first week following the hurricane, local, state, and federal law enforcement working in New Orleans began daily 9:00 a.m. meetings at Harrah's Casino in downtown New Orleans. These meetings enabled law enforcement entities to meet face to face and coordinate critical missions. The New Orleans Police Department (NOPD) District Captain for each city district attended the meetings, along with the Bureau of Alcohol, Tobacco, Firearms, and Explosive (ATF), the Drug Enforcement Agency (DEA), the Federal Bureau of Investigation (FBI), and U.S. Immigration and Customs Enforcement (ICE).

By September 5th, an additional 556 federal officers, ranging from the U.S. Department of Agriculture to the U.S. Postal Inspection Service were protecting federal property and conducting search and rescue operations as well as assisting local law enforcement. Several agencies note that they were impeded in their ability to provide immediate assistance due to the need for state (and in some cases federal) deputation in order to enforce laws. In Louisiana, a state police attorney had to be physically present in order to swear in the federal agents. Under Louisiana law, FBI agents have qualified immunity that protects them when responding to felonies committed in their presence or when assisting state officers. However, FBI agents did not specifically have peace officer status when responding to Hurricane Katrina in Louisiana. Governor Blanco granted the

Louisiana Office of Attorney General authority to deputize FBI agents. All FBI agents deployed to Louisiana were deputized by a representative of the office. FBI agents deployed to Mississippi did not receive peace officer status until September 9th, when Governor Barbour wrote a letter to all state and federal law enforcement officers. The letter granted federal law enforcement officers working in cooperation with local law enforcement “the authority to bear arms, make arrests and to make searches and seizures, in addition to any other power, duty, right and privilege as afforded forces of the State of Mississippi.”

Initially, the Law Enforcement Coordination Center (LECC) was stood up at LSP headquarters in Baton Rouge. Vanacore arrived at the Louisiana State Police (LSP) headquarters in Baton Rouge on Sunday, September 4th. At the time, Vanacore understood his role was to work with the ICE New Orleans Agent-in-Charge, Michael Holt, and report to ICE headquarters in Washington, D.C. on ICE’s mission in the area affected by the hurricane. Late that evening, Vanacore was informed of the decision to designate him SFLEO. He was instructed he would share SFLEO responsibilities with Wolf. Wolf arrived in Baton Rouge on Monday, September 5th. The same day, Vanacore reviewed an unsigned letter designating him and Wolf as SFLEO.

Vanacore and Wolf had their first meeting late on September 5th. On September 6th, it was clear to Vanacore and Wolf that they needed an operations center to coordinate federal law enforcement efforts in New Orleans. The center was then designated the LECC. The LECC did not have command and control over the federal law enforcement missions. Rather, it served as the point of contact for all federal law enforcement in the greater New Orleans area. The missions of the LECC were to coordinate efforts to

reestablish the NOPD and efforts of all law enforcement agencies' deployed resources to the New Orleans area. According to Vanacore, the main mission of the LECC was to ensure officer safety.

On September 6th, officials from the LECC, including Vanacore, met with the Mayor of New Orleans, the City of New Orleans Homeland Security Director and counsel for the Mayor. Officials also met with the NOPD precinct captains. Vanacore reported the Mayor's office and NOPD were "very helpful" and worked well with the LECC. The LECC had little communication with the Louisiana Governor's Office, but Vanacore and Wolf both said interaction with the Governor's office was not necessary to achieve LECC's goals. Wolf brought additional FBI agents with him to Baton Rouge, as well as a "Blue Whale Command," the FBI's mobile command station, specially equipped with office and communication equipment. Vanacore stated the mobile command center was invaluable to standing up the LECC.

By September 7th, the LECC was gathering and centralizing information, to ensure there were not duplicate law enforcement missions. The LECC divided the federal law enforcement entities by New Orleans police districts. Each federal law enforcement agency was responsible for coordinating with the precinct captain of the district. The LECC also began daily 8:00 a.m. meetings with representatives from state and federal law enforcement. ICE, FBI, DEA, ATF, USMS, U.S. Customs and Border Protection, including the Border Patrol, the National Guard, the U.S. Attorney's Office from New Orleans and Baton Rouge, the Office of the Louisiana Attorney General, LSP, NOPD, and the New Orleans Fire Department were all represented at the meetings. The City of New Orleans Homeland Security Director also attended the daily meetings. In addition,

the U.S. Secret Service, the Sheriff's Association, and the Federal Air Marshals participated on a limited basis. CBP and FBI provided helicopters to transport attendees to and from New Orleans and the LECC for the meetings. The daily meetings commenced with Wolf reporting the number of arrests and incidents from the prior day. There was then a roll call of all attendees to report their force numbers. Vanacore summarized the daily events on his blackberry and communicated to Jon Clark at ICE headquarters in Washington, D.C. Wolf communicated with FBI Headquarters.

As the LECC worked from Baton Rouge, it became apparent to Vanacore and Wolf that in order to achieve its goals, the LECC needed to be located in New Orleans. On September 9, the LECC and NOPD moved into the Royal Sonesta Hotel on Bourbon Street. The LECC and NOPD each had a conference room, and an additional room was used to receive incoming 911 telephone calls. The LECC worked with NOPD to assist in "standing up" the police department. There were eight NOPD district offices in New Orleans. Four were rendered useless due to insufficient power, and four were flooded. LECC acquired air conditioning compressors and generators for the district offices that needed power. Temporary office space was procured to replace the flooded offices. The evidence and property rooms for the NOPD were under either under water or rendered useless by mold.

The LECC assisted NOPD with procuring contractors to recover and process the evidence and property, and clean NOPD headquarters. As a result of stolen uniforms, destroyed homes, and displaced New Orleans police officers, NOPD was patrolling the city without proper uniforms. The LECC was able to procure temporary battle dress uniforms from the Federal Supply Schedule maintained by the General Services

Administrations (GSA) for acquisitions by federal agencies. By using GSA for the uniforms, the NOPD did not have to use its local procurement process, which would have required three separate bids before purchasing new uniforms. In addition, the LECC located photographers to create credentials for LECC and NOPD guards and officials at the Royal Sonesta. LECC provided lights and generators to assist 15 police checks points. Supplies were provided for crime scene processing, including gloves and masks to protect police from mold. Both Vanacore and Wolf reported the LECC had a positive working relationship with NOPD and that the department was receptive to LECC's assistance.

The February 2006 congressional report investigating the Hurricane Katrina response credited federal law enforcement as a crucial enabler to the reconstruction of NOPD's command structure and the larger criminal justice system. This leadership enabled federal assets to be integrated into local police structures and even aligned the responding federal law enforcement assets to the corresponding NOPD districts. Federal law enforcement agencies also played a major role in restoring law and order after Hurricane Katrina. Specific agencies included the U.S. Attorney's Office, FBI, DEA, ATF, USMS, ICE, Secret Service, Customs and Border Protection, Border Patrol, and Federal Air Marshal Service. The first priority for most of these agencies was implementing continuity of operations plans — locating their people, securing their workplaces and sensitive information, getting supplemental manpower from other field offices, and otherwise fully restoring their mission capabilities. These federal agencies then turned to assisting state and local law enforcement agencies. These agencies brought a wide array of capabilities and tactical teams to help restore and maintain law and order.

Most of the federal personnel were deputized as state law enforcement officials, so they could fully partner with local police by participating in patrols, investigating crimes, and arresting suspects. The FBI deployed its Critical Incident Response Group and ATF deployed one of its Special Response Teams. ATF located and inspected federal firearms and explosives licensees to determine if their facilities were secure. USMS assisted with evacuating prisoners from flooded jails into federal facilities. FAMS provided security at the New Orleans Airport.

Conclusion

First the levees were breached—and then law and order. As Katrina left people scrambling for food, for water, for supplies – for survival — lawlessness and violence, both real and imagined, spread, creating yet another problem for authorities who were burdened enough already. The lack of basic necessities for residents who did not evacuate, or went back to their homes too quickly, contributed. As was the case in Pearl River County, Mississippi, once there were sufficient amounts of food, ice, and water, order was restored.

Another problem was the uncertainty about evacuations. Confusion reigned, especially in places like the Superdome and the Convention Center, where conditions were terrible, nerves frayed, people desperate. Compounding these difficulties was the collapse or absence of law enforcement. The police, in some cases, were unable to function or were diverting their attention to search and rescue operations. The New Orleans Police Department had known of the threat that could arise from flooding, yet could not properly protect its resources or come close to continuity of operations.

The federal, state, and local governments also lost another battle, this one with the media. Exaggerated press reports scared away truck and bus drivers who could have furnished people with much-needed supplies. Authorities needed to be on top of this situation, not victims of these circumstances.

Fortunately, the National Guard in all three affected states were able to help out overburdened local authorities. About 20 other states added support, an effort that prevented a dire situation from being much worse. DOD active duty forces also came through, their mere presence serving to reduce tensions. Federal law enforcement agencies played an important role, as well, with additional forces, leadership and supplies.

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Stress and Psychological Effects

Bernard H. Levin and Joseph A. Schafer

Introduction

A short, historical context for stress responses is in order. The labels we use and the performance expectations we have are shaped by the historical era. For example, today we talk about “post-traumatic stress disorder” (PTSD), while a century and a half ago we spoke of “soldier’s heart” in the context of the U.S. Civil War. World War I had its “shell shock,” while World War II had its “combat fatigue” (this was the first time psychiatrists were added to U.S. Army division Table of Organization and Equipment). The Korean War had its screening for “section 8’s,” and Vietnam anti-war protesters brought us PTSD. Cultural change also has its effects. Over time in the U.S., we generally have increased our population’s dependence on government rather than on kith and kin. Thus, expectations of individual initiative, hardiness, and independence have faded a bit with the decades.

Since 9/11, and again with Katrina, we have been inundated with the “heroism” of emergency services workers doing their jobs, and with the stress, post-traumatic stress disorder, and general dysfunction of those faced with disasters of various sorts. The authors of this article submit that the commonly held views of heroism and stress response are both inter-related and misplaced.

The United States has an acute shortage of heroes. Few in this country other than the old have combat experience (the Gulf War, Gulf II, and Afghanistan to the contrary notwithstanding). We look for heroes where we can, often labeling as heroes those who are merely doing the jobs for which they were hired (sports figures and emergency

services workers) and as “victims” those who were recipients of no physical harm at all. In essence, we have become accustomed to dramatizing the routine.

In so doing, we have unintentionally created problems. We have defined heroism down, treating the ordinary as if it were exceptional. A consequence of that is that more people perceive what they have done or endured as outside the range of normal human experience, and thus they give themselves permission to demonstrate symptoms of stress. It is crucial to realize that the response of people to stress depends greatly on their expectations. If we expect stability, it becomes a more likely outcome. We are more likely to send a message that we expect stability if we set performance expectations high.

The standard definition of post-traumatic stress disorder includes a broad range of symptoms. The diagnostic criteria offered in the DSM-IV (American Psychiatric Association, 2000, pp. 467-468) include:

Diagnostic criteria for 309.81 Posttraumatic Stress Disorder

- A. The person has been exposed to a traumatic event in which both of the following were present:
 - 1. the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others
 - 2. the person's response involved intense fear, helplessness, or horror. **Note:** In children, this may be expressed instead by disorganized or agitated behavior
- B. The traumatic event is persistently re-experienced in one (or more) of the following ways:
 - 1. recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. **Note:** In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
 - 2. recurrent distressing dreams of the event. **Note:** In children, there may be frightening dreams without recognizable content.
 - 3. acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur on awakening or when intoxicated). **Note:** In young children, trauma-specific reenactment may occur.
 - 4. intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
 - 5. physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
- C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:
 - 1. efforts to avoid thoughts, feelings, or conversations associated with the trauma
 - 2. efforts to avoid activities, places, or people that arouse recollections of the trauma

3. inability to recall an important aspect of the trauma
 4. markedly diminished interest or participation in significant activities
 5. feeling of detachment or estrangement from others
 6. restricted range of affect (e.g., unable to have loving feelings)
 7. sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)
- D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by two (or more) of the following:
1. difficulty falling or staying asleep
 2. irritability or outbursts of anger
 3. difficulty concentrating
 4. hypervigilance
 5. exaggerated startle response
- E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.
- F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

The careful reader will recognize that such symptoms are not uncommon, even in people who have neither engaged in war nor been involved in a major natural disaster or a terrorist-related event.

As pointed out by Summerfield (2001), post-traumatic stress disorder “is an entity constructed as much from sociopolitical ideas as from psychiatric ones” and “...the story of post-traumatic stress disorder is a telling example of the role of society and politics in the process of invention rather than discovery” (p. 95). Summerfield is far from alone in his conclusions. The authors suggest that Summerfield’s conclusions are correct, but at least six other forces are operative as well.

First, by creating another diagnosis that fits many people, those in the “helping professions” enhance their ability to be compensated for their services. Although some may dismiss this conclusion as cynical, health insurance companies in the U.S. generally do not pay for services unless a diagnosis has been made.

Second, directly applicable to police, we have come to expect that difficult but common circumstances (e.g., serious injuries, horrific accidents, and deaths) will create mental disorder. There is much literature that demonstrates that we will perceive what we

expect, in spite of contrary facts and/or circumstances (see Heuer, 1999; Krauzlis & Adler, 2001; Koyama et al., 2005). The effect of expectation applies also to psychological responses to stressors, e.g., Fields (2000). In general, those who expect more pain, get it. Thus, by emphasizing risk of psychological injury secondary to stressful events, we likely are inviting what we fear.

Third, we engage in rituals, such as critical incident stress debriefings that have a dubious empirical basis and may increase the likelihood that any minor or temporary dysfunctional behaviors will be brought to the forefront. Thus, we ignore the empirical finding summarized by Bonanno (2005, p. 135) that, “Resilience (not recovery) is the most common response to potential trauma.” If we were to take Bonanno seriously, we would focus only on high-risk individuals rather than wasting time and money as well as encouraging the law of unintended consequences by broadly requiring or even offering treatment for people exposed to various putatively traumatic situations.

Fourth, by encouraging cynicism and pessimism in many police cultures, we unwittingly enhance the likelihood that dysfunctional behaviors will occur and that they will be detected as PTSD. If we expect dysfunction, we are more likely to perceive it, whether it is present or not.

Fifth, “considerable research attests to the health benefits of expressing negative emotions” (Bonanno, 2005, p. 137). In many police cultures, the “strong, silent” type is rewarded. Thus, we may be rewarding people for behaviors that encourage unhealthiness. That “expressing negative emotions” can have health effects does not, however, imply that every means to do so is either wise or safe. For example, critical incident stress debriefing has been shown to cause more problems than it solves, possibly because of

patient expectancy, self-focused attention to symptoms, motivation to change, and sociocultural role-enactment cues (Bootzin and Bailey, 2005).

Sixth, a diagnosis of PTSD is encouraged by various economic and legal factors, including the possibility of pay for not working (disability payments, sick leave) and a socially acceptable exculpatory explanation for a variety of bad behaviors. None of this implies that PTSD never occurs; rather, it indicates that PTSD can become a conscious or unconscious justification for alcohol abuse, infidelity, abuse of authority, or the need for paid time-off from work.

Evidence on Prevalence and Significance of PTSD

While reading newspaper headlines and listening to television news would lead one to conclude that people are inherently fragile and vulnerable to traumatic events such as 9/11 and Katrina, the available scientific evidence (e.g., Bonanno, 2005; Bonanno et al., 2006) is far more reassuring. How many citizens develop symptoms of PTSD in the first place, and who are they? Recent evidence of the effects of 9/11 on inhabitants of New York City (Bonanno et al., 2006) states, “not many” and “not who you’d suspect.”

Some people might expect that the elderly are vulnerable to psychological damage due to trauma. Wrong. Bonanno and his colleagues (2006) found that those 65 years of age and older were by far the most resilient age group within the population. The most vulnerable age group was those 25-34 years of age. Results of an interesting study of flood victims (Huerta and Horton, 1978) were similar, e.g., “Resilience and fortitude were much more apparent among the elderly than among younger respondents

who expressed more despair”(p. 541). For a summary of other research supporting that conclusion, see <http://www.apa.org/psychologists/pdfs/olderadults.pdf>.

Most might correctly guess that married people did far better than those not married. Some might correctly guess that males were much less vulnerable than females (or would at least be less likely to admit to such vulnerabilities in a self-report survey). However, few would correctly guess that unmarried couples did far worse than any other group (married, divorced, separated, widowed and never married). In fact, the “unmarried couple” category did worse than any other demographic group within the population. Some other variables operate as most might expect. For example, the rich did much better than the poor, and the educated did much better than the uneducated. Asians did far better than whites, African Americans, Hispanics, and other racial/ethnic groups.

One might assume that soldiers who were seriously injured in battle would consistently meet the criteria for PTSD. That assumption seems reasonable since serious physical injury should be far more stressful than simply being in an area where a bad thing happened (explosion, hurricane, or other possibly traumatic event). One would be wrong. Greiger et al. (2006) show that at the peak time they observed (seven months’ post-injury) only 12.2 percent of seriously injured soldiers had PTSD.

There are additional predictors of mental health problems secondary to trauma. For example, Elhai et al. (2006) showed that “recent use of mental health care and intensity of use were related to female gender and greater frequency of trauma” (p. 1505). Dekel et al (2003) showed that performance on the field of battle predicted long-term adjustment. Specifically, they found that even though decorated war heroes had the highest exposure to battlefield stressors, they were the least likely to suffer long-term

psychological consequences of combat. Heinrichs et al. (2005) followed firefighters for two years following basic training. They found “A high level of hostility and a low level of self-efficacy at baseline accounted for 42% of the variance in posttraumatic stress after 2 years” (p. 2276). In other words, those who were hostile and who rated their own capabilities as low were at high risk for PTSD.

Resilience – A Much-Underestimated Capacity

Resilience is typically defined as the capacity to maintain healthy, symptom-free functioning following a potentially traumatic event (Bonanno et al., 2006). These authors also defined resilience as self-reporting either zero or one symptom of PTSD, six months after 9/11. That is a rigorous definition of resilience, since many people who have undergone no traumatic stress at all will demonstrate a symptom or two. Still, based on their definition, more than 70 percent of males and almost 60 percent of females in New York City and nearby were resilient to the effects of 9/11.

McNally et al. (2003) show that strong social networks and high intelligence protect people against PTSD. On the other hand, having demonstrated previous emotional problems places a person at greater risk of PTSD. That said, McNally et al. join a majority of researchers in saying that, “... the vast majority of trauma survivors recover from initial post-trauma reactions without professional help” (2003, 45). Further, they are not persuaded that much of what gets called professional help is really helpful. Some likely cause more problems than they solve. Purveyors of post-trauma services seem sometimes to have forgotten the first dictum of human services: First, do no harm.

Furthermore, even those affected psychologically by trauma need not abandon hope. For example, “4 months after September 11th, the prevalence of PTSD in the population of Manhattan living below 110th Street as measured by two cross-sectional surveys declined to 34.1 percent of the prevalence of PTSD 1 month after the event.” (Galea et al., 2004). In other words, two thirds of those showing symptoms of PTSD a month after the event were not showing such symptoms three months later. That people with psychological symptoms and diagnoses often get better on their own (aka “spontaneous remission”) is well-established – the literature on such phenomena goes back more than half a century (Eysenck, 1952).

Various mental health services possibly help individuals recover more quickly. Still, however true that may be, no matter what one tries, there is a financial cost and a potential human cost. At present there is little evidence that post-trauma treatments are effective and efficient for emergency responders in general or for others who experience traumatic circumstances, absent a prior showing of psychological damage beyond the first several months post-event. Until and unless the evidence becomes much stronger, the wise manager will look with a cautious eye prior to investing in such activities.

What This Suggests About Our Officers and the Populations We Serve

Reviewing the available literature offers key suggestions for police and civic leaders as we consider how officers and communities will be affected by disasters. First, the most psychologically stable members of the general population are likely to be Asian, married, male, highly educated, and older than their peers. Although we do not know that the same factors are predictors of officer stability, there is at present no reason to believe

otherwise. Police leaders must weigh potential legal challenges against differential assignment – assigning to the most stressful tasks those who have as many of the above characteristics as possible.

Second, to the extent that we value performance under stress, and possibly taking legal challenges into account, we should consider designing our officer selection processes to favor the above characteristics and also screen out those who are hostile and who judge their own capabilities to be lower than average.

Third, we should consider monitoring the performance of officers who appear to lack sufficient social support networks; this will allow us to be in a position to support them as needed. People who have substantial social networks may be more resistant to stress. Further, those officers who perform in an exemplary manner during a stressful event may be the least likely to exhibit symptoms of PTSD. Officers who have solid social networks should not be ignored or denied mental health services, but should also not receive an equal share of limited resources. The criminal justice system often emphasizes focusing our finite resources on those most in need of assistance; the realm of mental health services and police PTSD should be no different.

Fourth, we should explain – repeatedly -- to officers that mass trauma events typically do not traumatize everyone or even most, despite what the news media say. They will do much better if they expect to be resilient. This notion has implications for both formal training and informal communications occurring within agencies.

Fifth, together with other human services agencies, we should plan to provide support and structure for neighborhoods whose inhabitants are poor, non-Asian minority, poorly educated, or young single parents. On the other hand, if resources must be

rationed – and typically they will have to be rationed -- the wealthy and well-educated elderly can largely be left to fend for themselves psychologically.

Sixth, both citizens and officers who are well-prepared, have been trained, and have run through disaster scenarios will be well-suited to weather, both physically and psychologically, whatever disasters occur. Thus, at a minimum emergency training offered by FEMA and Community Emergency Response Team (CERT) training (<https://www.citizencorps.gov/cert/>) ought to be made generally available and participation by all community members encouraged.

Seventh, in most studies, three-fourths of the populations exposed to trauma prove resilient. That bit of information, although it does not sell airtime or newspaper space, is vital to keep front and center in planning for mass casualty events. The authors do not mean to imply that some officers and civilians will not develop and retain serious psychological damage. Rather, we wish to convey that such folks will be a minority of those populations. In addition, we hope that the above suggestions will help agency leaders use scarce financial and human resources in a manner consistent with the (admittedly imperfect) available evidence.

Concluding Questions and Caveats

It should be noted that the analysis conducted by Bonanno et al. (2006) generally did not account for how multiple demographic and experiential variables might simultaneously influence stress-related outcomes. We await future analyses that will enable us to better examine the interaction of multiple variables. Recovery alone is not, of course, the only treatment outcome that might be of interest. While psychological

recovery is clearly of central importance, we might also wonder about the speed of recovery and possible collateral problems associated with a recovery. The available research does not address whether or not some individuals recovered more quickly and with fewer problems (i.e., periods of substance abuse, marital strife, high blood pressure, etc.) than other individuals. Officers and civilians seeking professional help may (or may not) recover more quickly and with fewer (or more) collateral problems than those recovering by other means. We simply do not know.

Whether the proportion of those suffering PTSD is acceptable or not is something individual organizational leaders need to evaluate. Approximately 1-in-8 (from Grieger, et al, 2006, and taken as a high estimate since it was of seriously wounded combat veterans) is an appreciable amount of a labor force, but we also know that many affected individuals will recover on their own with time (Eysenck, 1952; Galea et al., 2004).

How can police organizations develop resiliency among employees and a healthy internal social environment in order to produce constructive outcomes? Police and other first responders will always be exposed to factors that could generate PTSD; given this reality, how do we integrate healthy coping mechanisms into social environment? What can police leaders and organizations do to create informal environments in which officers can process and express their emotions? Developing an organizational culture that supports common emotional and psychological needs could provide a way to minimize and respond to PTSD and other reactions to traumatic incidents.

Finally, as has often been noted, the most significant stressors for most officers are internal to the department. It is likely the case that we worry unduly about the effects

of stressors external to the organization and not nearly enough about the effect of stressors generated by corrosive organizational cultures.

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Does Accreditation Help an Agency in Mass Casualty Events? **Gerald Konkler**

Accreditation for police agencies can be accomplished through a variety of state agencies. A Google search reveals a minimum of 11 states that provide an accreditation process on a state basis. National or international police accreditation is even more limited. The only agency that provides such accreditation is CALEA[®], the Commission on Accreditation for Law Enforcement Agencies, Inc. This discussion will be limited to accreditation through CALEA.

The Commission was formed in 1979 through the efforts of the National Organization of Black Law Enforcement Executives (NOBLE), the International Association of Chiefs of Police (IACP), the National Sheriff's Association (NSA), and the Police Executive Research Forum (PERF). The Commission's 21 members are appointed to terms of 3 years by majority vote of the executive directors of these major law enforcement organizations (CALEA, 2006).

According to CALEA, the organization was created to:

- Increase agency capability to control and prevent crime
- Increase the ability to provide effective and efficient law enforcement services
- Increase cooperation and coordination within the criminal justice system
- Increase citizen and employee confidence in the goals, objective, practices, and policies of the agency
- Provide an accreditation process that gives agencies an opportunity to voluntarily demonstrate compliance with an established set of professional standards (Standards, 2001, xiii).

Accreditation provides an agency the opportunity to illustrate that it voluntarily meets established standards which, among other things, requires that the agency have a

preparedness program to address natural or man-made critical incidents (Standards, 2006, xv).

Agencies are required to address 459 standards to attain accreditation. According to the Commission, these standards reflect best practices and professional requirements for law enforcement. According to CALEA, the “standards state *what* must be accomplished by the agency but generally allow wide latitude in determining *how* to achieve compliance with each applicable standard.” By dictating only the “what” rather than the “how,” the agency retains independence and compliance can be achieved in a variety of ways (Standards, 2006, xvii). The distinction between working toward the end-state of *what* must be accomplished, rather than following a template of *how* it will be accomplished can be critical.¹ To address particular local conditions, an agency must be given the flexibility to adjust business practices in response to the changing nature of policing and responding to critical incidents.

Part and parcel of the accreditation process is the concept of “written directives.” Many, if not most, of the standards require that the agency have a written directive addressing a particular issue (see for example, footnote 1). A written directive is “(a)ny written document used to guide or affect the performance or conduct of agency

¹ An example of the ‘what’ not ‘how’ is illustrated by Standard 1.3.3 which requires an accredited agency to have a written directive governing warning shots. The standard does not require that an agency prohibit warning shots (although the commentary to the standard does seem to discourage the use), only that the agency particularly describe the circumstances under which officers may use them. This permits a modicum of local control despite the emphasis on the national/universal standards inherent in any accreditation process.

employees. The term includes policies, procedures, rules and regulations, general orders, special orders, memorandums, and instructional materials.” (Standards, 2006, A-14).²

Critical incidents are primarily addressed in Chapter 46 of the Standards Manual. In the Fourth Edition, the chapter is titled “Unusual Occurrences and Special Operations” (Standards, 2001). This edition became effective in November 2001. In apparent recognition of the increased risk of acts of terrorism, the Fifth Edition changes the title to “Critical Incidents, Special Operations, and Homeland Security” (Standards, 2006). The standards have also been changed to reflect this increased risk. The Fifth Edition was adopted by the Commission with an effective date of July 2006 (CALEA Update, 2006).³

In both editions, the standards reflect the use of the Incident Command System (ICS). The later edition notes that the standards are consistent with the structure of the National Incident Management System (NIMS) and recognize that ICS is a component of NIMS (see www.fema.gov/nims). The question can be raised whether these are Industrial Age models that are of questionable relevance in the Information Age—particularly if we in policing continue our reliance on bureaucracy and blind adherence to following chains of command.

Relevant Standards

CALEA Standard 46.1.1 requires a position in the agency that is responsible for planning for critical incidents. This position is designated as the principal planner and

² While in theory there may be enough flexibility built into this definition to permit the innovative approaches to policing that will be necessary in the future, it remains to be seen whether there will be sufficient flexibility in practice. It is critical that policing have the ability to explore new and different approaches.

³ It is perhaps noteworthy that almost 5 years elapsed after the attacks of 9/11 before the more specific standards addressing homeland security were adopted. While it may be typical of policing, one of the more bureaucratic industries, to take this long to address an issue, we must in the future be quicker (not to mention more willing) to adapt to change and adopt new ways of doing business.

advisor to the agency's Chief Executive Officer. It is also suggested that this position be charged with the responsibility of expediting resources (Standards, 2006, 46.1.1).

Certainly a position such as this and the ability to quickly obtain resources are vital elements in addressing critical incidents.

An agency is required to have an "All Hazard" plan for responding to disasters, civil disturbances, acts of terrorism, and other unusual occurrences or critical incidents. This plan must follow the protocols of ICS and address command, operations, planning, logistics, and finance/administration. These protocols are discussed more fully below. The commentary (a non-binding narrative to the standard designed to provide direction) states that ICS "has proven very effective in federal and fire service emergencies over the past two decades." Additionally, it is noted that standardized management processes, protocols, and procedures inherent to the Incident Command System will permit a coordinated response and allow responders to share a common focus. The standardization will allow responders to "place full emphasis on incident management when a critical incident occurs—whether terrorism or natural disaster" (Standards, 2006, p. 46-2). While there are examples of ICS being effectively used over the years, the process has been widely questioned in the wake of Hurricane Katrina. Policing must be prepared to question the status quo of industry practices, including ICS.

The command function of ICS is required to address, *inter alia*, activating the system, establishing a command post, obtaining other agency support, maintaining safety of affected personnel, and preparing an after action report (Standards, 2006, 46.1.3). The operations function is a tactical component and must address perimeters, evacuations, traffic control and direction, and post-incident investigations (Standards, 2006, 46.1.4).

The planning function requires agencies to prepare an action plan, gather and disseminate intelligence, and plan post-incident demobilization (Standards, 2006, 46.1.5). The logistical issues, including communications, transportation, medical issues, suppliers, and specialized team and equipment needs must be addressed in the All Hazard Plan (Standards, 2006, 46.1.6). Under the finance/administrative function, issues relative to personnel time expended in the incident, resource procurement and other expenses, and documenting injuries for potential liability must be addressed (Standards, 2006, 46.1.7).

Equipment used in critical incidents must be inspected monthly according to the Fourth Edition (Standards, 2001, 46.1.6) or quarterly according to the Fifth Edition (Standards, 2006, 46.1.8). Annual training on the All Hazard Plan is required. This can be either field training or tabletop exercises, but all affected personnel must receive the training (Standards, 2006, 46.1.9). The standards relating to ICS and NIMS other than annual training are applied to every sized agency. Agencies with fewer than 25 sworn and non-sworn personnel are exempt from the training requirement (Standards, 2006, 46.1.9).

In recognition of the increased probability of terrorist attacks, the Fifth Edition has created a new section of standards regarding homeland security. These standards require that all accredited agencies maintain liaison with “appropriate agencies for the exchange of information relating to terrorism” (Standards, 2006, 46.3.1) and have procedures for forwarding terrorism-related intelligence/information to “the proper task force or agency” (Standards, 2006, 46.3.2). The importance of effectively sharing information and intelligence cannot be overemphasized.

An “other than mandatory standard” (an agency can opt to not meet 20% of standards characterized as other than mandatory) requires that the agency provide terrorism awareness training within its jurisdiction. According to the commentary, this training should address how to report suspicious activity that might be related to terrorism. This training can be accomplished using public and private community organizations and individuals (Standards, 2006, 46.3.3). Involving the public in identifying such activities is consistent with Neighborhood Driven Policing (Levin & Myers, 2005).

Neighborhood Driven Policing (NDP) is described as a partnership between the neighborhood and the police, differing from Community Oriented Policing (COP) in that in NDP, the neighborhood members through a board are the senior partners. The neighborhood members/board makes decisions formerly made exclusively by police, such as resource allocation and outcomes assessment. In addition, the neighborhood serves as a resource. Training them to recognize suspicious activity, which could potentially avert a critical incident, would enhance the vision of NDP, particularly using citizens as a resource.

An accredited agency in the United States must have chemical, biological, radiological, nuclear (CBRN), and hazardous materials awareness level guidelines and follow Department of Homeland Security standards for CBRN equipment for its first responders (Standards, 2006, 46.3.4). There are other standards that might relate to critical incidents. For example, Standard 11.2.1 relates to unity of command and requires that each employee be accountable to only one supervisor at a given time (Standards, 2006, 11.2.1). The fundamental nature of the Incident Command System and/or the

flexibility suggested in Network Centric Policing (Cowper, 2005; see also Myers & Cowper in this volume) could conceivably be at odds with an application of this principle applied too strictly. The counterargument should be that even in those situations, at those times, the employee DOES only report to one supervisor.

An agency is required to have procedures for purchasing or renting equipment in emergency situations (Standards, 2006, 17.3.1). Having procedures to obtain resources and identifying the position responsible for expediting resources (see the earlier discussion regarding 46.1.1), will assist an agency in providing needed equipment to responding officers.

It can be argued that the above standards do indeed represent the current state of what is considered effective and efficient policing. After all, having directives in place detailing how to deal with a critical incident, ensuring that equipment is in a state of operational readiness, and regularly training personnel on how to deal with unusual occurrences are marks of an efficient agency: it is doing things right. A more appropriate consideration might be whether or not these standards are the mark of an effective agency: one that is doing the right things. The ultimate question is whether the standards are consistent with where policing should be going. The very characterization of CALEA requirements as “standards” implies a standardization that may not be appropriate in the Information Age. This is particularly true if one considers the move toward networking in policing and other endeavors. As noted, accreditation standards are said to reflect what issues need to be addressed by the agency rather than specifying exactly how to address the standard. In addition, while NIMS has been described as being a balance between standardization and flexibility (FEMA, 2006), it could be argued that NIMS continues the

institutionalization of bureaucracy in policing. As noted by Cowper (2005), the Information Age requires less emphasis on bureaucracy and standardization and more emphasis on flexibility through networking and self-synchronization.

Accreditation, on its face, is not antithetical to new methods of critical incident response and can, in fact, be useful to an agency in ensuring that it “has its ducks in a row,”— i.e., that it meets national standards of efficiency and effectiveness. In light of responses to recent disasters, one could question whether or not the standards established in the past will still be valid in future policing efforts. It appears that following existing protocols did not provide effective response to Hurricane Katrina. Is that indicative of future disasters? In any event, it is suggested that the typical application of ICS can be mired in a bureaucratic mode that adversely impacts service to those in need and the recovery from the incident. The future calls for a move toward networking, potentially less, rather than more, upward communication, and a move toward values based responses rather than rule-based responses. That is, in critical incidents, “protect and serve” has to take precedence over rules and “running things up the chain.” In the world of accreditation, with an emphasis on written directives, moving from a rules-based system may prove difficult. It is necessary that national, state, or local accreditation groups be ready to change rapidly and be less rigid in their efforts/requirements for written directives and plans cast in concrete. Even if accrediting agencies reflect the necessary flexibility, the question then becomes: will the policing industry accept the move away from the bureaucracy that is so engrained in our culture?

If the standards of accrediting agencies and NIMS will be (or **can** be) interpreted to allow the degree of flexibility needed, then a process for revising standards in a timely

manner to address new methods of policing will need to be developed. Society can ill afford to wait years to address these issues. If society will accept incremental change, broader interpretations and tweaking standards will work. If, as some advocate, widespread institutional change is needed in policing, the standards of NIMS and accrediting agencies will need broader change to address new modes of policing. One can rest assured that policing will be changed. If those of us involved in policing don't reinvent the industry, it will be reinvented for us...likely in a manner or to an extent we do not like.

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A Path Forward for Policing
Gerald W. Konkler & Bernard H. Levin

What lessons can police learn from the public safety response to Hurricane Katrina? It is critical that the police industry and other government agencies understand the dynamics of the responses to disaster and realize that we cannot afford to continue with business as usual. Those who would harm the United States most assuredly observed the government response to Katrina and saw opportunities for future attacks. If one subscribes to the theory that every crisis brings opportunity, the response to Hurricane Katrina presents policing with an opportunity to learn and improve upon our response to future natural and manmade disasters.

Policing Must Do More Than Pay Attention To Advances In Technology. We Must Participate In The Development Of Technologies.

It seems clear (but worthy of repeating) that policing has traditionally been and remains resistant to change, including technological change. Without a more innovative, adaptable attitude, policing will continue to be outdated by advances in technology. Our tendency is to be drawn only to those devices which we perceive as enabling us to capture the bad guy more efficiently or effectively, those devices that allow us to do our “traditional” jobs better...i.e., the law enforcement part of policing. Police administrators can generally depend on the rank and file to keep them fully informed (read that as nag them) when a new weapon is developed or on the horizon. The problem is that this is a limited view of the benefits of technology for policing.

It is important that the policing industry participate in the development of devices that enhance the ability to respond to disasters. One of the specific areas that we must

address in the near future is communications, and communications among agencies during emergency situations is a high priority. The International Association of Chiefs of Police has a “Communications and Technology Committee”¹ responsible for distributing information and making recommendations regarding the advancement of technology and its practical use in police service. In addition, much discussion occurs annually at the conference of the IACP’s Law Enforcement Information Management section (<http://www.iacptechnology.org/>). While progress has been made, problems abound.

Communications is particularly critical when the traditional bureaucratic Incident Command System is implemented but is also vital in networking scenarios. This is true whether the emergency is due to a terrorist attack or a natural disaster. Communications difficulties were at the forefront of the problems in New Orleans during and after Hurricane Katrina. The inability to communicate in and around the city exacerbated a terrible situation and likely resulted in additional loss of life and property.

Communications failures between agencies – more often due to turf battles than to technology failures – are only part of the problem. Communications failures within agencies are legion. Some, as in the Katrina affair, are solidly based in technology failures – hardware died in the face of Katrina – but turf, hierarchy, and failure to decentralize, among other factors take their toll.

Policing must continually strive to develop communications systems that connect various first responders. Interoperability gets a great deal of attention, but the lesson from recent events may be that we need to think beyond agencies talking to fire departments or neighboring agencies. After Katrina hit, New Orleans’ public safety

¹ http://theiacp.org/div_sec_com/committees/Comm_Tech.htm, accessed 03 July 2006.

radios and satellite phones couldn't be recharged. Landline telephones and cell phones went out (*Time*, 2005). We need to think how we do our jobs if the entire system is down. How do we respond if there are no phones? How many agencies have contingency plans and have trained for situations in which the telephone system is down and radios don't work? Undoubtedly, those bent on committing terrorist acts saw what happened in New Orleans. Whether communications are destroyed by terrorist act or natural calamity, police have to adapt. It is critical that we explore innovative ways to communicate when traditional communication methods are disrupted. In virtually all emergencies, it will be at least 72 hours before federal assistance arrives.

Police agencies and the industry need to become more involved in the use of technology that helps fulfill our mission. Robotics, for example, including unmanned aerial vehicles (UAVs), can be valuable in critical incidents. These devices expand surveillance ability of the police to areas where it is too dangerous or impossible for a person to go.

There were opportunities following Hurricane Katrina to utilize UAVs. Unfortunately, these robotic, fixed wing aircraft and helicopters were not used to the extent they could have been. Rescue experts asked for assistance from the Center for Robot Assisted Search and Rescue (CRASAR), but the group was unable to enter New Orleans because of the lack of an escort and the escalation of disorder. These UAVs were successfully used in Mississippi to examine areas rescuers had been unable to evaluate. In the words of Robin Murphy, director of CRASAR, "Katrina was a series of frustrations, and a series of wonderful things from a scientific perspective" (Walton, 2005).

Murphy was talking about robotic tools. In addition, we learned much about communication and human behavior in such environs. As each disaster hits, our ability to detect and report in real time increases, and thus increases our capacity to collect lessons learned.

It is important that the policing industry embrace the use of technologies such as the UAVs. Such devices can extend the eyes of officers and permit a much more effective and efficient use of manpower. However, until policing begins to value building relationships with those who develop technologies – even neighborhood cybergeeks – we will remain technologically antiquated. That, in turn, will reduce our capacity to protect and serve.

Murphy noted that it takes government an average of seven to eight years to begin to utilize new technology (Walton, 2005). In our view, Murphy is not realistic. Much of government relies on technology decades old. Even new technology is often trammelled unnecessarily with old constraints. For instance, when some criminal justice record checking systems moved from teletype to computer monitor, the same inflexible text formats were maintained.

In light of recent events and the criticism leveled at government response, one would hope the seven-to-eight year time frame can be shortened. Advanced technology could be useful to policing in a variety of scenarios – from looking for lost children to conducting surveillance. That UAVs and other technologies are useful in more routine ways will expedite the adoption of new technology. If we get used to using drones in everyday policing, implementing them on a widespread scale will happen quickly.

Policing Must Foster A Self-Reliant Attitude In The Public, The Rank And File, And The Leadership In Policing.

Just as in policing in general, the voluntary cooperation and assistance of the public is critical while dealing with natural or manmade disasters. The ability of the public to cope with and overcome adversity is frequently underestimated. It is too often assumed, particularly by the police that people will panic and have to have assistance from the government or others. This can become a self-fulfilling prophecy.

Sociologists who study disasters characterize the assumption that people panic during disasters as a myth. Russell R. Dynes, one of the founders of the Disaster Research Center, states that “The panic myth is a consistent one. The idea of social breakdown—I’m even pretty damn skeptical of that. One of the problems here is TV. If you take a film clip and run it for five hours, you create a notion that something’s happening” (Glenn, 2005). In other words, people respond to repetition as if it signals increased importance, which often it does not.

Disaster sociologists suggest that the idea of people panicking after critical incidents is a problem of semantics. When they are asked what happened, they state that they panicked. They then describe actions that are logical and which protected themselves and others. What they mean by panic is that they were very frightened. Disaster sociologists believe that people generally do well when faced with a crisis. They may need assistance with food, water, and shelter, but they may not need direction and control provided by the military and outside authorities (Glenn, 2005). What they could use, however, is clearly stated expectations that they will be on their own, and some knowledge and skills to use if/when the opportunity arises.

Since citizens have more abilities and strengths than they have been given credit for, government's role should be to empower citizens to address the problems head on. Police (and the government in general) should be less paternalistic and instead assume a role of cooperation and partnership with citizens after disasters. The talents and expertise of the citizenry must be tapped in order to appropriately respond to terrorism and natural disasters. While this might occur spontaneously, as it did on 9/11 with the boats ferrying people off Manhattan (Glenn, 2005) and citizens helping others after Hurricane Katrina, this self-reliance must be fostered and developed. Indeed, this cooperation has occurred with Community Emergency Response Teams (CERT), [discussed in more detail below].

Before this self reliance can be effective, the initial question might be whether or not policing will accept this assistance. The police have not exactly been receptive to accepting any outside assistance. The resistance from the rank and file to community policing and other attempts to work with those being policed has been well documented. This reluctance to give up control is also evidenced by the chasm between many police departments and fire departments. We don't always work well with others when we think we're not going to be in charge. The policing industry needs an attitude adjustment, a paradigm shift in thinking, if the use of the expertise of others and a shift to self-reliance in critical incidents is to take place.

Police are used to being the hub in the wheel of community policing. We need to get used to being simply one of the spokes. Perhaps that is one of the best parts about the Incident Command System (ICS). The training and exercises inherent with ICS should force the mindset of cooperation and coordination with other agencies and entities. Although examples abound of separate command posts for police and fire (and anecdotes

aplenty in police stations and fire houses of non-cooperation), there are examples of these agencies working well together to accomplish goals. We recommend there be more examples of ICS that incorporate groups and individuals and private sector entities not considered traditional emergency servants.

It is axiomatic that this shift in thinking and ability/talent/whatever to utilize expertise will require not only that the leaders of police agencies change their views, but also that the rank and file adjust their attitudes. Policing in general is not good at change. If policing is to foster self-reliance, we must get better at fostering change. Under some circumstances, we will have to get better about accepting decentralizing, a shift in the locus of leadership to those trenches.

David Brin, author of *The Transparent Society* and *The Other Culture War: Beleaguered Professionals vs. Disempowered Citizens*, suggests that there were two lessons from 9/11 and Hurricane Katrina. First, resilient citizens can be prodigious assets in a crisis if they are empowered. Second, when resilient citizen action is quashed, the crisis will grow worse. He views what happened in New Orleans as an example of the latter. What he calls the Professional Protector Caste (PPC) has been downplaying citizen resiliency in an effort to protect turf. This protectionism is instinctive, he says, and not the result of evil intent. Nevertheless, according to Brin, the one-shared theme throughout government action during Hurricane Katrina was “a nearly uniform reflex to quash autonomous citizen action” (Brin, 2005, 4).

According to Brin, the PPC reflexively protects its turf by resisting citizen empowerment. He worries that without change, this could result in a culture war between the PPC and empowered amateurs. Because policing has fomented the 911 mentality –

call emergency responders, and they will take care of whatever ails you – we have made this kind of problem much worse. The change he hopes for (but does not see coming without struggle) is a time when educated, technologically-empowered citizens participate in maintaining a robust civilization by looking over the shoulders of professionals and backing them up as needed (Brin, 2005). Will policing permit this to be imposed on them, or will police recognize that this is the future and embrace it? Our future (and the future of society) will be more attractive and easier if we embrace it. Resistance in this case (as with the Borg) would be futile.

The individual police officer must develop a self-reliant attitude. The same lessons Brin applies to the relationship between the government and citizens are applicable to the relationship between police administrators and the rank and file. As was seen in several cases in New Orleans, in critical incidents without communication, the beat officer of the future must think outside of the box, not wait for orders from above, and illustrate an innovative spirit. After Katrina, officers improvised by commandeering vehicles, rescuing stranded citizens, searching flooded areas, and generally operating autonomously (Perlstein, 2005). Training to handle critical incidents must include instruction and direction on improvising responses. Officers must understand how far they can legally go in emergency situations. The defense of necessity must be understood to permit appropriate responses.

Police administrators will have to not only permit but foster innovation and improvisation in their troops. Innovation and improvisation are not characteristics for which the industry is known. To the contrary, police administrators have traditionally had difficulty relinquishing control to either citizens or the rank and file. Both of these groups

have expertise that must be tapped. Police administrators must be particularly careful to not overreact to actions taken during times of emergencies that would not be appropriate in the absence of crisis. When communications are down, when people need food and water, when lives are at stake, the rules must be relaxed. Just as the law recognizes a defense of necessity, police administrators must as well. Just as most citizens recognize that leadership can emerge quite separate from the formal hierarchy, administrators must recognize the same.

The lesson to government and particularly police administrators is this: Get out of the way of citizens and the rank and file and allow them to use the expertise, knowledge, and creativity they have. Channel the expertise and energy for the good of society. Leave the turf battles behind.

Police Training And Critical Incident Exercises Must Be Changed To Address People And Situations That Have Never Before Been Included.

The police have trained with other public safety agencies in the past, and these have not always been pleasant or effective experiences. In some cases, the joint training has almost been like getting a vaccination: Time for the annual ICS exercise; assign the least senior lieutenant or captain to the fire department's command post and get through it. In the future, police must make better use of this training and these exercises. In addition to being fully engaged with other entities, we must incorporate as many of our personnel as feasible. In addition, we should foster interdepartmental connections when there is no need. Relationships must be built and maintained outside of an emergency context if they are to be effective inside an emergency context.

We must also include citizens. One type of group that is already in place is the Community Emergency Response Team (CERT) created under the Federal Emergency Management Authority (FEMA). This group might be reminiscent of some of the civil defense exercises and block wardens of the Cold War Era. CERT members are trained in disaster response skills including fire safety, medical operations, and search and rescue. Citizens who take the CERT course may be better able to respond and cope with the aftermath of disasters. In addition, if the community so desires, CERT members can be utilized as auxiliary responders (FEMA, 2005). Police training, tabletop exercises, and field exercises are critical and must include citizens and CERT members. In addition, police agencies should encourage the formation of CERT where the teams don't currently exist. Brin calls CERT a glimmer of hope and notes that it is a step in the right direction. (Brin, 2005).

CERT teams could also potentially connect to other developing constructs within the world of policing. For example, Neighborhood-driven policing (Levin and Myers, 2005) provides an expanded theoretical home for CERT. Both CERT and neighborhood-driven policing are compatible with decentralization, initiative, and empowerment necessary for functioning in the case of disaster. Consider the time-worn notion of the cop as street-level communicator, the beat cop who knows everybody and garners and applies resources from citizens to citizens, the problem-solving facilitator rather than the combatant. Perhaps that beat cop's best time is during disaster.

Most of us saw television reports of evacuations of from New Orleans and Houston during the recent hurricane season. It's not surprising that in those areas where hurricanes frequently occur, evaluation plans are more refined and training occurs more

often than other parts of the country. Still, the products generated by these plans and training remains unimpressive.²

The current (November 2006) *Nationwide Plan Review* does not mince words.

The current status of plans and planning gives grounds for significant national concern. Current catastrophic planning is unsystematic and not linked within a national planning system. This is incompatible with 21st century homeland security challenges, and reflects a systemic problem: outmoded planning processes, products, and tools are primary contributors to the inadequacy of catastrophic planning. The results of the Review support the need for a fundamental modernization of our nation's planning processes.³

It is hard to find comfort in that statement.

Recent events also bring to mind those areas of the country that are NOT subject to hurricanes. In the Midwest—tornado alley—the disaster springs up without time to consider evacuation. Instead, the emphasis is on shelter. But what if a weapon of mass destruction or an epidemic targets the Midwest or other areas without experience in massive evacuations? Sheltering in place may not be either possible or safe – even with all the duct tape in the world. Training in the incident command system must include potential scenarios that include evacuations – even in areas that don't normally experience hurricanes.

Exercises must also include scenarios involving massive outbreaks of disease and include quarantine planning and training. To address the possibility of a super-flu epidemic, the federal government has outlined guidelines in the event of a pandemic. If the bird flu mutates to more easily spread among the human population or if another super-influenza strain strikes, travel restrictions could be imposed. In addition, state and

² For example, see http://www.dhs.gov/interweb/assetlibrary/Prep_NationwidePlanReview.pdf , accessed 03 July 2006

³ Op. cit, p. viii

local governments would be charged with rationing medication. They would triage the ill to prevent overwhelming hospitals and spreading the disease (CNN.com, 2005). The possibility of terrorists spreading disease also exists. Whether a natural epidemic or by terrorist act, will local law enforcement be prepared to deal with these situations?

Imagine a scenario in which officers are assigned to prevent anyone from leaving a city or state. Is it possible that an officer might let his or her family or friends out of the quarantined area? Is it even possible that an area can be effectively quarantined in a country that doesn't have the fortitude to effectively seal its borders?

At least some in policing are considering the issues involved with quarantines. The International Association of Chiefs of Police has suggested that agencies first determine their legal authority to institute quarantines (Friend, 2005). Then agencies should plan, prepare, and train personnel in the process. Radical though it may seem, input from the community should be solicited. Absent such a solicitation, any methodologies adopted risk disaster upon implementation. The call from IACP to prepare for quarantine should be echoed by others in government and police administrators need to ensure that rank and file personnel are prepared.

Community cooperation will be critical in the success or failure of isolation and quarantine efforts. It is self-evident that understanding and communication facilitate new ideas and change. If the public and the rank and file in policing are to cooperate in the event of a natural or manmade disaster, they must understand the necessity of actions. This means joint training and mutual participation in the planning, and it must be relevant participation – symbols will not suffice. In other words, the public and line officers must be brought in from the beginning. This cannot be a duct tape solution that is forced upon

people. The intelligence, innovation, and expertise of street officers and the public must be utilized. See the discussion above regarding CERT. If your neighbors helped plan the evacuation or quarantine and they explain the need, you will likely be more receptive to following instructions. This is particularly true if you were advised in advance and helped make preparations on a local level.

Conclusion

It would likely take outside pressure, unrelenting and powerful, to blast policing off of the tradition-bound role of what we believe we ought to be. While we choose not to speculate as to possible sources for such pressure, recent events – natural disaster as well as terroristic – may serve as a catalyst.

When public sector technology fails – and in disasters it often will – we must learn to think outside of the box. Solutions abound if only we will look for them. They range from horseback messengers and privately owned boats to renting network capacity from private sector providers who have found a way to stay operational. Policing’s bias against change must give way to the changes in the world we serve.

Unless we recognize the need to participate in the development of technology, unless we understand that people are no longer content to follow blindly the dictates of government, unless we understand that citizens have as much information at their fingertips as the government does, policing runs the very real risk of being left in the dust, functionally irrelevant. The new paradigm can be forced on us or we can participate in designing the new policing model for disaster response. The choice is, as it always has

been, ours. We need to recognize it and step up to the plate with a little less (a lot less?) attitude about our expertise and what is needed.

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Afterward: A Brief Note on Other Issues
Joseph A. Schafer and Bernard H. Levin

It is the purpose of this afterward to mention some issues worthy of consideration by future thinkers and writers. The National Response Plan¹ demonstrates the federal government's plan for handling future large-scale critical incidents. Decentralization does not seem to have been considered; bureaucracy and other failed hierarchical principles abound. The current top-down hierarchical models have not served well in the recent past, do not serve well today, and will serve poorly tomorrow. Time and again experience illustrates how hierarchy and bureaucracy fail to meet the needs of service consumers, from those affected by disaster, to those seeking clarification on an income tax concern, to those applying for federal medical benefits. The question is not whether bureaucracy and hierarchy are dying organizational strategies; the question is when society will recognize that alternative approaches are needed (and might actually be preferable).

Dominant organizational models used for modern disaster response were developed some 150 years ago to maximize efficiency during the Industrial Revolution. They were highly functional in coordinating predictable activities (industrial production) in fixed areas (factories) with the communications, data collection, and analysis technologies and capacities of that era. Can these industrial-age strategies translate well into the chaotic and geographically diffuse realm of modern disasters, given the opportunities afforded by contemporary technologies to enable communication, data acquisition and analysis, and resource management? To believe that hierarchies would

¹ <http://www.dhs.gov/xlibrary/assets/NRPbaseplan.pdf>

serve well under these conditions foredooms society to failed responses in the future. Incident command and the National Response Plan must be reformulated to take advantage of modern technology and resources; they must be planned with an eye toward more flexible, adaptable, and dynamic organizational structures. Net-centric approaches are but one possible alternative and their utility in this arena remains largely untested; nonetheless, they remain the only other potentially viable organizing principle in town.

Our society's fixation with outmoded organizing principles is not the only problem it faces. Some areas of policing have received far too little attention for the risk of mass casualty events they pose. Consider derailed trains, explosions at electrical power transmission facilities, accidents affecting petroleum storage facilities and pipelines, and natural disasters (e.g., floods, tornados, earthquakes, blizzards). All have produced mass casualty events, often with police muddling through rather than acting out timely, pre-planned responses. Terrorist organizations devote considerable time thinking of new ways to wreak havoc; do emergency response organizations spend enough time imagining the possible threats within our communities?² It has been noted that the military often fights the last war, using outmoded strategies and tactics, as well as responding to an enemy we are not longer fighting. Is there an analogy in disaster planning? Do response plans tend to seek improved responses to the challenge of

² One example is piracy, a thriving entrepreneurial activity. So far we have been very lucky that the consequences of piracy have generally been limited to loss of cargo and a few lives. A review of the *Weekly Piracy Report* (<http://www.icc-ccs.org/prc/piracyreport.php>) and a bit of imagination likely will give one pause. Alternatively, consider the collision of M/V Springbok and LPG Carrier M/T Gas Roman on 27 February 2003 (http://www.cargolaw.com/2003nightmare_t-bone.html). What likely would have happened if the positions of the two ships had been reversed (the gas carrier t-boned by the freighter) and near a port? What might have happened if this incident had been provoked by terrorists, rather than occurring as an unfortunate accident?

yesterday, rather than seeking a better response to the threat of tomorrow? There is evidence of improved planning and strategies within this domain, yet much room exists for further improvements.

The above natural disasters and accidents could have been much worse. To date, domestic terrorists not taken capitalized on the opportunity to further the havoc created by these events. Domestic terrorists have been to this point committed to events that require significant planning-- and that very planning has created points of vulnerability against them. Consider how things could change if terrorists became more opportunistic, taking advantage of natural disasters, interstate crashes blocking roads, large-scale power outages, or derailed commuter trains.

If government, emergency service providers, and other involved parties are going to improve future disaster responses, there are myriad questions that must be answered. There are, however, deficiencies that must be addressed, including:

1. Encouraging large numbers of both residents and transients to become prepared and resilient. Officials seem to have belatedly recognized the necessity for developing such independence from government (e.g., Goodnough, 2006). It remains unclear how best to foster and cultivate such an independent spirit and capacity

2. Goodnough writes: "Convinced that tough tactics are needed, officials in hurricane-prone states are trumpeting dire warnings about the [upcoming] storm season, ...preaching self-reliance and prodding the public to prepare early and well" (2006). To what extent should the police teach self-reliance for policing-related problems? How is it best to deliver that instruction? Can the likelihood that people will put their learning into action be increased? How? Partly this is a political question; partly it is a question of

mission, but largely it is an empirical question – what works? The answer to this question remains largely unknown in both the realms of policing and disaster response.

3. “Among the most needed types of research are studies that compare systematically the unique circumstances of catastrophic events such as major earthquakes, hurricanes, and acts of terrorism. Such comparative studies will allow researchers to examine societal response in relation to variables such as the amount of advanced warning, the magnitude, scope and duration of impacts, and the special requirements for dealing with chemical, biological, and radiological agents. Among the report’s other recommendations is the need for systematic studies of how societies complement expected and sometimes planned responses with improvised activities.” (Committee on Disaster Research in the Social Sciences: Future Challenges and Opportunities, 2006, p. 3). Existing structures and models have repeatedly proven inadequate, yet we continue to embrace these venerable but rigid, inflexible, and ill-suited plans. Researchers need to be forward thinking, considering how alternative responses and organizational strategies might better enhance responses to large-scale incidents. Net centric approaches offer some promise (Levin and Jensen, 2005; Myers, 2006), but they remain unproven within this arena.

4. How does economy of scale affect agency performance? For example, with many actors and much damage, the response to Katrina was generally recognized as unsatisfactory. On the other hand, the FEMA response to a recent (October 2006) 6.7 magnitude earthquake near Hawaii³ was without flaw.⁴ The FEMA staff in Hawaii numbered only three. Was the reported performance rating accurate? If so, was it a

³ <http://earthquake.usgs.gov/eqcenter/eqinthenews/2006/ustwbh/>

⁴ <http://www.kesq.com/Global/story.asp?S=5662206>

function of simplicity and small size? Would similar variables affect the quality of police response?

5. Even though the behavior of people under fire-related conditions has been studied by Gershon, Groner, and others during the past quarter of a century,⁵ there is little scientific research regarding how people behave during police-related emergencies. What is the best way to clear an area or building? What is the best way to keep citizens out of the way of on-going risk? What is the best way to gather information from people on the scene? What is the best way to minimize disorder and crime during mass movements of people and vehicles? What is the best way to . . . ? Once again the answers are, regrettably, unclear.

6. Related, a recent RAND study (Meade & Molander, 2006) pointed out that little is known about the policy and economic consequences of terrorist attacks. It is encouraging that society has begun to understand “targeted acts of terrorism, focused on critical economic infrastructure, could produce cascading social and economic effects over very wide scales” (Meade & Molander, 2006, p.1). Most police training that is related to mass casualty events focuses on problems immediately prior to and immediately following mass casualty events. Consider is rarely given to events that could last more than a week (epidemics, radiological contamination, loss of utilities infrastructure, electromagnetic pulse, etc.) or that might generate effects remote from the original reporting site (e.g., Buerger’s chapter in this volume). Since policing still serves a community caretaker function, continued ignorance of these matters could prove costly.

⁵ <http://www.apa.org/monitor/sep04/fighting.html>

Whole domains remain unexamined. What will be the effect of changes in population demographics on responses to and prevention of mass casualty events? It is evident that the population of the U.S. is aging rapidly, despite the relative youth of recent immigrants. These immigrants will provide needed labor, but at the same time will affect American culture and bring additional challenges (perceived or real) both to homeland security and to existing social structures (Jensen and Levin, 2006). What will be the effects of globalizing economics and declining relevance of geopolitical boundaries as they pertain to mass casualty events? It is increasingly evident that massive social, political, and economic changes that are affecting law enforcement missions and functions worldwide. Our current police staffing levels and organizational models as well suited to preventing and managing mass casualty events in America's emerging social, economic, legal, and political future (Levin, 2004)? What will be the effects of looming changes in technologies (e.g., nanotechnology, widespread adoption of bioidentification) and communications patterns?

We should consider what Fukuda-Parr says: "Every technological advance brings potential benefits and risks, some of which are not easy to predict" (2001, p.65). In particular, predicting how technological change might affect mass casualty events has not been seriously considered. As a final example, what is the relationship between terrorism and safety of the individual officer (Buerger and Levin, 2005)? Is it time for serious work studying officer safety in the context of terroristic mass casualty events? As amply evidenced by 9/11 and Katrina, until quite recently the possibility had not been considered at all. Further exploring all of these areas is needed to better understand, predict, and respond to the mass casualty events of tomorrow.

All of the above are, in the words of Donald Rumsfeld, “known unknowns.”⁶ There are critical questions that at present cannot be answered in even the most basic terms. Perhaps even more troubling are the “unknown unknowns,” i.e., scenarios and threats that have not even been considered and about which nothing is known. The present volume does not attempt to illuminate these “unknown unknowns;” rather, the authors attempted to offer visions of the work that still needs to be done in order to enhance community safety and security in response to future large-scale, long-term, and mass casualty events, whether natural, accidental, or man-made.

The authors included in this volume have not hesitated to criticize policing agencies for their flaws. However, these gaping lacunae in knowledge of disasters are real and salient. Given the current level of ignorance, police cannot reasonably be expected to work on an ad hoc basis to serve their communities well. Police do not and cannot know what to do until researchers have investigated the problems described above and until policy developers have applied that research to the problems discussed throughout this volume. Until researchers and others meet the need, police agencies and leaders will be forced to “muddle through” rather than function as skilled professionals. The police should be “at the table” when discussing, researching, and developing policy on the questions spelled out above, but in most cases there are others better suited for conducting (and funding) needed research.

When all else fails, readers are reminded that mass casualty events will usually yield limited positive outcomes over time. These events can serve to jerk loose solidly entrenched corruption, inefficiency, and general sleaze (U. S. Government Accountability

⁶ <http://www.slate.com/id/2081042/>

Office, 2006; Hanson, 2006). The challenge is maximizing positive changes. Mass casualty events are tragic in their own right. Failing to maximize the learning potential they present does a disservice to the lives lost and places future lives at unnecessary risk. U.S. history has pointed our society into important directions; our leaders need vision, courage, and foresight to pursue new avenues of inquiry and alternative models for improved responses. That our nation hold fast to outdated and dysfunctional methods augurs ill. Our work is cut out for us. Whether we in policing and in related research communities will prove competent and productive remains to be seen.

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Karen Gardner is a retired Special Agent with the FBI, having spent 23 years specializing in criminal and public corruption investigations in four field offices and two headquarters assignments. She retired in 2006 from the FBI Academy, where she led the Investigative Training Unit, which provided instruction in investigative and intelligence collection techniques to every new Special Agent hired since 9/11. Prior to entering on duty with the FBI, Karen worked for Edelman Public Relations, the nation's fifth largest public relations firm, as a lobbyist handling government and public safety accounts. She is a 1977 graduate of the University of South Florida with a degree in communications, and a double graduate of the University of Virginia (2002 and 2006) with a master's and doctorate in education. Karen currently consults in the intelligence community as a senior course designer and intelligence educator, designing custom certification courses, evaluating programs, and mentoring faculty. Karen and husband Ted and son Jack live in Northern Virginia, and spend time watching Jack excel at lacrosse and in highland bag piping competitions.

Carl J. Jensen, III is a retired Supervisory Special Agent with the Federal Bureau of Investigation. In his career with the FBI, Dr. Jensen served as a field agent in the Atlanta and Youngstown, Ohio, offices, as a Forensic Examiner in the FBI Laboratory, and within the Behavioral Science Unit. Dr. Jensen was the founding Chairman of the Futures Working Group, a collaboration between the FBI and the Society of Police Futurists International. Prior to joining the Bureau in 1984, he served in the Weapons Department aboard a nuclear fleet ballistic missile submarine. He currently works for a private research firm.

Gerald W. Konkler was employed by the Tulsa Police Department for 30 years. After retiring at the rank of Captain in 2005 he continued with the Tulsa Police Department as Accreditation Manager. He holds a Bachelor of Science in Business Administration and a Juris Doctor, both from the University of Tulsa. In addition, Konkler attended the 150th Session of the Federal Bureau of Investigation National Academy and the 4th Session of the FBI's National Law Institute for Police Legal Advisors. In addition to being a charter member of the Society of Police Futurists International, Captain Konkler served as

President of that organization. He is a member of the National Academy Associates, the Oklahoma Bar Association, and the Tulsa Police Sertoma Club.

Bernard Levin is department head/psychology at Blue Ridge Community College. He has worked in laboratory, law enforcement, correctional and other organizational settings, and has led a variety of professional and civic organizations. At present, he is director, research and development, of the Society of Police Futurists International and vice chairman of the Futures Working Group. He also serves as visiting scholar at the FBI Academy and is commander, policy and planning, at the Waynesboro Virginia Police Department.

Richard W. Myers is chief of police for the Colorado Springs Police Department. He has previously served as police chief for communities in Illinois, Michigan, and Wisconsin. Since 1977 he has held varying appointments, such as police officer, deputy sheriff, public safety officer (police and fire), and Medical Examiner Investigator. Myers is a graduate of Michigan State University (BA and MA), the FBI National Academy (156th Session, 1989), and the FBI LEEDS Seminar (26th Session, 1992). His leadership experiences include past Presidencies of the Wisconsin Chiefs of Police Association, the Society of Police Futurists International (PFI), and the Wisconsin Police Executive Group.

Andreas (Olli) M. Olligschlaeger is the president of company that develops state-of-the-art information systems for use by law enforcement and provides consulting services to assist law enforcement agencies in integrating emerging technologies into daily operations. Formerly a systems scientist at Carnegie Mellon University, Dr. Olligschlaeger has practical experience working with law enforcement agencies in narcotics enforcement, crime analysis and criminal intelligence. His work in correctional intelligence has included the automated mining of and topic detection within speech recognized text derived from inmate telephone calls, as well as using multi-modal query and visualization techniques for correctional intelligence analysis. Dr. Olligschlaeger holds a B.A. in Geography from Concordia University an M.A. in Geography from the University of British Columbia, an M.Phil. in Public Policy from Carnegie Mellon University, and a Ph.D. in Public Policy, also from Carnegie Mellon University.

Joseph Schafer is Associate Professor in the Center for the Study of Crime, Delinquency, and Corrections at Southern Illinois University Carbondale. He is a graduate of the University of Northern Iowa and Michigan State University. Dr. Schafer is actively involved in researching police organizations, police behavior, and police operations. He is the author of *Community Policing: the Challenges of Successful Organizational Change* (LFB Scholarly: 2001) and the editor of *Policing 2020: The Future of Crime, Communities, & Policing* (Federal Bureau of Investigation). Dr. Schafer is 2006-2007 President of Police Futurists International and a member of the Futures Working Group.

Alan Youngs is a former division chief of the Lakewood, CO police department, where he served for 33 years. He is currently a practicing attorney and a law enforcement and security consultant residing in Colorado. He is past-president of Police Futurists International and a member of the Futures Working Group.

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