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DOES NETWORK CENTRIC WARFARE EQUAL MICROMANAGERIAL WARFARE?
MINIMIZING MICROMANAGEMENT AT THE OPERATIONAL LEVEL OF WAR.

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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03 February 2003

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Abstract of

DOES NETWORK CENTRIC WARFARE EQUAL MICROMANAGERIAL WARFARE? MINIMIZING MICROMANAGEMENT AT THE OPERATIONAL LEVEL OF WAR.

Recent advances in communications, sensors, and computers have brought the U.S. military into a new age of technical transformation. This transformation has resulted in a new approach to the conduct of warfare, often referred to as network centric warfare (NCW). NCW possesses incredible potential for the lethal and efficient conduct of future wars, but it also enables a less than desirable aspect of armed conflict--leadership by micromanagement. This is a result of the capabilities inherent in NCW that cause senior leaders, unable to resist the urge to control tactical operations, to directly influence the achievement of strategic objectives.

The intent of this paper is to examine micromanagement at the operational level of war, more specifically, from the national-strategic (civilian leaders) and theater-strategic/theater-operational (COCOM) level to the tactical level. Analysis from recent military operations will be conducted to develop short term and long term approaches that will minimize the effects of this ineffective leadership style.

Introduction

Fast forward to the year 2010. *The New York Times is reporting today on the establishment of a revolutionary Unified Command Plan which will incorporate the network centric capabilities of WORLDNET. Today, all nine of the former combatant commands will merge and fall under the command of one individual, Commander U.S. Forces, World. "WORLDCOM" will have at his disposal a worldwide fleet of armed UAVs and will be able to communicate with soldiers in the field via Combat VTC capabilities. At the click of a mouse, WORLDCOM will be able to provide close and offensive air support from his console at WORLDCOM Headquarters in Key West, Florida.*

Obviously, this fictional way of war is an exaggeration of future command structure, but the technology available to WORLDCOM is a distinct emerging reality in today's military. The technological advances in communications, sensors, and computers have brought the U.S. military into a new age of technical transformation. Some have argued that these technological advances, on display in Afghanistan, have changed forever the way war is fought.¹ This change is a new approach to the conduct of warfare, often referred to as network centric warfare (NCW), and is defined as "an information superiority-enabled concept of operations that generates increased combat power by networking sensors, decision makers and shooters to achieve shared awareness."²

This shared awareness allows the civilian leadership and the Combatant Commanders (COCOMs) to maintain a higher level of situational awareness (SA) than that experienced in any conflict to date. The heightened SA of strategic leaders, beneficial in many ways, has tempted them to direct operations at the lower levels of war by micromanaging tactical operations.

This technology, present in a more rudimentary form during the Vietnam era, allowed President Johnson and his staff to personally select and direct targeting of politically sensitive targets – the epitome of civil-military micromanagement.³ Today’s civilian leaders are guilty of the same errors made by President Johnson over three decades ago, the experiences of Operation Allied Force highlighting these mistakes. During this operation, President Clinton, as well as the NATO Secretary General, approved every target for attack; this occurred despite the fact that “no other military in the world seeks to decentralize crucial decision-making power as much.”⁴

NCW possesses incredible potential for the lethal and efficient conduct of future armed conflicts, but it also enables a less than desirable aspect of armed conflict--leadership by micromanagement. In today's age of digital technology, bureaucratic politics, and CNN instant imagery, some senior military and civilian leaders, in order to directly influence the achievement of strategic objectives, may find the urge to direct tactical operations irresistible. By doing this, these leaders are wasting their valuable time, weakening the decision making skills of subordinates, and setting a poor precedent for future operations.

The intent of this paper is to examine micromanagement at the operational level of war, more specifically, from the national-strategic (civilian leaders) and theater-strategic/theater-operational (COCOM) level to the tactical level. This paper will conclude with recommendations for an approach that will assist in minimizing the effects of this ineffective leadership style.

The reader must understand that this is not an attempt to denigrate NCW, but rather a hard look at the questionable leadership styles that net-centric capabilities may produce. Operations in Grenada, Panama, Kosovo, and Afghanistan will be examined to provide

lessons learned as to senior leadership styles in net-centric operations. Obviously, volumes have been written about what went right and what went wrong in each of these operations; this paper will only concentrate on micromanagement that centered around the operational level of war.

General George S. Patton once said that "wars may be fought by weapons, but they are won by men. It is the spirit of the men who follow the man that gains victory."⁵ Effective leadership wins or loses war, not the informational network behind the leaders.

Network Centric Warfare

In 1998, Admiral Arthur Cebrowski proposed that NCW was the result of recent advances of information technology in the business world, to include network centric computing and high speed data networking. These advances significantly increased value for the business customer; this same value was proposed as achievable in warfare. In warfare, NCW proponents claim the shift to digital technology allows forces to develop speed of command, increase battlespace awareness through a common operating picture (COP), and increase combat power.⁶ This battlespace awareness would permit a flattened, decentralized command structure, with decisions made at the lowest practical level of command.⁷ The flattened command structure, more productive than traditional systems, is a result of the shared awareness that is provided by information.⁸ Proponents of NCW claim that the COP, combined with a clear understanding of the commander's intent at all levels, will eradicate the need for more traditional hierarchical command and control (C2) structures. This flatter C2 architecture will supposedly allow operations to self-synchronize from the bottom up, allowing the accomplishment of mission objectives without the traditional top-down approach.⁹

Critics of NCW are concerned about the supposed shared awareness and speed of command proposed by net-centric operations. Professor Vego of the Naval War College writes that, "having a common operating picture will lead operational commanders to be increasingly involved in purely tactical decisions, instead of focusing on the operational and strategic aspects of the situation."¹⁰ The availability of instantaneous data, which translates into instantaneous SA at all levels of command via the COP, will collapse the perception as to what is tactical versus operational versus strategic.¹¹ This creates a scenario where national and theater strategic decision makers are bypassing the operational level of war, also referred to as merging the levels of war.¹² This merging is made possible by NCW digital technologies which give strategic decision makers the ability to provide direct inputs to tactical operators.

Micromanagers, "give employees tasks to do and then meddle by overanalyzing every minute detail involved with the job in order to make sure that it is 'done right.' Decisions are constantly second guessed, individual problem-solving is shunned, and trust is thrown out the window."¹³ This private sector definition is fully applicable in today's military, but a distinction needs to be made regarding micromanagement. The request for information alone does not condemn a leader to deserve the title of micromanager; it is generally accepted that good leaders prefer to remain informed, and, in fact, a good leader *must* remain informed. A micromanager is the type of leader who transfers that information into minute decisions. Some relevant examples follow.

Grenada and Operation Urgent Fury*

"Although the joint task force (JTF[120]) accomplished its mission, things went wrong."¹⁴ The things that went wrong in Grenada were the lack of "jointness" in the

operation, specifically the lack of joint training, joint planning, and the overall poor execution of joint operations. Micromanagement from the White House and the Joint Chiefs of Staff (JCS), while attempted, was minimized by the JTF Commander, Admiral Joseph Metcalf.

Witness to the interaction between the National Command Authority (NCA) and the on-scene commanders during the Saigon forces evacuation, Admiral Metcalf coined the phrase, “‘six thousand mile screwdriver’--the minute direction of the day-to-day operations of a field commander by higher and remote authority.”¹⁵ During the Grenada rescue, Admiral Metcalf found that the potential for a similar scenario existed and changed the dynamics of the flow of information up the chain of command. Admiral Metcalf assigned four staff members to keep higher authority (up to the NCA) informed by the transmission of bihourly situation reports.¹⁶ Admiral Metcalf felt that the “key to our success in retaining local control was to keep higher command fully informed, on an ongoing basis, throughout the entire mission.”¹⁷ Moreover, the Chairman of the Joint Chiefs of Staff (JCS), after a meeting with the President early in the planning phase of the operation, was given the authority to disregard any attempts by the White House Staff to micromanage the operation.¹⁸

Panama and Operation Just Cause

The invasion of Panama has been called, a “minor masterpiece in the art of high command”¹⁹ and should be “enshrined as a paradigm for the American way of war.”²⁰ No operation is ever guaranteed success, but the small number of poorly equipped soldiers in Panama certainly weighted the odds for success heavily in favor of the Americans. Two successful aspects of Operation Just Cause stand out as significant improvements over

* Refer to Appendix A for a general overview of Operation Urgent Fury.

previous evolutions: the streamlined C2 organization and the lack of direct Washington involvement during the operation.

As a result of the Goldwater-Nichols Act of 1986, the chain of command was very clear; it went from the President to the Secretary of Defense (SecDef) through the Chairman of JCS to the COCOM to the Joint Task Force (JTF) Commander. The commander's intent at the COCOM level was very clear: "Conduct joint offensive operations to neutralize the PDF [Panama Defense Forces] and other combatants, as required, so as to protect US lives property, and interests in Panama and to assure the full treaty rights accorded by international law and the U.S. Panama Canal treaties."²¹

Washington officials did not get involved at the tactical level because the "President ... was not in direct communication with the commander in the field ... [and] the Pentagon let the field commanders fight the battles."²² General Colin Powell, as Chairman of the JCS, felt that the COCOM and JTF Commander on the scene were professionals, and the job of the leaders in Washington was to let the, "plan unfold without getting in their way."²³ Two incidents of political micromanagement[†] surfaced during the operation, which illustrate that no matter how ideally a command and control structure is designed or how well an operation is progressing, senior leadership will always be tempted to intervene at the tactical level.

Kosovo and Operation Allied Force

Micromanagement down to the tactical level was commonplace during the 78-day air operation in Operation Allied Force. The sensitive political concerns of NATO officials, and the vague, and oftentimes amorphous, strategic guidance from American authorities, destined

[†] Powell writes about the two instances on pages 431-432 in his autobiography (see note 24). Continuous CNN coverage of a still-standing transmitter tower (and the military's failure to destroy such a lucrative target) near Panama City forced the National Security Advisor (NSA) to direct Powell to destroy it. The second occurrence

General Clark--the Supreme Allied Commander and the theater COCOM--to be a victim, and an administrator, of an incredible amount of micromanagement.

The only objectives approved by NATO were the removal of Serbian forces from Kosovo and the termination of ethnic cleansing of Albanians by the Serbians. Senior American officials had hinted at an ulterior goal of NATO's war, the democratization of Yugoslavia via the removal of the sitting president, Slobodan Milosevic. This led to a U.S. developed "secret" set of NATO objectives not sanctioned by the Europeans.²⁴

General Wesley Clark believed that "every day's activities had strategic impact"²⁵ and used Unmanned Aerial Vehicle (UAV) live videos, Video Television Conferences (VTCs), and the Secret Internet Protocol Routing Network (SIPRNET) to do just that. These capabilities allowed General Clark to receive real time battlefield imagery (via UAVs), meet continuously with his superiors and subordinates (via VTCs), and be exposed to an incredible amount of data (via the SIPRNET). This technology allowed General Clark to routinely work well down into the details of the operation and continuously monitor the tactical picture.²⁶ Throughout the operation, General Clark drove General Short, Commander Air Forces Southern Europe, crazy as a micromanager. For instance, after spotting three tanks on a worldwide network, General Clark called General Short and said, "Mike, Wes, I see three tanks rolling out of the highway just outside Pristina. Get out there and kill them."²⁷

General Clark's description of the target approval process, a process that ultimately "ended up on President Clinton's desk for his approval,"²⁸ provides an excellent example of the level of close control required by the senior American leadership in Allied Force.

again involved CNN, specifically CNN correspondents trapped in a hotel in Panama City. The NSA and SecDef directed Powell to get the reporters out even after Powell's strong objections.

Afghanistan and Operation Enduring Freedom (OEF)

General Franks, Commander, Central Command (CENTCOM), did not forward deploy in-theater, but instead chose to maintain his headquarters in Tampa, Florida. Modern telecommunications allowed General Franks to achieve real-time battlefield situational awareness and direct the battle from his headquarters, “at a level unprecedented compared to Desert Storm” according to the Director C4, J-6 of the JCS, Lieutenant General Kellogg.²⁹ This ability to make real time decisions from halfway across the world often unnecessarily slowed the time from target observation to destruction, because the need for target approval rested with General Franks and levels above him.³⁰ Communications delays, inherent when attempting to relay information across thousands of miles, prevented several targets of opportunity from being engaged. Aircrew found the most effective and efficient air strikes occurred when superior technology was set aside, and target attacks from the air assumed the most basic format, a soldier on the ground--usually a ground forward air controller (GFAC)--directing the pilot’s eyes onto targets of opportunity.[‡]

The Human Factor

Admiral Cebrowski tells us that the genesis of NCW comes from the business world, and that transformation to a net-centric philosophy requires the co-evolution of technology, organization, and doctrine.³¹ Granted, certain aspects of war and the business world have similarities, but absent from the business world are the life and death decisions, commonplace during military operations, that affect men and nations. The co-evolution that Admiral Cebrowski suggests does not appear to be occurring, because the speed and capability of technology has dramatically increased, but the development of NCW

[‡] The author flew over 40 missions in Afghanistan, worked extensively with Special Forces GFACs, and experienced countless delays in the CENTCOM-centric targeting process.

organization and training have not. The bottom line is that the human factor has been overlooked.

One should consider two words in "network centric warfare": network and war. A preponderance of the literature on NCW is about data, decisions, and the network that fuses them. A smaller portion of the literature reflects on war, but very little is written about humans--the coordinating element behind the network, war, and decisions. The network can only increase the amount of data available to a commander; it cannot make that commander a better decision maker or a better leader. In order for NCW organization and training to evolve *with* technology, careful consideration of the strengths and weaknesses of the human aspect--leadership, decision making, personality--must be considered.

Joint planners realize that the gap between net-centric operations and the human element is widening. Published in 2000, *Joint Vision 2020* is the JCS Chairman's vision for the preparation of America's military for tomorrow's threat. It clearly recognizes the importance of the human factor, stating that "decision superiority does not automatically result from information superiority"³², and our advantage comes from "leaders, people, doctrine, organizations, and training...to achieve superior warfighting effectiveness."³³ In other words, the success of NCW results from the people behind the network, not the network itself.

Senior civilian and military leaders who are not educated and trained in the potential pitfalls of information superiority may resort to micromanaging tactical actions because the technology is available for them to do so. This form of warfare, enabled by enlisting the management of tactical actions directly on behalf of strategic goals, collapses the three levels of war, restricts the long range vision of strategic and operational leaders to the short term

tactical level, and may reduce the overall efficiency of the military.³⁴ Not every leader is a micromanager, but the operational and technological trend over the past few years (Operation Northern/Southern Watch, Bosnia, Kosovo, Afghanistan) indicates that most senior leadership can't resist the urge to climb back into the cockpit (or the foxhole) and direct tactical operations.³⁵

Commander's Intent

Effective leaders give their subordinates clear mission objective guidance--the "what" to do, not the "how" to do it--referred to as commander's intent. According to joint doctrine, commander's intent is a clear and concise statement that includes the purpose of the operation, the focus for subordinates, and the desired end state. Commander's intent should help subordinates pursue the end state without further orders, even when operations do not unfold as planned.³⁶

In Grenada and Panama, commander's intent from the White House down to the COCOM was very clear. Presidents Reagan and Bush, students of the Vietnam and Desert One debacles, understood the importance of establishing clear strategic guidance and then assuming a hands-off role once the decision to execute was made. Military planners were given the freedom necessary to complete the task with very little micromanagement from above. The senior leadership trusted their subordinates to accomplish the task and did not feel the need to meddle in the tactical affairs. This was not the case in Operation Allied Force. The lack of a concise and clear commander's intent from senior cabinet officials forced the military leadership into a reactive posture that led to a routine micromanagement of daily tactical affairs.

As a counter to micromanagement, clear commander's intent provides necessary vision and enables subordinate commanders to clearly understand what actions must be taken to accomplish the commander's overall objective.³⁷ In the absence of clear commander's intent, subordinates may not understand what actions to undertake and will look to their superior for instant, continuing guidance, as was illustrated in Operation Allied Force. On the contrary, Operations Just Cause and Urgent Fury operated under clear guidance from senior officials and required virtually none of the micromanagement experienced in Kosovo.

Trust and the flow of information were also common themes in Grenada, Panama, and Kosovo. Just Cause and Urgent Fury had a continuous flow of information between the national-strategic level and the operational level, as well as a level of trust between them. This allowed the politicians to back off and let the military, guided by commander's intent, accomplish the mission objectives. In Allied Force, while the flow of information from the COCOM to the civilian leaders was constant, it would appear that the information flow from the politicians down was not as forthright.

Many of the early national-strategic, theater-strategic and operational discussions from OEF have yet to be declassified; by all accounts, this operation has been driven by a well defined commander's intent. What stands out as a major contributor to the micromanagement in Afghanistan is the location of the theater COCOM's headquarters. General Franks and his staff used the informational advantages (UAVs, SIPRNET, VTCs) of NCW to overcome the large geographic distance (space) from the battlefield. However, the technology that linked CENTCOM and his subordinates actually slowed down the time required to engage targets, as the communication chain became very elaborate and time

consuming. Initiative was taken away, in many instances, from the tactical operator, and a theme of micromanagement in OEF was established.

CENTCOM could have avoided this by establishing a subordinate commander *in* the theater of operations, perhaps at Prince Sultan Air Base in Saudi Arabia. On the same continent and in roughly the same time zone as his forces, a forward deployed subordinate commander could have devoted 100 percent of his time to accomplish CENTCOM's commander's intent. This sort of arrangement would have allowed the theater COCOM to devote more attention to the entire area of responsibility and prepare for any follow-on major operations (Iraq, for example).

Is Micromanagement really that bad?

In this day and age of CNN instant imagery, international law considerations, and crucial public opinion, leaders like General Clark have argued that every tactical action has strategic implications. Therefore, the belief is that senior leaders need to keep close control of tactical operations to ensure achievement of strategic objectives. Maintaining a centralized command and centralized execution structure supposedly eradicates the need for clear commander's intent because the tactical level will always be in contact with the operational and strategic leadership.

The problem with the centralized execution approach is the consumption of valuable time. COCOMs and civilian leaders do not have the time to concern themselves with tactical considerations. They must spend their time thinking strategically (or operationally), considering the integration of C4ISR, coordination of logistics, allocation of scarce combat assets, (etc.) That said, there are *rare* occasions when micromanagement is required and the NCW capability will be useful. Circumstances will arise when operational and strategic

leaders will need to step in and interfere with subordinate commanders' decisions; this should occur only when the tactical decisions could adversely affect the outcome of the mission.³⁸

Micromanagement over time will also adversely affect the decision making skills of individuals throughout the chain of command. Commanders who routinely expect direction from above for decisive matters will begin to shy away from initiative and free thought as they await answers to their problems. If, for whatever reason, such commanders become disconnected from the chain of command, they may well be unable to achieve the mission objectives.

Micromanagement is probably an inevitable side effect of shared awareness, because important leaders, who are ultimately responsible, may "find it ethically unacceptable to absolve themselves of accountability for lower level actions of which they have full knowledge and control."³⁹ As Admiral Metcalf found in Grenada, keeping the higher authority informed is sound military practice, but the same communication channel that transmitted the information up might also be used to give direction back down.

Recommendations

Professor Vego writes that, "network centric warfare is a natural consequence of advances in information technologies and it is here to stay."⁴⁰ And, as demonstrated, the potential for micromanagement comes hand in hand with these advancing technologies. It is true that tactical actions have strategic implications, as some leaders profess, causing them to micromanage military operations. The unintentional bombing of the Chinese Embassy during Operation Allied Force is a classic case of a tactical action directly affecting the national-strategic level of war. But, not *every* tactical action has strategic ramifications, and

an approach can be developed to prevent the leadership from spending inordinate amounts of time observing tactical operations. The following are recommendations for COCOMs and civilian leaders to assist them in mitigating micromanagement as well as guide them in planning for the future of NCW.

Commander's Intent. Joint doctrine is clear on the content, purpose, and format of the commander's intent, but it is vague in reference to changes in commander's intent, stating only that it is refined as the situation evolves.⁴¹ A shift in desired end state or change in purpose are examples that would cause a situation to evolve. But, no matter what the situation, when the commander's intent changes, *it must be retransmitted to subordinates immediately*. This immediate update will keep subordinate commands tied to mission guidelines in the event of C2 disconnect. Joint doctrine needs to indicate such guidance in future publications.

Information Flow. Senior politicians and COCOMs must remain informed at all times. This can be accomplished through an information "filter cell," similar to Admiral Metcalf's arrangement in Grenada. A dedicated staff should be organized to prioritize and then pass pertinent information up the chain of command, and, then, answer questions as they come back down. This arrangement must be mandatory, especially when dealing with the White House. Senior politicians must be fully informed, since they routinely answer queries from the media, Congress and foreign dignitaries.

Training. Rear Admiral Mark Fitzgerald, U.S.S. *Theodore Roosevelt* (CVN-71) Battle Group Commander during Operation Enduring Freedom, writes:

We [the battle group] were completely bypassed in OEF NCW has collapsed the tactical/operational/strategic arena into one. We have leaders who believe they can manage the strategic by micromanaging the tactical.

This works well in a small, limited objective war, but will fall apart when matched with a reasonable fighting force.⁴²

One way to address this growing trend of tactical micromanagement is during training evolutions. The goal is to prevent poor leadership habits, formed during the micromanagement of smaller operations, from adversely affecting large scale operations against a reasonable fighting force.

The White House, COCOMs, media, and State Department need to be involved in training scenarios that incorporate all current facets of NCW (VTCs, UAVs, satellite communications, etc.). During these scenarios, micromanagement of the tactical level needs to be identified, debriefed, and addressed. In the face of information overload, or even technology failure, a commander who is over reliant on technology may become incapacitated or ineffective. Future training evolutions need to incorporate these types of technology failures, so that senior commanders can learn to lead in the absence of advanced technology and understand the importance of developing a clear commander's intent. Killing a live UAV feed moments before a strike on a high value target is an excellent way to demonstrate this point.

Trust. The desired result of the training proposed above is to strengthen trust between the military establishment and its civilian superiors, which will assist in minimizing micromanagement in the long term. Through the establishment of information cells and the competence demonstrated by the military during training events, civilian leaders will learn that the military can be trusted to achieve strategic objectives--*without micromanagement*--if given clear commander's intent.

NCW Development. NCW has opened up C2 and informational channels never experienced before in the military, but these advances have brought along an inadvertent side

effect--micromanagement. The advance of information technology has been so rapid that there has been limited time to consider how the human side of NCW will respond or integrate. To assist in the integration, designers of NCW must distinguish what type of information is valuable at each level of war; more importantly, they must determine what is *not*.

If the current trend of micromanagement in the political-military domain continues unchecked, a generation of leaders may develop who are incapable of making independent decisions. This trend can be reversed if the human element and its importance in NCW is identified and addressed by military leaders.

¹ Robert K. Ackerman, "Operation Enduring Freedom Redefines War," *Signal* 57 (September 2002): S3.

² David S. Alberts, John S. Gartska, and Frederick P. Stein, *Network-Centric Warfare: Developing and Leveraging Information Superiority*, 2 ed. (Washington, DC: DoD C4ISR Cooperative Research Program, August 1999): 2.

³ Edward M. Flanagan, *Battle for Panama* (Washington: Brassey's (US), 1993): 228.

⁴ Richard K. Betts, review of *Waging Modern War*, by Wesley Clark, *Foreign Affairs* 80 (July/August 2001): 29; Thomas P.M. Barnett, "The Seven Deadly Sins of Network-Centric Warfare," *United States Naval Institute Proceedings* 125 (January 1999): 38.

⁵ James K. Morningstar, "Leadership in the XXI Century-Digital Age," *Armor* 109 (September/October 2000): 38.

⁶ Alberts, Gartska, and Stein, 122; Arthur K. Cebrowski and John J. Gartska, "Network-Centric Warfare: Its Origin and Future," *United States Naval Institute Proceedings* 124 (January 1998): 30-32.

⁷ Robert C. Rubel, "War-gaming Network-Centric Warfare," *Naval War College Review* 54, no.2 (Spring 2001): 65-66.

⁸ Edward A. Smith, "Network-Centric Warfare: What's the Point?," *Naval War College Review* 54, no.1 (Winter 2001): 60-61.

⁹ Cebrowski and Gartska, 11. The mechanics of the "self-synchronizing" of forces has yet to be defined by NCW supporters.

¹⁰ Milan Vego, "Net-Centric is Not Decisive," *United States Naval Institute Proceedings* 129 (January 2003): 56.

¹¹ Barnett, 39.

¹² Douglas A. Macgregor, "Future Battle: The Merging Levels of War," *Parameters* 22 (Winter 1992-93): 33.

¹³ Gregory J. Blencoe, "Are You a Micromanager?," Lkd., *Business Dynamics Network*, <http://www.business-dynamics.com/resource_library/Business_Resources/243.html> [21 January 2003].

¹⁴ Ronald H. Cole, "Grenada, Panama, and Haiti: Joint Operational Reform," *Joint Force Quarterly* 20 (Autumn/Winter 1998-99): 58.

¹⁵ Joseph Metcalf, "Decision Making and the Grenada Rescue Operation," in *Ambiguity and Command*, by James G. March and Roger Wessinger-Baylon (Marshfield, MA: Pittman Publishing, 1986): 278.

¹⁶ *Ibid.*, 284.

¹⁷ *Ibid.*, 285.

¹⁸ David M. Goodrich, interview by author, Newport, R.I. 13 January 2003. Major General Goodrich, USAF (Ret) was a member of the J-3 Staff on the JCS during Operation Urgent Fury.

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- ¹⁹ Thomas Donnelly, "Lessons Unlearned: A Comparison of Three American Wars," *The National Interest* 60 (Summer 2000): 76.
- ²⁰ Ibid.
- ²¹ Flanagan, 40.
- ²² Ibid., 228.
- ²³ Colin L. Powell, with Joseph E. Persico, *My American Journey* (New York: Random House, 1995): 429.
- ²⁴ "U.S. Military Debates Link Between Kosovo Air War, State Objectives," *Inside Washington*, 20 April 2000, 4-5.
- ²⁵ Wesley Clark, *Waging Modern War: Bosnia, Kosovo, and the Future of Combat* (New York: Public Affairs, 2001): 85.
- ²⁶ Ibid., 245.
- ²⁷ Michael C. Short, "An Airman's Lessons from Kosovo" in *From Maneuver Warfare to Kosovo* by John Andreas Olson (Trondheim, Norway: Royal Norwegian Air Force Academy, 2001): 285.
- ²⁸ Clark, 201.
- ²⁹ Robert K. Ackerman, "Afghanistan is Only the Tip of the Iceberg," *Signal* 56 (April 2002): 46.
- ³⁰ Rebecca Grant, "An Air War Like No Other," *Air Force Magazine* 85 (November 2002): 34.
- ³¹ Cebrowski and Gartska, 35.
- ³² "Joint Vision 2020. America's Military: Preparing for Tomorrow," *Joint Electronic Library* CD-ROM, Washington, DC: Joint Chiefs of Staff, September 2002.
- ³³ Ibid., 60.
- ³⁴ Macgregor, 42.
- ³⁵ Mark P. Fitzgerald <Lobster2694@aol.com> "Re: Greetings from God's country." [E-mail to John J. Cummings <cummingsj@nwc.navy.mil>] 22 January 2003. Rear Admiral Fitzgerald was the USS *Theodore Roosevelt* (CVN-71) Battle Group Commander during the early months of OEF.
- ³⁶ "Joint Task Force Planning Guidance and Procedures," 22 January 1999 *Joint Electronic Library* CD-ROM, Washington, DC: Joint Chiefs of Staff, September 2002.
- ³⁷ Milan Vego, *Operational Warfare* (Newport: Naval War College, 2000): 579.
- ³⁸ Ibid., 581.
- ³⁹ James R. Fitzsimonds, "The Cultural Challenge of Information Technology," *Naval War College Review* 51 (Summer 1998): 16.
- ⁴⁰ Vego, "Net-Centric is Not Decisive," 57.
- ⁴¹ "Joint Task Force Planning Guidance and Procedures," IX-27.
- ⁴² Mark P. Fitzgerald <Lobster2694@aol.com> "Re: Greetings from God's country." [E-mail to John J. Cummings <cummingsj@nwc.navy.mil>] 22 January 2003.

APPENDIX A

On October 12, 1983 militant Marxist rebels overthrew and executed the government officials of the moderate Marxist government of Grenada. The U.S. National Security Council ordered planning for a military operation in order to evacuate six hundred American medical students living on the island who were in danger. The mission objectives were three-fold: the rescue of U.S. citizens, the restoration of a democratic government, and the preclusion of Cuban interference on Grenada.

After a short planning cycle, combat operations began on 25 October 1983, with assaults at various airfields on the island. After 9 days of conflict, against poorly equipped soldiers, the hostilities ceased. In the end, U.S forces overwhelmed the opposition and achieved all of the predetermined mission objectives.⁴³

The success of Operation Urgent Fury was marred by inadequate time for planning, a lack of tactical intelligence, and problems with joint operations and joint C2. This operation and the bombing of the Marine Barracks in Beirut, which occurred the day prior to the start of Urgent Fury, were the impetus for the subsequent passage of the Goldwater-Nichols Defense Reorganization Act of 1986.⁴⁴

⁴³ Ronald H. Cole, "Grenada, Panama, and Haiti: Joint Operational Reform," *Joint Force Quarterly* 20 (Autumn/Winter 1998-99): 58.

⁴⁴ Ronald H. Cole, "Operation Urgent Fury: The Planning and Execution of Joint Operations in Grenada, 12 October-02 November 1983," Lkd., *Defense Technical Information Center*, <<http://www.dtic.mil/doctrine/jel/history/urgfury.pdf>> [19 January 2003].

SELECTED BIBLIOGRAPHY

Ackerman, Robert K. "Afghanistan is Only the Tip of the Iceberg." *Signal*, 56 (April 2002): 45-47.

_____. "Operation Enduring Freedom Redefines War." *Signal*, 57 (September 2002): S3-S5.

Alberts, David S., John J. Gartska, and Frederick P. Stein. *Network Centric Warfare: Developing and Leveraging Information Superiority*. Washington, DC: DoD C4ISR Cooperative Research Program, 1999.

Barnett, Thomas P.M. "The Seven Deadly Sins of Network-Centric Warfare." *U.S. Naval Institute Proceedings*, 125 (January 1999): 36-39.

Betts, Richard K. Review of *Waging Modern War: Bosnia, Kosovo, and the Future of Combat*, by Wesley Clark. *Foreign Affairs*, 80 (July/August 2001): 126-132.

Blencoe, Gregory J. "Are You a Micromanager?" Lkd. *Business Dynamics Network* at "Resource Library Page."
<http://www.business-dynamics.com/resource_library/Business_Resources/243.html> [21 January 2003].

Cebrowski, Arthur K. and John J. Gartska. "Network-Centric Warfare: Its Origin and Future." *U.S. Naval Institute Proceedings*, 124 (January 1998): 28-35.

Clark, Wesley K. *Waging Modern War: Bosnia, Kosovo, and the Future of Combat*. United States: PublicAffairs, 2001.

Cole, Ronald H. "Grenada, Panama, and Haiti: Joint Operational Reform." *Joint Force Quarterly*, 20 (Autumn/Winter 1998-99): 57-64.

_____. "Operation Urgent Fury: The Planning and Execution of Joint Operations in Grenada, 12 October-02 November 1983." Lkd. *Defense Technical Information Center*. <<http://www.dtic.mil/doctrine/jel/history/urgfury.pdf>> [19 January 2003].

Crowe, William J. "A Perspective on the Command and Control Agenda." In *Principles of Command and Control* by Jon L. Boyes and Stephen J. Andriole, 22-29. Washington, DC: Armed Forces Communication and Electronics Association Press, 1987.

Dahl, Erik J. "Network Centric Warfare and the Death of the Operational Art." Unpublished Research Paper, U.S. Naval War College, Newport, RI: 2001.

Donnelly, Thomas. "Lessons Unlearned: A Comparison of Three American Wars." *The National Interest*, 60 (Summer 2000): 76-82.

- Dunne, Martha. "Leadership is More Valuable than Technology." *U.S. Naval Institute Proceedings*, 128 (August 2002): 74-76.
- Fitzgerald, Mark P. <Lobster2694@aol.com> "Re: Greetings from God's country." [E-mail to John J. Cummings <cummingsj@nwc.navy.mil>] 22 January 2003.
- Fitzsimonds, James R. "The Cultural Challenge of Information Technology." *Naval War College Review*, 51 (Summer 1998): 9-21.
- Flanagan, Edward M. *Battle for Panama*. Washington, DC: Brassey's (US) Inc., 1993.
- Grant, Rebecca. "An Air War Like No Other." *Air Force Magazine*, 85 (November 2002): 22-52.
- Goodrich, David M. Interview by author, 13 January 2003, Newport, R.I.
- Inside Washington* (Washington, D.C.), 29 April 2000.
- Joint Chiefs of Staff. "Joint Task Force Planning Guidance and Procedures," 22 January 1999 *Joint Electronic Library CD-ROM*, Washington, DC: Joint Chiefs of Staff, September 2002.
- Joint Chiefs of Staff. "Joint Vision 2020. America's Military: Preparing for Tomorrow," *Joint Electronic Library CD-ROM*, Washington, DC: Joint Chiefs of Staff, September 2002.
- Macgregor, Douglas A. "Future Battle: The Merging Levels of War." *Parameters*, 22 (Winter 1992-93): 33-47.
- McFarland, David M., Monty Ray Perry, and Steven R. Miles. "Joint Operational Art is Alive." *U.S. Naval Institute Proceedings*, 128 (October 2002): 78-81.
- Metcalf, Joseph. "Decision Making and the Grenada Rescue Operation." In *Ambiguity and Command*, ed. James G. March and Roger Weissinger-Baylon, 277-297. Marshfield, MA: Pitman Publishing Inc., 1986.
- Morningstar, James K. "Leadership in the XXI century – Digital Age." *Armor*, 109 (September/October 2000): 37-39.
- Owens, William. *Lifting the Fog of War*. New York: Farrar, Straus and Giroux, 2000.
- Powell, Colin L. with Joseph E. Persico. *My American Journey*. New York: Random House, 1995.
- Rubel, Robert C. "War-gaming Network-Centric Warfare." *Naval War College Review*, 54 (Spring 2001): 61-74.

Short, Michael C. "An Airman's Lessons from Kosovo." In *From Maneuver Warfare to Kosovo* by John Andreas Olson. Trondheim, Norway: Royal Norwegian Air Force Academy, 2001: 257-288.

Smith, Edward A. "Network-Centric Warfare: What's the Point?" *Naval War College Review*, 54 (Winter 2001): 59-61.

Vego, Milan N. *Operational Warfare*. Newport: Naval War College, 2000.

_____. "Net-Centric is Not Decisive." *United States Naval Institute Proceedings*, 129 (January 2003): 52-57.