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**FILTERING AND TRUST AS TOOLS FOR THE OPERATIONAL COMMANDER
IN THE INFORMATION AGE**

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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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20 Oct 2006

Abstract

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INTRODUCTION

As the operational commander sits in his command post preparing to sign a fragmentary order to execute a lethal operation, what does he see, hear, and feel? Today, he is surrounded by more technology, information, and external stimulus than ever before. Advances in technology have changed the way modern war is fought. The operational commander has unprecedented access to data and he has the capability to affect tactical operations by just picking up the phone. Similarly, he finds himself in an environment where he receives simultaneous feedback from his subordinates, his boss, the media, and his peers. The combination of speed of information flow, lethal weapons with tremendous range and accuracy, immediate feedback, and high stakes has forever altered the ocean through which the senior leader navigates. These new pressures of the information age drive how the commander establishes the organization's command and control structure, affect the relationships he has with both his subordinate commanders and with his bosses, and most importantly, they affect his decision making process.

For warfighters, the information age has many characteristics; however, this paper will examine the ones that have the largest effect on the operational commander's decision processes which are information superiority, shared awareness, adaptability, transparency, and stress. The commander must understand his decision process and the limitations he must work under—both his and those of the network. This environment will require senior officers to “tweak” their toolboxes by expanding the use of filtering and trust. While there are many other critical leadership skills (the touchstones of leadership never change), these two emerge as even more critical to today's operational commander. The commander will

not be able to make effective, timely decisions if he does not exercise filtering and trust, and he will degrade the organization's ability to win.

General Tommy Franks' experience as CENTCOM commander, and his leadership during Operation Iraqi Freedom (OIF), offers insights into how ineffective information filtering and poor organizational trust skills can negatively affect chances for mission success. However, OIF was operationally successful—the regime was overturned.¹ This success was due, in large part, to the display of filtering and trust exhibited by the Coalition Land Component Commander (CFLCC) LTG Dave McKiernan.

Why is it important to look at filtering and trust as leadership tools of the operational commander? While there is a great body of writing on the technology associated with the modern operating environment, there is little written about adjustments leaders need to make in order to be successful. This paper will offer some suggestions for improving these tools in senior leaders.

THE INFORMATION AGE—*Why Good Decisions are Hard to Make*

As OIF kicked off and USAF F-117s headed for Dora Farms, General Franks found himself in a very different environment than previous commanders of large invasion forces. After he watched the last plane take off for the Normandy invasion, General Eisenhower drove back to his headquarters and went to bed. He depended on message traffic to get the status of the operation.² In contrast, General Franks described his command post:

With its mega-channel, encrypted satellite voice and data links, and its multiple Secure Video Teleconference facilities, Building #217 used bandwidth equivalent to that of a large U.S. city. I could reach Secretary Rumsfeld, JCS Chairman Dick Myers, Rifle DeLong—or the President—within seconds by secure voice or video link. And a Red Switch voice consoles connected me to the Service Chiefs and my component commanders at the touch of a button. We communicated by both voice and video at scheduled times twenty-four hours a day.³

Both men led huge military forces in coalition, joint, complex operations requiring superb leadership. Eisenhower was operating in the industrial age and Franks was executing his mission in the information age where wealth is generated through knowledge vice mechanical power and the network has replaced the machine as the descriptive model.⁴

No discussion of command in the information age is complete without addressing network centric warfare (NCW). According to Admiral Cebrowski, NCW is about humans and how they organize and behave. It harnesses the power of networks by gathering, processing, and managing information. NCW focuses on building information superiority and exploiting it in the battlespace. It creates shared awareness at all levels and supports speed of command. When geographically separated organizations have information superiority, they can self-organize and self-synchronize. Three of the key components of NCW are information superiority, shared awareness, and adaptability.⁵

Joint doctrine defines information superiority as the operational advantage derived from the ability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same.⁶ Information overload is a challenge that the quest for information superiority poses. Too much information can actually be a source of friction by slowing down the commander's ability to make good, timely decisions. The commander spends an inordinate amount of time observing and not enough time deciding and acting. He may compensate for this by micro-management or focusing on tactical detail with which he is more comfortable.⁷ While acknowledging the challenge of information overload, supporters of NCW point to the requirement to

discriminate based on relevancy, accuracy, and timeliness using automation or by organizational adaptability—the chaff has to be winnowed.⁸

One of the promises of informational superiority is to reduce or eliminate fog in war. While the advances in technology have reduced uncertainty in some ways, new sources of fog have emerged, such as balking communications equipment or the resolution on a UAV video feed. The other reason fog will remain constant regardless of technology is that war is inherently human—a factor that can't be overcome through information superiority⁹

One of the key shared awareness goals of NCW is the common relevant operating picture (CROP). The military industrial complex has consumed tremendous resources to generate displays and communications systems that will allow nodes in the network (from the operational commander down to the individual tank) to have the same CROP. In practice, the concept of a CROP is hard to realize. First, nodes in the network must have the same mental model by which they are viewing the situation and interpreting data. The mental model is not the CROP itself but the context (ingrained by like experience, training, and the promulgation of the commander's intent) through which the information is interpreted. Assuming that all units, services, and coalition partners have the same mental model may not be accurate.¹⁰ The next challenge to shared awareness is the tacit assumptions about what nodes do with the CROP when they get it. In order to be self-synchronized, the nodes of the network have to view the CROP with the same mental model, come to the same conclusions about what the CROP is telling them, and choose the same course of action (COA). OIF, and warfare in general, are replete with examples where this did not occur at the operational level. Like Voltaire's reference to the Holy Roman Empire, the CROP is neither common, nor operational, nor a picture.¹¹

Because war is extremely complex and the environment is hostile, the network and its nodes must be adaptive.¹² Moltke's maxim that no plan survives first contact with the enemy is also true in the information age.¹³ It is the combination of speed and volume of incoming data, a non-compliant enemy, and the requirement that there be a common understanding of the CROP that makes timely operational adaptive decision making difficult. In short, do not fall in love with the plan, because you have to fight the enemy, not the plan.¹⁴ This is the case where the operational commander must exercise the Decide and Act functions of Boyd's Observe, Orient, Decide, and Act (OODA) Loop.¹⁵ While commanders have much of the information lower level units have, they still do not have the same level of situational awareness. NCW concepts exert pressure to take advantage of information superiority and "turn" the OODA loop faster. The best way to get a good, timely decision out of this cycle is to delegate the decision to a lower level in the organization—something that a commander may not be willing to do.¹⁶ As will be seen in, during OIF, multiple surprises at the operational level drove changes in the plan—this did not go smoothly, especially between the CENTCOM and CFLCC staffs because Franks and McKiernan disagreed on the CROP.

Another characteristic of the operational commander's world is transparency. He can see directly down to the unit level (but how clearly?). His bosses see much of the same data, sometimes through the media. A positive aspect of transparency is that information is moving up and down the chain in such a way that all can see the situation (see CROP discussion above). However, the "man in the arena" and his actions carry more weight in this environment because of the size of the audience and the speed at which people see the performance. Political considerations become more important and as the political process gets more involved, tactical advantage can be lost.¹⁷ Unprecedented visibility into all

operations can lead to micromanagement and decision up-creep.¹⁸ Transparency can also affect the performance and development of junior officers as they wait for seniors to tell them what to do. Over reliance on guidance from above affects morale and can lead to following the letter of the orders, not the intent. When coupled with fog and military setbacks, this narrow perspective can slow operations and degrade the legitimacy of future orders from above.¹⁹

With the transparency in the information age also comes stress. In General Franks' case, his boss, Secretary of Defense (SECDEF) Rumsfeld, was a large reason for his level of stress. Rumsfeld's insistence on forcing a plan for OIF that flew in the face of all the advice Franks' was receiving from his experts was a severe stressor for Franks and his staff.²⁰

Operational Leadership in the Information Age—*Why Filtering and Trust are Needed*

If the operational commander must navigate through the information age as described above, what tools does he have? His situation is different from that of his predecessors in that he has almost unlimited data, but it is still unclear how much of it is relevant information; decision timelines are compressed and feedback from external sources is almost immediate. While the leadership tools prescribed over thousands of years of study still apply, the skills of filtering and generating trust arise as more important in this environment.

Filtering has a technical facet and leadership facet. Technically, it consists of tasks associated with gleaming decisional information from the fire hose of data coming into the commander—does he understand what he is seeing, and does he believe it. A judgment also has to be made about the value of the data displayed—this is done both with machines and by humans. At the tactical level, machines and humans filter by lethality and range—what can kill me and how close is it? The operational commander does not have the same filters

available and he has to make judgments about what he chooses to consider. While artificial intelligence systems can automate this, the decisions about how the data is chosen and displayed in the CROP must include the commander.²¹ A simple example of this type of filtering is General Franks' decision to keep his blue force tracker (BFT) and red force tracker (RFT) on separate displays. This allowed him to keep reminding himself that the BFT data was near real time and the RFT was dated. A commander should never "know more than he knows."²² Filtering in this context is more than just displays, it is also the cognitive skills the commander uses (sometimes without knowing it) that allow him to accept or disregard input. When data is inconclusive, time is short, and the stakes are high, the experienced commander takes "thin slices" of the information presented and makes a decision. This can be likened to using intuition or "gut", but it is more sophisticated than that. Thin slicing is the way one uses the sum total of one's previous experience to find patterns in situations and behavior and come to conclusions using small amounts of data.²³

Why is this type of filtering of information important? First, because the commander will be inundated with stimuli and he has to decide early what he is going to focus on. He must then train with his team in order to practice and make sure he and his commanders share the same sight picture for the operation. Finally, he must employ filtering because it frees him up to transition more readily to the strategic/national level of issues. Commanders who myopically focus on tactical details may miss higher-level context or implications of force actions—someone has to be watching the forest while others navigate the trees.

Leadership filtering describes how the operational commander handles the "speed of light" movement of information up and down from the tank in the field to the front page of the New York Times. It refers to how much he "protects" both his bosses and subordinates

from superfluous or distracting data. It also refers to how he filters his own experiences in light of the current situation—not all nails require the same hammer. Filtering in this context is important in the information age because the nature of NCW requires that there be filters in the system. If all information is shared without regard to the needs of the mission, then the commander may find a platoon sergeant trying to help him with his problem with the SECDEF just as he can be enticed to call in an air strike to help the sergeant. This level of filtering also requires the leader to exhibit moral courage because there are times when he must take the brunt of attack from the boss or from the outside and protect his subordinates from it so they can focus on their mission.

Trust probably is a more familiar leadership tool to the reader. It also has a technical and a leadership perspective. Technical trust is the degree to which the operational commander and his staff believe the information they are getting over the network. More importantly, it is the degree to which all players have the **same and appropriate** degree of trust in the information. As is stated in *Power to the Edge*, trust in information, equipment, leaders, and followers is a necessary precondition for self-synchronization.²⁴

How much an organization trusts a system directly relates to how much they use it. Adkins and Kruse describe this as technology transition. The two main aspects of technology transition are perceived net value and perceived complexity. Technologies that are of high-perceived value and low complexity are adopted quickly (email and chat). Tools that are highly complex and of low perceived value to the user may not be adopted (complicated database management program). The bottom line of this analysis is that there are limited cognitive resources and people will gravitate towards systems that help them work faster, make their boss happy, or help them fight better.²⁵ This type of trust is crucial to

successful operations in the information age because the commander's subordinates will use the systems that the boss uses and thinks are important.

From a leadership perspective, Blatt defines trust succinctly. "Trust is a bet that an entity, which you cannot control, will meet expectations that are favorable to your cause."²⁶ This definition is instructional because it gets at the heart of operational trust—a faith each member puts in another. If the commander does not set up a trust-based environment, the people will stop communicating—they will hoard information.²⁷ Demonstrating trust and developing a trust-based organization is critical in the information age. The only way to take advantage of the shared awareness the network provides and to counter the enemy (who will not comply with the plan) is to have the people closest to the fight make adjustments and take risks in the face of physical danger and the knowledge that everyone can see what they are doing.

Case Study--General Franks and General McKiernan in OIF

The operational commander has a challenging task. Balancing ends, ways, and means across the political and military landscape have proven challenging since armed conflict began. In today's NCW environment, the operational commander sits in a position where he may sense when the plan has hit a snag—possibly at the same time the tactical commander does. Nevertheless, does he share the same conclusions as to the new problem's importance and appropriate COA as the other nodes in his network? In OIF General Franks needed to overcome confusing, nonlinear attacks on the Cobra II plan. The first of which was the enemy who did not capitulate as anticipated. Secondly, his assumptions about who was taking the lead on post-conflict operations proved to be wrong.²⁸ The following

examples from General Franks' experience in OIF shed light on the need for filtering and trust.

Franks' fascination with tactical BFT and RFT data (inability to filter) drove him to be frustrated with the progress of ground operations and damaged the level of trust in the command. His fixation on the need to speed up the war and the realization that the Iraqi regime was not going to capitulate en masse drove him to allow uncoordinated operational activities. Through a series of complicated connections General Abizaid was allowed to send an untrained, unsupported force of 570 pro-Chalabi fighters into Iraq. McKiernan was completely blindsided by the arrival of this force and did not even know Franks sponsored it.²⁹ Franks' demonstrated lack of trust in his CFLCC could have had serious negative strategic implications had Chalabi's force ever become relevant.

After meeting with Franks over whether to relieve General Wallace, McKiernan said, "Blue Force Tracking drives the CINC."³⁰ McKiernan finally realized that Franks was making decisions based on a faulty reading of BFT data. Because the blue icons on his screen were not moving north, he assumed no fighting was taking place and that Wallace lacked aggressiveness. Franks and the CENTCOM staff were viewing the BFT data at too high of a level (technical filtering). If he had looked at individual units, he would have seen that the Fedayeen were fighting ferociously and units at lower levels were actively engaged.³¹

The Wallace tirade is also an example of poor leadership filtering. Wallace's comments in the press that the enemy in Iraq was different than CENTCOM had trained for angered the SECDEF who considered the comments a vote of no confidence in the strategy.

Franks took this frustration and laid it directly on McKiernan with no insulation—the threat could possibly be considered as being directly from the SECDEF.³²

Franks' threat to fire Wallace also showed lack of trust. Not only did he fail to filter Rumsfeld's anger over Wallace's statements in the press, but he alluded that Rumsfeld was also upset. An operational commander must realize that information can move up as fast as it travels down. He must be prepared to deal with unexpected input. According to McKiernan, relieving Wallace was unjust and would unhinge the operation.³³ While Wallace was not relieved, the incident forced McKiernan to travel to Franks' headquarters to plead for Wallace's job while he was trying to plan the post-halt phase of the attack. Franks, in his autobiography, mentions the Wallace interview but does not include the discussions over Wallace's job.³⁴

Franks' reaction to the Wallace issue can be compared with how McKiernan handled it. He kept Wallace insulated from the issue by immediately telling him to stop talking to the press but not telling him about the attack on his job or his aggressiveness. This is a good example of leadership filtering by taking the “shit sandwich” from Franks and reassuring him that Wallace needed to be allowed to fight his fight.³⁵

The way Franks ran his headquarters throughout the OEF and OIF is another poor example of leadership trust. As previously noted, if the commander does not build trust, people will stop providing him information. Franks' poor level of trust with his boss at the Pentagon and his abusive style led to a distortion in the information he saw from his subordinates.³⁶ The planners came to realize that only good news could be passed forward, regardless of the truth.³⁷ Another way this lack of trust manifested itself was in the way the DOD vetted the Cobra II plan. Because of the lack of trust between the SECDEF and

CENTCOM, Franks cut out many of his experts as the plan was developed—sometimes including just himself and his operations director. This example of weak leadership filtering (in this case stopping information) resulted in a narrowing of viewpoints on the threat and prevented discussion of differing opinions on courses of action. Franks was aware of these disconnects between his experts at CENTCOM and Rumsfeld's office over the threat in Iraq but he let them fester. In the end, he produced a weaker plan.³⁸

Franks' inability to filter his own experiences with SOF and CIA operatives in Operation Enduring Freedom (OEF) clouded his view of the tactical operations that McKiernan should pursue in OIF. His insistence that SOF and CIA could deal with the Fedayeen so the major mechanized forces could bypass the resistance and continue to press towards Baghdad highlighted his lack of understanding of the fight on the ground. Because there were no indigenous forces for SOF to work with (as there had been in Afghanistan), they had had very little success against the Fedayeen. Once again, McKiernan exhibited better filtering and trust by taking Franks' input, but implementing a different plan. He halted the advance to Baghdad and dealt with the threat to the rear and the supply lines. McKiernan never implemented the SOF strategy because he had generated a high level of trust with both Franks. He believed that level of trust gave him the freedom to put his plan into action.³⁹

The low level of trust between Franks and the SECDEF also influenced CENTCOM's ability to adapt the Cobra II plan once the enemy refused to capitulate. Franks had finally captured the SECDEF's approval of a light, fast campaign and he was not interested in slowing it down to deal with small bands of civilians with machine guns. Franks continued to insist that McKiernan's main effort be the Iraqi 10th and 6th Divisions even after the

ground commanders determined they were not a threat. His insistence on these attacks in conjunction with his direction to push towards Baghdad resulted in a shotgun smattering of guidance that the CFLCC could not execute. Once again, McKiernan served as the filter in the organization by pulling his team together, dispelling rumors of discord, and keeping the team unified.⁴⁰ McKiernan continued to focus his team on the enemy instead of the Cobra II plan in spite of the pressure from above.⁴¹

These examples of filtering and trust by both General Franks and General McKiernan are not meant to indict either the Cobra II plan or the strategic failures of OIF. On the contrary, General Franks' team accomplished the operational objective of toppling the Hussein regime in 27 days—we won.⁴² However, CENTCOM achieved the objective at least partially in spite of the performance of General Franks. Had the Iraqi forces been better organized and led, the outcome could have been different. As it was, the CFLCC fought a very different war than he expected: the enemy didn't use weapons of mass destruction, the population didn't greet the coalition forces with cheers and flowers, Mother Nature served up the mother of all sand storms, and the Fedayeen attacked his rear areas and lines of communication. McKiernan overcame these challenges by employing filtering and trust often compensating for Franks' failure to do the same.

RECOMMENDATIONS

Any recommendations for improving filtering and trust skills in senior commanders are offered with acknowledgement that there are issues the operational commander cannot solve. For instance, as long as the U.S. continues to believe in civilian control of the military, combatant commanders will have to deal with the SECDEF and his staff. In General Franks' situation, he was working for a very opinionated, involved boss. That said,

there are four recommendations that should be considered to improve the filtering and trust skills of senior leaders.

First, combatant commands have exercises and simulations to prepare their staffs and wargame their plans—this training should be adjusted to emphasize the proper role of the combatant commander. There should be more emphasis placed on having the actual combatant commander participate so that he sees the performance of his subordinates and can continue to modify his guidance based on learning. Additionally, each exercise should include iterations of the fight where the combatant commander is taken out of the decision loop. In other words, the team has to execute the plan with no influence from higher headquarters beyond the original commander's guidance. This "hole" forces key operational players (CFLCC, JFACC) to operate based on the plan, commander's intent, and what the enemy is doing. This artificial filter could also highlight places where commander's guidance is lacking. These exercises could show the commander how his subordinates really see the CROP and could identify information technology related fog.

The second suggestion is to modify command relationships. As was shown earlier, General Franks was preoccupied with tactical details during OIF. In fact, he had previously shown his comfort at that level and his lack of strategic understanding when he discussed OEF and his original concepts for OIF.⁴³ Joint doctrine now allows the joint force commander to also serve as a Component Commander.⁴⁴ DoD should consider deleting this option for two purposes. First, this change could free up combatant commanders to think more strategically during both planning and execution—a critical failing in OIF. Secondly, without the option of serving as a component, combatant commanders will be forced to pick component commanders they trust and depend on them to control the tactical operation.

Opponents to this suggestion will argue that manning and time constraints may make a dual-hatted commander necessary--this could easily be true during crisis situations.

Third, DOD should consider implementing focused training for operational commanders in battle command. Battle command (also described as generalship or military genius) pertains to the cognitive and intellectual skills needed to visualize the situation and make decisions. Battle command focuses more on leadership, judgment, critical thinking, and study than on technology.⁴⁵ This training could serve as a counterweight to the myriad of technical systems the combatant commander is exposed to and could give him technical and leadership filtering tools and an opportunity to practice them. A renewed focus on battle command and strategic thinking could reorient senior military leaders back in the direction they can do the most good—Washington D.C.

Finally, much of General Franks' problem stemmed from the low level of trust in the civilian-military chain. Discounting the personality of General Franks and the SECDEF, there will always be a different perspective and the associated friction between civilian and military leadership. Anyone who has worked in the Pentagon probably has an opinion of whether the DOD is a trust-based organization. The DOD should consider evaluating the relationship between the combatant commands and the SECDEF as a trust-based organization. The services (especially the Army) continually review the level of trust in the organization usually with an interview type study.⁴⁶ Successful corporations also measure trust levels and work to improve them. The same effort, while painful, could prove useful at the combatant commander/SECDEF level.

CONCLUSION

The operational commander in the information age has the opportunity to leverage a technical infrastructure that is well beyond what leaders even ten years ago could imagine. He has the ability to see and hear into the battlefield and if he desires to, communicate down to the unit level. With this capability come some concepts that are still emerging. NCW, information superiority, shared awareness, adaptability, and transparency are important features of the information age but they come with their own issues and generate their own fog. The desire to have information superiority can inundate senior leaders in the network and actually slow down the decision making process. Shared awareness (often defined as the CROP) is a difficult goal to attain. Progress has been made in implementing the technical piece of the CROP; however, there are still challenges because not all nodes have the same mental picture, read the CROP the same way, or agree on the COA. Adaptability has become even more important in the information age because of the speed of information flow and the time-tested adage that the enemy gets a vote on the plan. Operational commanders have to keep in mind that while privy to multitudes of data, they do not have the same situational awareness of lower level units; therefore making effective, timely decisions is difficult. Finally, transparency has raised the stakes for all nodes in the network. The effects of this visibility are that political considerations often move to the front of the line and “man in the arena” often has to act with the knowledge that he is being watched continually.

A commander needs to practice technical and leadership filtering to be successful in the information age. On the technical level, he must thoughtfully consider what data he views and takes action on. From a leadership perspective, filtering refers to the act of sifting through the stimuli and protecting subordinates and bosses from irrelevant or damaging

feedback in order to keep the mission on track. This type of filtering requires moral courage since the operational commander must field attacks from within the DOD and the press.

Practicing trust and developing a trust-based organization is the other leadership tool required in the information age. At a lower level, the commander needs to ensure through training that all nodes in the network have the same and appropriate level of trust in the data on the network. This level of trust is required to realize the value of NCW. At a higher level, the commander has to demonstrate and develop trust both up and down in the network. While this type of trust is not a new requirement, it has become even more important because it is the only way to take advantage of the shared awareness in the network.

Throughout the planning and execution of OIF, General Franks failed to demonstrate proper filtering or trust. He continually read the CROP incorrectly and pushed for operations that were no longer appropriate based on the situation on the ground. Franks endured a low level of trust with the SECDEF and his staff. This situation affected the quality of the Cobra II plan and its assumptions. Once OIF began, Franks demonstrated poor filtering and trust that degraded the effectiveness of the operation. Conversely, General McKiernan consistently employed filtering and trust, often compensating for Franks' performance.

In the end, war is a human endeavor and operational commanders need new ways to develop filtering and trust skills. Suggestions based on the OIF experience are not centered on how to get more technology and information to the commander. They focus on improving the commander's understanding network's limitations and refocusing him towards the strategic issues that he is in position to best address. Training should also refocus senior leaders on battle command—leadership, judgment, and critical thinking skills. The OIF case study also highlighted the low level of trust in the combatant commander-SECDEF

relationship. While personalities cannot be ignored, DOD should look at the relationship of these two organizations and evaluate it as a trust-based entity.

NOTES

¹The war in Iraq continues as of this writing and the success or failure of coalition operations is yet to be determined. This paper narrowly looks at the operations associated with planning the joint fight with the goal of toppling the Hussein regime. Strategic planning failures with respect to Phase IV operations and the insurgency are beyond the scope of this paper.

² Stephen E. Ambrose, *Eisenhower, Soldier and President*, (New York: Simon & Schuster, 1990), 141.

³ Tommy Franks, *American Soldier*, (New York: Harper Collins, 2004), 446.

⁴ Gordon R. Sullivan and James Dubik, *War in the Information Age*, (Carlisle PA: Strategic Studies Institute, U.S. Army War College, 1994), 2-7.

⁵ Arthur Cebrowski, "Network-centric Warfare," *Military Technology* 27, no. 5 (May 2003): 16. It is interesting to note that the most famous proponent of NCW considered it such a broad concept that it couldn't be defined. However, Admiral Cebrowski's discussion of the subject in 2003 does a good job of describing it.

⁶ Chairman, U.S. Joint Chief of Staff, Information Operations, Joint Publication (JP) 3-13 (Washington, DC: CJCS, 13 February 2006), GL-9.

⁷ Matthew Baker, "Human Factors in Network Centric Warfare" (research paper, Newport RI: U.S. Naval War College, Joint Military Operations Department, 2002), 9.

⁸ Cebrowski, "Network-centric Warfare," 21.

⁹ Demitros J. Nicholson, "Seeing the Other Side of the Hill": The Art of Battle Command, Decisionmaking, Uncertainty, and the Information Superiority Complex," *Military Review* 85, no. 6 (November 2005): 61.

¹⁰ Robert Bolia, "Unintended Consequences of the Network-Centric Decision Making Model: Considering the Human Operator," (Technical Paper, Air Force Research Lab, Wright Patterson AFB 02 February 2006, 2. Bolia references Voltaire's comment that the Holy Roman Empire was neither holy, nor Roman, nor an Empire.

¹¹ Ibid.

¹² Cebrowski, "Network-centric Warfare," 17.

¹³ Daniel J. Hughes, ed., *Moltke on the Art of War* (Novato, CA: Presidio Press, 1993), 92.

¹⁴ David McKiernan, interview by Aaron Brown, *CNN Presents, Inside the War Room*, Cable News Network, Time Warner Co, 2005. Transcript. <http://transcripts.cnn.com/TRANSCRIPTS/0306/01/cp.00.html> (accessed 8 October 2006).

¹⁵ Robert Coram, *Boyd, The Fighter Pilot Who Changed the Art of War*, (New York, NY: Time Warner, 2002), 334.

¹⁶ Milan Vego, "Operational Command and Control in the Information Age," *Joint Forces Quarterly* 35: 101.

¹⁷ Larry LeGree, "Will Judgments Be a Casualty of NCW?" *United States Naval Institute, Proceedings* 130, no. 10 (October 2004), 3, <http://proquest.nmi.com/> (accessed 6 Oct 2006).

¹⁸ Kavon Hakimzadeh, "The Issue of Decision Up-Creep in Network Centric Operations" (research paper, Newport RI: U.S. Naval War College, 2003), 4. Decision Up-Creep refers to the temptation to control tactical decisions and actions at the operational/strategic commander level.

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- ¹⁹ LeGree, “Will Judgments Be a Casualty of NCW?”, 4.
- ²⁰ Thomas Ricks, *Fiasco* (New York, NY: Penguin Press, 2006), 33.
- ²¹ Baker, 15.
- ²² Franks, 448.
- ²³ Malcolm Gladwell, *Blink* (New York, NY: Time Warner Book Group, 2005), 23.
- ²⁴ David S. Alberts and Richard E. Hayes, *Power to the Edge* (Washington, D.C.: DoD Command and Control Research Program, 2003), 27.
- ²⁵ Mark Adkins and John Kruse, “Network Centric Warfare in the U.S. Navy’s Fifth Fleet—Web Supported Operational Level Command and Control in Operation Enduring Freedom” (Center for the Management of Information, University of Arizona, August 2003), 8.
- ²⁶ Nicole I. Blatt, “Trust and Influence in the Information Age: Operational Requirements for Network Centric Warfare” (research paper, Monterey, CA: Naval Postgraduate School, Department of National Security Affairs, 2004), 56.
- ²⁷ Christopher R. Kemp, “Trust – The Key to Leadership in Network Centric Environments” (research paper, Carlisle PA: U.S. Army War College, 2003), 9.
- ²⁸ Ricks, 128.
- ²⁹ Michael Gordon and Bernard Trainor, *Cobra 2: The Inside Story of the Invasion and Occupation of Iraq* (New York, NY: Pantheon Books, 2006), 316.
- ³⁰ *Ibid.*, 314.
- ³¹ *Ibid.*
- ³² *Ibid.*, 312.
- ³³ *Ibid.*, 312-314. In addition to a perceived lack of aggressiveness, Franks was angry about the SECDEF’s reaction to a Wallace press conference. Wallace stated, “The enemy we’re fighting is a bit different than the one we war-gamed against, because of these paramilitary forces. We knew they were here, but we did not know how they would fight.” This statement was taken in the Pentagon to be a vote of no confidence in the OIF strategy though it was understood in the theater that this was the case.
- ³⁴ Franks, 509.
- ³⁵ Gordon, 314.
- ³⁶ Ricks, 128.
- ³⁷ *Ibid.*, 33.
- ³⁸ *Ibid.*, 39-43.
- ³⁹ Gordon, 308.
- ⁴⁰ *Ibid.*, 326.

⁴¹ McKiernan, *CNN Presents, Inside the War Room*.

⁴² Gordon, 556.

⁴³ Ricks, 127-128.

⁴⁴ The author notes that General Schwarzkopf acted as the CFLCC during Operation Desert Storm and was operationally successful. However, had Schwarzkopf endured the same relationships with the SECDEF as Franks, his ability to serve in both jobs comes into question.

⁴⁵ Nicholson, 58.

⁴⁶ Kemp, 11.

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