It's Not the Speed Of the Computer That Counts!

The Case for Rapid Battlefield Decision-making

by Lieutenant Colonel John F. Antal

"Speed is the essence of war."[1] Sun Tzu

One hundred and sixteen M1A1 tanks and fifty-four Bradley Fighting Vehicles waited in position for the attack to begin. At 0730, on 26 February 1991, the "Tiger Brigade" of the U.S. 2d Armored Division, passed its final orders to its battalions. The brigade, which was attached to the Marine Central Command, had been given the mission to attack to secure the Al Mutla Pass, northwest of Kuwait City. Securing the pass would block the Basra-Kuwait City Highway and trap the Iraqi forces trying to escape to the north.

At 0730, the brigade commander issued an oral order over the FM radio to begin the attack at 0930. Between 0730 and 0930, the brigade's mission, boundaries and final objective changed five separate times![2]

"The most important lesson from recent operations is that close combat operations remain violent, fast-paced, and hard to predict."[3] Time is the one quantity of the battlefield that can never be saved, slowed, or reversed. "Loss of time," Napoleon once said, "cannot be made good in war. Delays alone cause operations to fail."[4]

A major source of delay in combat operations is the vital need to decide, disseminate the plan, and issue the commander's intent to subordinate commanders and soldiers. A study of U.S. Army operations orders determined that the orders issued on seventy operations (eight divisions, thirty-two brigades and thirty battalions) were of such poor quality, fraught with redundant information and needless detail, that the order hindered the units' ability to accomplish the assigned mission.[5]

A smaller, more agile Army XXI force cannot afford this type of command-staff ineffectiveness. If time is the common denominator of all military operations, then the side that can seize a time advantage gains a dominant benefit. Time is gained by thinking and acting faster than your opponent. Time is gained by making clear, reasonably correct decisions quickly. Time gained in making the decision, therefore, is time gained for combat.

The goal of the command-staff process for Army XXI must be to assist the commander in making correct decisions *in time*. The ability to act faster than the enemy, to gain agility over an opponent, is largely dependent upon rapid and correctly timed human decisions. In war, commanders and staffs must be experts at using all the available decision-making tools to accomplish successful battle command.[6]

How commanders make decisions, and how we teach generations of soldiers to make combat decisions, is crucial to how we will fight wars and what command and control equipment we buy. Previous versions of FM 100-5 emphasized "flexibility and speed, mission-type orders, initiative among commanders at all levels, and the spirit of the offense."[7] An effective tactical decision-making process must aid the commander to accomplish these goals.[8]

The Commander's Role

The first demand in war is decisive action. Decisive action requires clear, succinct, and timely orders. The commander's primary role is to make decisions. The commander's decisions are translated by his staff into plans for execution. The purpose of the command-staff process, therefore, must be to support the commander's ability to make decisive decisions **in time**. Muddled, confused, or late decisions produce combat orders that often set the stage for defeat.

In the past, the preparation of explicit plans to accomplish battlefield synchronization required lengthy staff interaction and extensive, detailed planning. In these procedures, particularly the procedures taught at all of the Army's staff schools, commanders often play a peripheral role in developing the tactical plan. Once the staff labored over various courses of action, the commander would magically appear and select one of the available options. The quality of the commander's decision, however, was often framed by the skill — or lack thereof — of the staff.

National Training Center [NTC] experiences are replete with examples where the staff has consumed the majority of the planning time on courses of action that are suddenly discarded by the commander, based on information either neglected or unknown by the staff prior to the decision briefing. Moltke's dictum that "no plan survives the first shot," reinforces this trend.

In the future, the tempo of Army XXI operations promises to be faster than ever before. Distributed information will stream to the commander in a process called data fusion. The side that can use this information to decide and issue orders faster than its opponent can generate a decisive, battle-winning advantage.

To gain this time advantage, the tactical planner must create and transmit the minimum essential elements of the order within the limitations of the available planning time. To use the information provided by the information revolution to advantage, commanders will be required to decide rapidly. On the Army XXI battlefield, rapid decision-making will be an essential tactical skill.

The Role of the Staff

Staff officers assist the commander. Staff officers provide information and analysis to assist the commander in making decisions. The staff also assists the transmission of the commander's decisions to subordinates and ensures the execution of the commander's decisions. The staff also identifies unforeseen opportunities or situations which might require more guidance. Throughout the decision-making process, the commander relies on his staff to provide technical expertise in their functional areas. The staff's primary role is to provide experienced judgments and analysis to the commander. These judgments are derived from their study of the available information and their experience, training, intellect, and intuition. An effective tactical staff provides the commander with a means to ensure that his decision and commands are timely and sound.

Traditionally, American military staffs employ a very deliberate orders process. This deliberate process is designed to decrease the risk of analysis conducted by inexperienced staffs. Using the logic that "two heads, or more, are better than one" the staff is expected to provide a series of educated options for the commander's selection. This process emphasizes detailed evaluation of options with a goal to provide explicit instructions to synchronize the force. This orders-intensive approach complements the traditional American style of attrition warfare.[9]

In the past, the traditional response to the chronic American weakness in command and control was to plan more thoroughly and leave as little to chance as possible. In their excellent book, *America's First Battles*, Charles E. Heller and William A. Stoft remarked that "thorough planning, with its natural de-emphasis of unexpected situations (beyond the scope of contingency plans), led to rigidity and, often, heavy losses. In other words, the command-and-control weakness and its chosen professional remedy were but two aspects of a single larger problem: inadequate preparation of commanders and staffs for the real world of combat."[10]

The effectiveness of the current command-staff process is an item of close scrutiny at the CTCs. Lessons learned from the NTC suggest that units have difficulty conducting time-critical tactical planning. This problem often develops because planners spend too much time trying to complete a detailed synchronization plan for a single course of action without enough information concerning the enemy.[11] The question that has yet to be proven is whether the input of more raw data from the new information systems we are fielding with Army XXI will increase human decision-making abilities. Recent Army Warfare Experiments (AWE) seem to show that too much information merely saturates the human decision-making system and freezes action.[12] If so, is this because we are wedded to an industrial age decision-making process?

In addition, even with new technology, most units practice inefficient and ineffective command-staff process techniques. The average staff arrives at the NTC poorly trained in time-critical orders techniques. Planners are told merely to work faster in these time-critical situations. The products (task and standard) of an order are seldom defined. The priority of orders products is seldom thought through. The results are that tactical planners often attempt too much planning in too little time.

The reason for these failures may lay in the chaotic nature of combat and its inability to conform to linear logic. Tactical decision-making is conducted in an environment of great uncertainty, unpredictability, and constant change, and has therefore been viewed by many as more an art than a science. Doctrine attempts to bridge this gap by providing commanders and staffs with pragmatic guidelines to accomplish planning in the chaotic environment of war.

War, however, is chaos. Detailed plans seek order in an environment that rejects order. The analytical decision-making approach is an attempt to bring order out of chaos by applying overwhelming mass. Current U.S. Army and Marine Corps doctrine on the command-staff process emphasizes this analytical approach to combat problem-solving.

Frequently, commanders must make decisions in combat without the benefit of a time-intensive, deliberate analysis. In combat, the commander may have to proceed through the decision-making process and issue oral orders based on his own knowledge of the situation, without taking the time to formally include the staff in the process. This suggests that commanders must possess a flexible set of decision-making strategies that can meet the demands of planning when there is plenty of time and during time-pressured situations. The commander must then choose the correct decision-making process, based on his assessment of the situation and upon the available planning time.[13]

It appears obvious that a doctrine that provides only one way to accomplish tactical planning, and a training system that emphasizes only **one way**, will lack the flexibility to meet the varied demands of war. It is not enough merely to teach and practice the deliberate decision-making method and expect commanders and staffs to improvise in time-pressured situations. Under such conditions, the deliberate process is truncated without rhyme or reason. It is as if a marathon racer was now asked to run the 50-yard dash using his normal pace. Against racers trained in the 50-yard dash he'd lose. An effective Army XXI command-staff process, therefore, should provide command and staff methods that will work in both deliberate and time-pressured situations.

Faced with two general situations — deliberate and rapid — the first commander should choose an appropriate decision-making approach. This choice can be simplified to two choices — the analytical and the recognitional decision-making strategies.[14] A simple way to view this decision is the analogy of decision-making techniques as tools in a tool box. The tools in the box are designed to solve tactical planning problems. An effective command-staff process should provide the right kind of tools for each specific task.

Analytical Decision-Making

The first tool in the decision-maker's tool box is analytical decision-making. The United States Army has taught analytical decision-making since World War II as a technique for making decisions based upon the review and comparison of available information. It is a systemic approach to arrive at the best possible solution to a given problem. A systematic approach to decision-making fosters effective analysis by enhancing application of professional knowledge, logic, and judgment. The best decision is determined from evaluation of sets of options, and then comparison of the options by a list of essential battlefield factors. It also creates a systems approach to decision-making easily taught in staff schools.

In analytical decision-making the staff plays the dominant role. The general approach is for the staff to "select a set of alternative decisions to evaluate subjectively the utility (or value to the decision-maker) of outcomes expected under each decision, and to select the decision maximizing the utility."[15] The commander gives general guidance and the staff defines the problem, gathers the facts, and makes assumptions necessary to determine the scope of and the solution to the problem. The staff then develops several possible solutions, analyzes each solution through wargaming, records the wargaming results, and compares the outcome of each solution. Finally, the staff briefs the commander, and he selects the best solution.

In executing an analytical decision-making process, the staff follows a step-by-step approach to determine the **single best** solution. If conducted properly, several effective plans will be developed from which the commander will select only one. If the staff wargames each plan thoroughly, the analytical process will produce a series of workable options for the commander. The analytical process also double or triples the time needed to produce an effective plan. If the staff takes shortcuts, and does not completely wargame each set of options, it is not conducting analytical decision-making. "Jumping at a solution" because of a lack of planning time usurps the commander's authority and presents him with a *fait accompli* — a flawed analytical result.

This situation typically occurs, however, when brigade and battalion staffs are hard-pressed to prepare plans in limited time using the analytical process. This practice typically presents the commander with one well-thought out plan, and several half-completed, straw-man plans. During the decision briefing, most commanders reject the straw-man plans out-of-hand and are forced to accept the decision of the staff because time is running out.
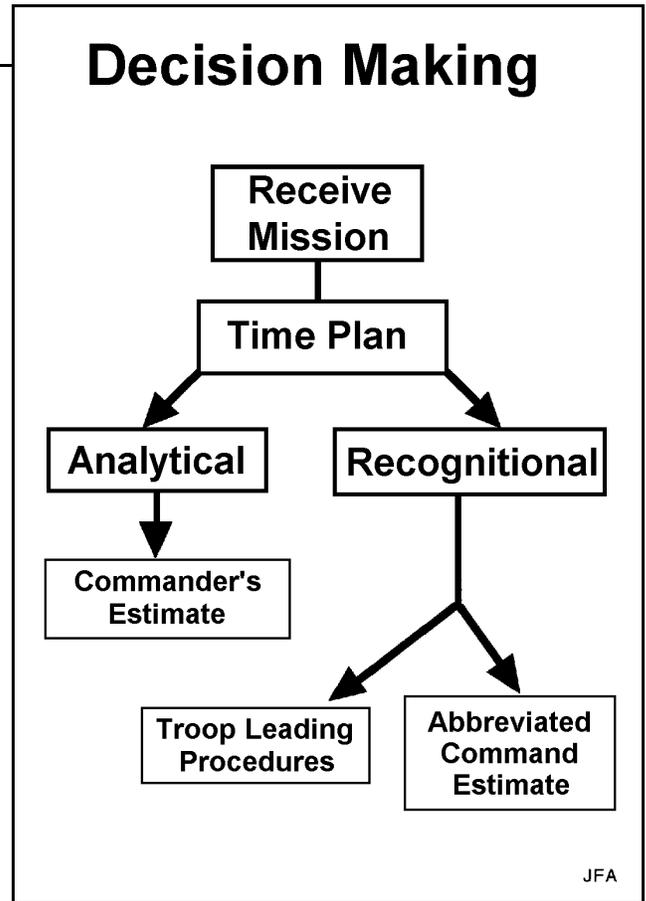
This analytical decision-making process, as established in the Command Estimate format, can be highly effective under certain circumstances. The analytical approach is the preferred approach when the information concerning the enemy is too abstract to recognize a discernible pattern, when justification is a prime requirement for the final decision (coalition planning for example), when the goal of the decision-making process is a single optimized solution, and, most importantly, when there is plenty of time to analyze all the facets that impact on the

solution to the tactical problem. The problem with the analytical process is that it requires a lot of time to develop, wargame, brief several workable courses of action, and then select the best. The emphasis is on finding the best solution, not in finding a workable solution within the constraints of the available planning time. Efficiencies can be gained by practice, but even the best staff runs out of time when they attempt to use analytical decision-making techniques, as represented by the Army's Command Estimate, to develop tactical plans during time-sensitive tactical situations. The stories from the field, of subordinate unit commanders waiting at the brigade or battalion command post for the operations order to be completed, are legion.

In years of training experiences at the National Training Center, it is commonplace that the command-staff team seldom practices analytical decision-making much beyond the initial tactical plan at the beginning of the rotation. After the initial order, all subsequent planning and preparation periods seldom permit the full implementation of the analytical approach.[16]

This is particularly true because brigade and battalion staffs rarely have enough information on the enemy during planning to select a single best course of action. In most cases, the selection of the best course of action is based solely on the terrain and not the enemy.

Basing the scheme of maneuver solely on the terrain places the commander and his staff in a dangerous dilemma. With the decision made without adequate information to select a best approach, the commander either ignores the enemy and forces his synchronized plan to work, or ignores the plan and issues oral orders to change the scheme of maneuver. Commanders are, therefore, often forced to ignore the detailed decision-making doctrine in order to make the vast majority of time-pressured tactical decisions during training exercises.[17] The

Decision Making

Receive Mission

Time Plan

Analytical → Commander's Estimate

Recognitional → Troop Leading Procedures / Abbreviated Command Estimate

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bottom line is that the analytical decision-making process is a time-intensive staff process that is seldom useable in time-pressured situations.

Recognitional Decision-Making

The term recognitional decision-making (also known as: recognition prime decision-making) is a technique for making decisions based upon the intuitive knowledge or experience of the decision-maker. In recognitional decision-making, the commander plays a prominent role. This technique emphasizes the quick mental jumps at **a** solution to a problem and the wargaming of this solution and its branches. The recognitional decision-making strategy applies when a decision-maker recognizes a situation as typical, recognizes the typical reaction to the situation, evaluates the reaction for feasibility, and then either implements it, improves it, or rejects it for a branch plan.[18]

Recognitional decision-making focuses on the commander's ability to recognize tactical patterns, decide the correct counter-pattern, and apply that solution rapidly to meet the demands of time-pressured situations. Staff work is still essential, it is merely focused on implementing the commander's base plan and then developing one or two branch

ANALYTICAL AND RECOGNITIONAL DECISION MAKING STRATEGIES

INCREASING LEVEL OF COMMANDER AND STAFF COMPETENCE

RECOGNITIONAL

ANALYTICAL

INCREASING TIME
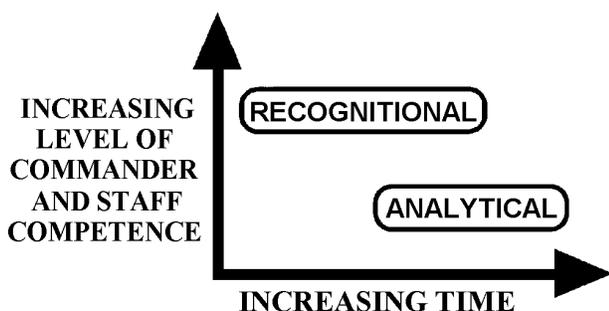
plans. Decision points suddenly become understandable — they are the points in time, space or event where the commander will execute branch plans. Experienced commanders frequently conduct this kind of decision-making.

Recognitional decision-making has the commander playing a major role in determining the course of action (decision), while his staff focuses its effort on implementing his decision. Rather than searching for a "single best solution," and conducting thorough analyses of each promising course of action, the commander uses his knowledge of the situation and the latest reports to rapidly decide on one specific course of action. The commander decides upon this course of action based upon an assessment of the situation, the recognition of the patterns involved, and by applying his intuition and tactical judgment. The commander "hedges his bets" by executing branch plans that were triggered by "reconnaissance pull"[19] operations. To accomplish this effectively takes a commander and staff trained in a rapid decision-making process.

The recognitional strategy is **implied** by the Army's tried and tested Abbreviated Command Estimate and the Troop Leading Procedures. In the abbreviated process, the commander issues specific guidance to his staff, and the staff implements the commander's decision (rather than optimizing several possible solutions). The Troop Leading Procedures, in particular, were designed to aid the commander to apply his judgment to decide quickly a course of action when he did not have a staff.
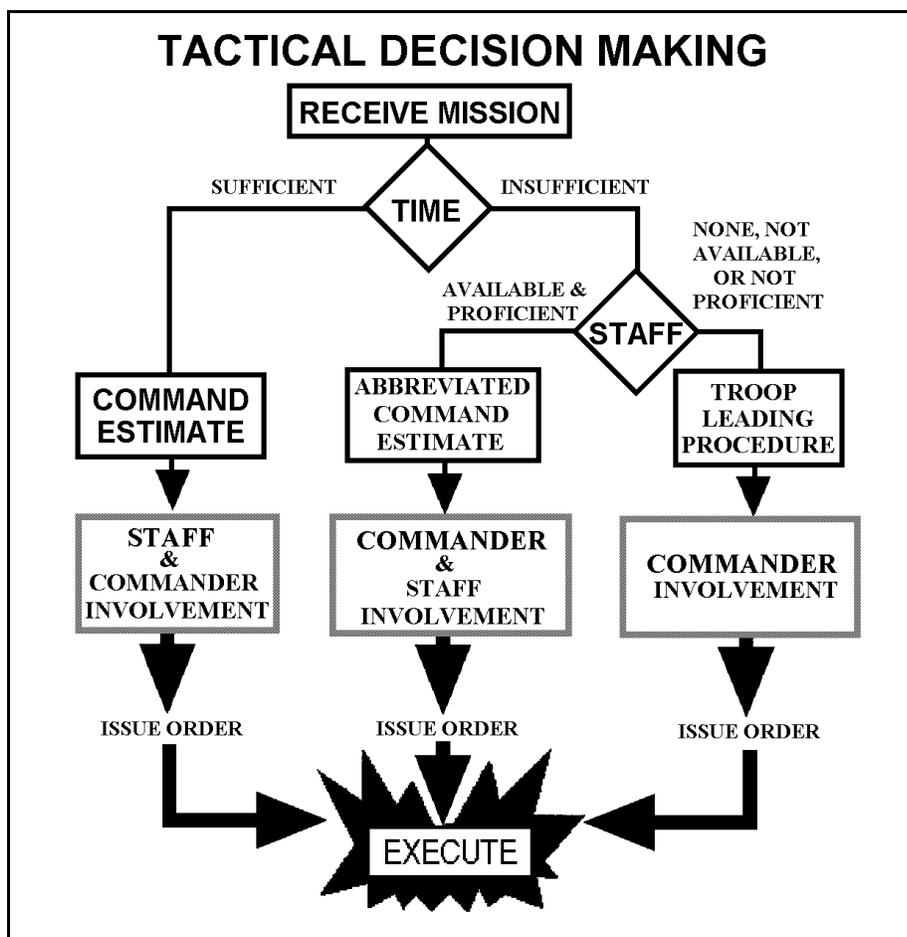
The analytical and recognitional methods should not be considered competing decision-making strategies. They are, instead, complimentary options for decision-making, designed to fit special conditions. The commander must decide which decision-making strategy to choose based upon his assessment of the

enemy and friendly situation. The ability to select either an analytical or recognitional approach provides commanders a flexibility that has not yet been institutionalized by the United States Army or Marine Corps.

Every tactical decision in war must be based on the enemy. Commanders who attempt to execute their plans, regardless of the enemy situation, open themselves up to fall into a trap. Commanders who determine their courses of action based solely on the terrain, likewise set themselves up for failure. "What is of supreme importance in war is to attack the enemy's strategy."[20] Commanders must, therefore, quickly analyze the enemy situation, estimate the time available for planning, and rapidly select the appropriate decision-making strategy.

Rapid decision-making is simply the ability of a commander to streamline the decision-making process by making a quick decision on the base plan and establishing guidelines for branch plans. This procedure focuses on the enemy, minimizes planning time, and maximizes preparation and execution time. The difference between the analytical and the recognitional approach is the level of commander involvement and the role of the staff. In the recognitional approach the commander makes the decision quickly, without the benefit of a lengthy decision briefing of several thoroughly wargamed courses of action. The staff then implements the commander's decision, synchronizes the effort, develops at least one branch plan, and produces the operations order. By making the decision early, the commander streamlines the entire process and saves time.

If the commander has a staff, and has the time to conduct analytical decision-making, an analytical approach can be employed. If the commander has a staff, but does not have time to conduct the complete analytical decision-making process, a recognitional approach is ap-

TACTICAL DECISION MAKING

RECEIVE MISSION

TIME

SUFFICIENT

INSUFFICIENT

STAFF

AVAILABLE & PROFICIENT

NONE, NOT AVAILABLE, OR NOT PROFICIENT

COMMAND ESTIMATE

ABBREVIATED COMMAND ESTIMATE

TROOP LEADING PROCEDURE

STAFF & COMMANDER INVOLVEMENT

COMMANDER & STAFF INVOLVEMENT

COMMANDER INVOLVEMENT

ISSUE ORDER

ISSUE ORDER

ISSUE ORDER

EXECUTE

propriate. If the commander does not have a staff due to the combat situation, a recognitional approach is the only alternative.

Conclusion

To paraphrase Sun Tzu, decision-making is too important not to be studied.[21] Today we are experiencing a rate of information exchange that is unprecedented in human history. Tomorrow, information will race across electronic hypernets at increasing speeds, making today's information exchanges look like a race between a message delivered by runners compared to a message delivered by computer modem. If we do not discuss and improve the way we think about making decisions more rapidly, we may create a situation that **requires** automated decision-making.

Military organizations now operate on a digital battlefield. In the information age, mental and physical agility will dominate the battlefield. Army XXI decision-making doctrine, therefore, must emphasize that **plans are a basis for changes**. Human decision-making will play a dominant role in fusing the power of information systems if decision-making can be done rapidly enough to take advantage of the promises of the information systems currently being deployed. "The mental agility of the commander, organizational agility of his staff, and physical agility of his units are vital to success."[22] Those organizations that can process accelerated information and produce effective orders from their decision-making apparatus gain a decisive advantage. Those that cannot will be defeated while the staff officers in the tactical command post watch the battle lost on their computer screens.

Until the fateful day when someone decides to fully automate military decision-making, tactical decision-making will be executed by people. Information acceleration has not increased the speed of human decision-making — it has merely increased the time required to gather information. Rapid decision-making requires sharp commanders assisted by finely honed staffs. Understanding decision-making is an important key to unlocking rapid thinking. This ability — the critical, human, skill to decide rapidly — can be practiced and learned. Technology can assist rapid decision-making, but *how* we think is a specifically human capacity.

Army XXI envisions an agile, precision force that will require precision command as much as it will rely on precision fires Army XXI will require an agile decision-making process that will permeate all three levels of war — strategy, operational art, and tactics. As these levels are compressed and blurred, the decision-making needs of the tactical commander become critical, for this level is the cutting edge of battle. In a smaller Army XXI, tactical operations will often have operational and strategic effects.

Rapid decision-making can assist the information age-equipped command-staff team to visualize decisive advantages *in time*. Decisive advantages that are visualized in time can be turned into victory. The key to accelerated agility, therefore, is still measured more by the thinking ability of our people — especially the command-staff team. As the example of the Tiger Brigade clearly illustrates, combat situations often require rapid decision-making. Recognitional decision-making enables the command-staff team to make rapid decisions on a rapid, fast paced 21st century battlefield. As with your personal computer, it is ultimately not the megahertz rating that determines how effectively you can use your computer, it is the speed of the operator.

Notes

[1]Samuel B. Griffith, ed. and trans., *Sun Tzu, The Art of War*, (New York: Oxford University Press, 1963), p. 134.

[2]Notes from COL Robert M. Williams, who, then a major, was the S3 of the 1st Brigade, 2d Armored Division, assigned to Marine Central Command Control on 26 February 1991 during Operation Desert Storm.

[3]General William W. Hartzog, *Land Combat in the 21st Century,* (Fort Monroe, Virginia: U.S. Army Training and Doctrine Command, Dec. 1997), p. 3.

[4]Napoleon wrote to his brother Joseph on March 20, 1806. Henry Lachouque, *Napoleon's Battles, A History of his Campaigns*, trans. by: Roy Monkcom, E.P. Dutton & Co. Inc., New York 1967. p. 401.

[5]Major Edward J. Filiberti, *The Standard Operations Order Format: Is Its Current Form and Content Sufficient for Command and Control?* (Leavenworth: School of Advanced Military Studies, U.S. Army Command and General Staff College, Fort Leavenworth, Kan., 1987), p. 70.

[6]Battle command is the "**art** of decision making, leading, and motivating soldiers and their organizations into action to accomplish the mission at least cost to soldiers."

[7]U. S. Department of the Army, *FM 100-5 Operations,* (Washington, D.C.: U.S. Government Printing Office, 5 May, 1986), p. i.

[8]Roger Beaumont, *The Nerves of War, Emerging Issues in and References to Command and Control,* (Washington: D.C.: AFCEA International Press, 1986), p. 12.

Note: "While the command and staff process was described and analyzed from time to time, few practitioners, historians or theorists dealt with exactly how the increasingly complex systems were controlled — perhaps because it was incomprehensible. Military history and science focused on the general progress of battles and campaigns, embellished by anecdotes and descriptions of events, leaving the actual functions of headquarters and signal functions and those who worked them as far out of focus as field hospitals or quartermaster depots. At the same time, many command and staff techniques and practices remained in the military 'shop culture' procedures shaped by momentum, custom, word of mouth, adaptive informal practice and the inclination or whim of commanders and staffs."

[9]Major George E. Orr, *Combat Operations C3I: Fundamentals and Interactions,* (Maxwell Air Force Base: Air University Press, Maxwell AFB Alabama, July 1983), p. 78.

Note: "The traditional American approach to war attempts to emphasize the enemy decision process (deterrence), to complicate the enemy problem-solving structure (TRIAD), and to manage risk in conventional conflicts (attrition-based strategies)."

[10]Charles E. Heller and William A. Stoft, *America's First Battles, 1776-1965.* (Lawrence, Kansas: University of Kansas Press, 1965), p. 330.

[11]Author's notes from experience derived from observing over 96 brigade battles at the National Training Center, Fort Irwin, California as the Brigade Operations Observer Controller.

[12]"And even when commanders have the information, they believe that they have to wait for all the information so they can make a perfect decision. The result is inaction and ceding initiative to the enemy. This happened in AWE's rotation at the NTC last March [1997]." Quote from an observer of the March 1997 Army Warfighting Experiment at NTC.

[13]Unfortunately current U.S. Army doctrine does not explain how to accomplish this.

[14]Gary A. Klein, "Strategies of Decision-Making," *Military Review,* (Command and General Staff College, Fort Leavenworth, Kansas, May 1989), p. 56.

[15]Orr, p. 39.

[16]Author's notes from experience derived from observing over 96 brigade battles at the National Training Center, Fort Irwin, California as the Brigade Operations Observer Controller.

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[17]Paraphrased from Klein Associates Inc., *A Knowledge Elicitation Study of Military Planning,* p. 62. Hereafter listed as Klein.

[18]Paraphrased from Klein, p. 23.

[19]"Recon pull" operations require a rapid decision-making command-staff process. An example of "reconnaissance pull" operations was provided in a monograph produced by the U.S. Army Armor Center titled *Tanking in the Desert* (Fort Knox: U.S. Army Armor Center, August 1990), p. 7-40:

Note: "Recon Pull is a technique used by commanders to identify and maneuver against an enemy weak point and to exploit success. Leaders at every level — from scout squad leader to regimental commander — may use this technique. In a force-oriented attack, the commander should maneuver his main effort against the enemy weak point. By attacking the weak point of the enemy, the commander enhances the ability of the unit to destroy the enemy; the commander enhances the ability of the unit to destroy the enemy because it can generate tremendous local superiority in firepower.

Commanders normally identify a weak point during IPB. Often, however, the commander will not know ahead of time the exact location of the weak point with absolute certainty. Reconnaissance during the execution of the attack will often disclose that the suspected weak point is not present, and that there is a weak point elsewhere. **The commander should then attempt to shift his main effort to attack the newly discovered weak point**." p. 7-40.

[20]Sun Tzu, p. 77.

[21]Sun Tzu, p. 63.

[22]FM 100-5, 1993, p. 6-15.

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