COUP D'OEIL:
STRATEGIC INTUITION IN ARMY PLANNING

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FOREWORD

In our military professions, formal analytical methods co-exist with intuitive decisionmaking by leaders in action. For the most part, there is no harm done. But many officers can recount times when they knew they should have "gone with their gut," but followed instead the results of their analytical methods. The gap between these two forms of decisionmaking perhaps has grown wider in recent times, especially in Iraq, where adaptive leadership seems to have overshadowed formal methods of planning. Departing from formal methods increasingly seems to be the mark of an effective commander, as we learn from Dr. Leonard Wong's recent Strategic Studies Institute (SSI) report, *Developing Adaptive Leaders: The Crucible Experience of Operation Iraqi Freedom* (July 2004).

But must it be so? Dr. William Duggan shows how to reconcile analytical and intuitive methods of decisionmaking by drawing on recent scientific research that brings the two together. He applies this new research to the Army's core methods of analytical decisionmaking as found in Field Manual (FM) 5-0, *Army Planning and Orders Production*. The result is "strategic intuition," which bears remarkable resemblance to von Clausewitz's idea of *coup d'oeil* in his classic work, *On War*. Dr. Duggan's monograph provides a theoretical overview of strategic intuition and practical suggestions for amending FM 5-0 to take it into account.

The Strategic Studies Institute is pleased to offer this monograph as a contribution to the ongoing effort to make our military forces ever more adaptable in both theory and practice.

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Director
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SUMMARY

This monongraph reviews the U.S. Army's standard methods for problem solving and decisionmaking to see how they might take more account of a commander's intuition at every step. The ideas offered here go beyond the Army's current view of intuition in its latest version of Field Manual (FM) 5-0, *Army Planning and Orders Production*, issued January 2005. That version presents "analytical" and "intuitive" as two different types of decisionmaking, for two different situations:

- The analytical approach to decisionmaking serves well when time is available to analyze all facets affecting the problem and its solution. However, analytical decisionmaking consumes time and does not work well in all situations—especially during execution, when circumstances often require immediate decisions.
- Intuitive decisionmaking is especially appropriate in time-constrained conditions. It significantly speeds up decisionmaking. Intuitive decisionmaking, however, does not work well when the situation includes inexperienced leaders, complex or unfamiliar situations, or competing courses of action (COAs).

This divide between analysis and intuition reflects an outmoded view of the human mind that science no longer supports. Recent advances in how the mind works have overturned the old idea that analysis and intuition are two separate functions that take place in two different parts of the brain. In the new view, analysis and intuition are so intertwined that it is impossible to sort them out. There is no good analysis without intuition, and no good intuition without analysis. They go together in all situations. Some scientists call the new model of the brain "intelligent memory," where analysis puts elements into your brain and intuition pulls them out and combines them into action.

This new model of the brain finds two striking precedents: research in cognitive psychology on expert intuition, especially by

Gary Klein; and *On War* by Carl von Clausewitz. Both Klein and von Clausewitz put flashes of insight at the heart of problem solving and decisionmaking. Their views on how those flashes happen match quite well what neuroscience now tells us about how the brain works. To describe this phenomenon, Von Clausewitz used the term *coup d'oeil*, or "glance" in French. Here we use *coup d'oeil* as a shorthand, thanks to its military origins, and "strategic intuition" as a more formal term, where a COA forms in the mind through a mix of strategic analysis, intelligent memory, and expert intuition.

This monograph reviews the Army's core procedures on problemsolving and decisionmaking from our new view of strategic intuition. We go step-by-step through the four main chapters of FM 5-0, which embody the Army's common methods for how commanders of every rank decide what COA to take. We see in detail where these methods do and do not match our new understanding of strategic intuition. Then we consider the case of a brigade in Iraq that recently developed a shorter version of FM 5-0, to compare this real-time experiment to what we suggest in this report.

This in no way criticizes the Army or its commanders. When Gary Klein tests methods closer to strategic intuition with Army officers in action, they tend to comment, "That's what we do." Good commanders use strategic intuition. They treat manuals only as guides, and adapt procedures as they see fit. *Coup d'oeil* is really a description of what Army leaders already do. We have gained enough scientific knowledge on how a commander's mind works to revise our manuals accordingly, so there are fewer adaptations needed. Everyone takes FM 5-0 with a grain of salt: now that we know how the salt works, we can add it directly to the recipe.

COUP D'OEIL: STRATEGIC INTUITION IN ARMY PLANNING

Introduction.

In recent years, science has made great strides in understanding how thinking really happens. A generation ago, scientists believed in two main modes of thought where analysis and intuition were two different functions, on two different sides of the brain. But scientists no longer believe that. Instead, they recognize a single mode of thought that combines analysis and intuition. Scientists now see the brain take in elements, store them in short- or long-term memory, and then select and combine them in flashes of insight. Some scientists call this new model "intelligent memory," where analysis and intuition are impossible to sort out.[1] Neuroscientist Barry Gordon tells us:

> Intelligent Memory . . . is like connecting dots to form a picture. The dots are pieces or ideas, the lines between them are your connections or associations. The lines can coalesce into larger fragments, and these fragments can merge to form a whole thought. This whole thought may be a visual image, a piece of knowledge, an idea, or even a solution to a problem. Individual pieces, the connections, and the mental processing that orchestrates them generally work together so they appear to be a single cognitive event. That's what happens when ideas or concepts "pop" into your mind.[2]

Perhaps the best way to understand this new model of the brain is to think of a giant warehouse. Your brain is the greatest inventory system on earth. It constantly takes in information, breaks it down, and puts in on its warehouse shelves—that's analysis. Your brain then compares the new information with other items on other shelves. When it finds a match, it pulls those items off the shelves and puts them together in a flash of intuition. The combination of analysis and intuition becomes "creative insight," which is "the ability to take existing pieces of information and combine them in novel ways that lead to greater understanding and suggest new behaviors and responses."[3]

This view, in turn, confirms previous research on expert intuition, especially by Gary Klein.[4] An expert's brain stores up cases from direct experience and the experience of others acquired through learning. Answers then come to the expert in flashes of insight, large and small. Klein followed experts in action—firefighters, emergency room nurses, soldiers in battle—and interviewed them on the details of their decisions. At first they said, "It was just my intuition." But every time, Klein was able to pull from them the elements they combined from what they saw and what was already in their brains. He especially noted that experts often change the goal or the problem to be solved after they see what to do. That overturns conventional methods of linear problem solving, where you define the goal or problem first. Klein tells us:

> What triggers active problem solving is the ability to recognize when a goal is reachable . . . There must be an experiential ability to judge the solvability of problems prior to working on them . . . Experience lets us recognize the existence of opportunities. When the opportunity is recognized, the problem solver working out its implications is looking for a way to make good use of it, trying to shape it into a reasonable goal.[5]

This modern research on intelligent memory and expert intuition finds a surprising precedent in the writings of Carl Clausewitz in the early 19th century. His great work, *On War*, was the first scholarly study of strategy. Clausewitz set out to explain the success of Napoleon Bonaparte, who won more battles than any other general in recorded history. With our new knowledge of how the mind works, we can pick out one key term that Clausewitz used for the flash of insight when a strategist sees what to do, despite the uncertainties all around. He called it *coup d'oeil*, which means "glance" in French. *Coup d'oeil* cuts through the fog of war. Clausewitz explains, "Now, if one is to get safely through this perpetual conflict with the unexpected, two qualities are indispensable . . . The first is figuratively expressed by the French phrase *coup d'oeil*. The other is resolution."[6]

For Clausewitz, *coup d'oeil* is "the rapid discovery of a truth which to the ordinary mind is either not visible at all or only becomes so after long examination and reflection."[7] After you see what to do, you need resolve to carry through despite the remaining uncertainties.

For Clausewitz resolution means "removing the torments of doubt . . . when there are no sufficient motives for guidance."[8] To these two qualities, Clausewitz adds a third: "From the *coup d'oeil* and resolution, we are naturally led to speak of its kindred quality, presence of mind, which in a region of the unexpected like War must act a great part, for it is indeed nothing but a great conquest over the unexpected."[9]

To these three—*coup d'oeil*, resolution, and presence of mind—Clausewitz adds a fourth element: the content of the *coup d'oeil* itself. In theory, an infinite number of possible goals and courses of action (COAs) exist in any situation. Clausewitz asks, "How does strategy arrive at a complete list of these things?" He answers: "Strategy deduces only from experience the ends and means to be examined . . . It therefore turns to experience, and directs its attention on those combinations which military history can furnish."[10] Note that "experience" here means not only the commander's experience, but all of human history. Napoleon himself told us he borrowed his strategy from the campaigns of the "great captains" he studied.[11] Elsewhere, Clausewitz calls this historical experience "examples from history" which "make everything clear, and furnish the best description of proof in the empirical sciences."[12]

Clausewitz's discussion of *coup d'oeil* and its three accompanying elements—resolution, presence of mind, and examples from history—shows remarkable similarity to what modern research tells us about strategic intuition.[13] Yet U.S. Army planning methods have followed more Clausewitz's leading competitor, Antoine Jomini, whose *Summary of the Art of War* won over many military academies of the 19th century, including West Point. For logistics, which Jomini founded as a discipline, there is no harm done. But for strategy at all levels—that is, figuring out your COA and the end state it leads to—modern science favors Clausewitz.[14]

The resolution that follows *coup d'oeil* is especially important in modern professions. You might have a *coup d'oeil* but then fail to carry it through, because you cannot explain it using the formal tools of your trade. Many key insights are lost this way. We have so many advanced methods of analysis and decisionmaking today, that we sometimes forget they are aids to problem solving, not the problem solvers themselves. Human beings are the problem

solvers. Our brains solve problems through insight. The science of intelligent memory and expert intuition—as well as our old friend, Clausewitz—can help us put insight back at the center of what we do.

This monograph aims to help the Army put a commander's insight more firmly at the center of its core methods for problem solving and decisionmaking. We adopt "*coup d'oeil*" as a shorthand, and "strategic intuition" as a more formal term, to convey what studies of intelligent memory and expert intuition now confirm about what Clausewitz told us. We define strategic intuition as follows:

> **Strategic intuition.** The selective projection of past elements into the future in a new combination as a course of action that might or might not fit your previous goals, with the personal commitment to follow through and work out the details along the way.

The next sections of this monograph work through the implications of this definition for the Army's methods of command, using Field Manual (FM) 5-0, *Army Planning and Orders Production*, as our core manual. In the Preface to FM 5-0, we learn that it is "the common reference for planning within the Army education system." It applies to "all Army leaders . . . at all echelons," and "across the spectrum of conflict . . . and the range of operations." So every Army leader should use the methods of FM 5-0 for every problem or decision. This certainly makes our effort worthwhile: if strategic intuition can improve the methods in FM 5-0, it will benefit the Army's whole leadership corps.

Of course, Army leaders at present do not follow FM 5-0 exactly. They already apply strategic intuition and adapt the methods of FM 5-0 to their own styles. If *coup d'oeil* is merely relabeling what Army leaders already do, this study might help the Army adapt FM 5-0 accordingly. That would save time in training and in the field, through common methods that conform more closely to how a commander's mind really works.

Fundamentals of Planning.

Chapter 1 of FM 5-0, "Fundamentals of Planning," begins with a quote from General George Patton: "Successful generals make

plans to fit circumstances, but do not try to create circumstances to fit plans."

Let's pause right here. We know that Patton was famous for his "sixth sense"—flashes of insight that showed him his strategy. His commander, Omar Bradley, complained that Patton was a bad planner. Patton only worked out all the details after his *coup d'oeil* clicked in. Before that, he left everyday planning to his staff. Patton made no secret of the source of his insights: "For years I have been accused of indulging in snap judgments. Honestly this is not the case because . . . I am a profound military student and the thoughts I express . . . are the result of years of thought and study."[15]

Patton's study of past battles was so intense that he seemed to believe in reincarnation, by recounting their details as if he had been there. A great soldier must become:

> . . . so thoroughly conversant with all sorts of military possibilities that whenever an occasion arises he has at hand without effort on his part a parallel. . . to attain this end, I think it is necessary for a man to begin to read military history in its earliest and hence crudest form and to follow it down in natural sequence permitting his mind to grow with his subject until he can grasp without effort the most abstruse question of the science of war.[16]

Patton was a striking example of strategic intuition by applying examples from history through *coup d'oeil*. FM 5-0 seems to quote Patton for a more general purpose, however, to stress that: "Military operations are uncertain and unpredictable . . . Any plan is a framework from which to adapt, not a script to be followed to the letter."[17] We might add that Patton used strategic intuition to handle uncertainty and adaptability. We shall see that FM 5-0 handles these factors in a very different way.

We read on to find that Army planning takes three main forms: Army problem solving, the military decisionmaking process (MDMP), and troop leading procedures (TLP). In all three forms, the "planning process structures the thinking of commanders and staffs while supporting their insight, creativity, and initiative."[18] On the surface, there is nothing wrong with this statement. But look deeper, and you find the old model of the brain: structured analysis on one side, and unstructured insight and creativity on the other.

Strategic intuition, in contrast, blends analysis, structure, insight, and creativity so thoroughly that you cannot unravel them. Let's keep going to see exactly how.

Army problem solving "provides a standard, systematic approach to define and analyze a problem, develop and analyze possible solutions, choose the best solution, and implement a plan of action that solves the problem."[19] This four-step sequence is a classic statement of analytical problem solving. We cannot trace exactly in history where the sequence came from. It just seems "logical," so it is rare for anyone to question it or ask its origin. But we know now that strategic intuition does not follow this four-step sequence. We will see exactly why when we work through the details of specific planning methods.

Next we learn that "Planning is both science and art." The quantifiable aspects are the science—"such as movement rates, fuel consumption, and weapons effects. . . . While not easy, the science of planning is straightforward." The art covers dynamic relationships: "the combination of forces, choice of tactics, and arrangement of activities, for example . . . The art of planning involves choosing from interrelated options."[20] Again, we find that on the surface this distinction between science and art makes sense. It allows planning to embrace both hard facts and creative judgment. But when we look deeper, we find the old two-brain model: one side is scientific, and the other side is artistic.

It would be better to say that the quantifiable aspects of military problem solving give us facts, not science. Science itself is an art, as Thomas Kuhn shows us in *The Structure of Scientific Revolutions*. Scientific advance happens much more by strategic intuition than by the four-step logical sequence of Army problem solving. Kuhn tells us further that science advances by "flashes of intuition" that re-combine elements in a new way, to give a new solution to a new problem.[21] Kuhn especially notes that a problem and its solution arise at the same time, much as Gary Klein found that experts only know what problem they can solve when they see a way to solve it.

As we read on in Chapter 1 of FM 5-0, we soon come to an explicit divide between analysis and intuition: "When developing plans, commanders usually choose between analytic or intuitive means of

decisionmaking."[22] Let's dive into the details here, to see why this split between the two methods puts commanders at a disadvantage. Here we have analysis:[23]

> Analytic decisionmaking approaches a problem systematically. Leaders analyze a problem, generate several possible solutions, analyze and compare them to a set of criteria, and select the best solution. The analytic approach aims to produce the optimal solution to a problem from among those solutions identified. This approach is methodical, and it serves well for decisionmaking in complex or unfamiliar situations by allowing the breakdown of tasks into recognizable elements. It ensures that the commander and staff consider, analyze, and evaluate all relevant factors. It may help inexperienced leaders by giving them a methodology for their lack of experience.
>
> The analytic approach to decisionmaking serves well when time is available to analyze all facets affecting the problem and its solution. However, analytic decisionmaking consumes time and does not work well in all situations—especially during execution, where circumstances often require immediate decisions.

And here we have intuition:[24]

> Intuitive decisionmaking is the act of reaching a conclusion that emphasizes pattern recognition based on knowledge, judgment, experience, education, intelligence, boldness, perception, and character. This approach focuses on assessment of the situation vice comparison of multiple options. It is used when time is short, or speed of decision is important. Intuitive decisionmaking is faster than analytic decisionmaking in that it involves making decisions based on assessment of the situation rather than a comparison of multiple COAs. It relies on the experienced leader's ability to recognize the key elements and implications of a particular problem or situation, reject the impractical, and select an adequate (rather than optimal) COA.
>
> Intuitive decisionmaking is especially appropriate in time-constrained conditions. It significantly speeds up decisionmaking. Intuitive decision-making, however, does not work well when the situation includes inexperienced leaders, complex or unfamiliar situations, or competing COAs. Additionally, substituting assessment for detailed analysis means that some implications may be overlooked. Commanders use intuitive decisionmaking when time is short and problems straightforward. It is usually appropriate during execution.

These passages on analysis and intuition are out of date. They reflect the state of knowledge about how the mind works that predates recent research on intelligent memory. That is no surprise: it takes time for such advances to work their way into everyday practice. This present analysis aims to help out on exactly that.

When we compare the two passages, we find that the statements on intuition come close to strategic intuition, with these exceptions: strategic intuition is usually, but not always, faster than analytic decisionmaking; it is not limited to experienced leaders; it works well in complex and unfamiliar situations, and with competing COAs; it does not overlook more implications than analysis does; and it applies just as well when time is short as when it is not. It is appropriate during execution, but then so is analysis.

Let's go through the passage on analysis to see where it goes astray. First, analysis is no more systematic than strategic intuition: the systems are simply different. We meet again the four logical steps of the analytic method: analyze the problem (step 1), generate several possible solutions (step 2), analyze and compare them to a set of criteria (step 3), and select the best solution (step 4). Even if we follow this sequence, we cannot do it without intuition. To analyze a problem (step 1), we draw on concepts and examples that are familiar to us—that we have in our brains. We cannot draw on concepts and examples we do not have.

So why is analysis better suited to an inexperienced leader? You would think that the more experience you have, the better your analysis (step 1). Same with generating possible solutions (step 2): where do these solutions come from? We reach into our brains for something familiar that suits the situation from our past experience or learning. Again, experienced commanders have an advantage here because of their intuition.

Next, when we analyze and compare the solutions to a set of criteria (step 3), we might ask: where do the criteria come from? There are countless criteria we could use: what makes us choose certain ones for this situation? Again, in practice we look for familiar patterns according to our intuition. And last but not least, when we select the best solution (step 4), on what basis do we decide? Is there a numerical score we use to weigh factors? If so, we assign the

weights by making our best guess—intuition again. If we do not use numerical weights, we rely directly on intuition to tell us which solution is best. And how do we assess "relevant factors"? We must use our intuition about which factors are relevant and which ones are not. There is no other way to do it.

So even if we use the four-step method of analytic decisionmaking, we cannot do it without a major dose of intuition. But in reality, decisionmakers only use this four-step method if they have to—if official procedures make them do it. When left to their own devices, they use strategic intuition. And the more complex or unfamiliar a situation, the more they must do so. Yet there seems to be something sacred in the world of planning about this four-step method, and about the second step especially: generate multiple solutions. We know how Patton handled this step: at the Battle of the Bulge, he prepared for Eisenhower three variations of a plan his *coup d'oeil* showed him. Patton really did not care which one Eisenhower picked. They were not three different solutions at all: they were one solution, in three different packages. In any event, it worked. Eisenhower picked one, and Patton swung into action. Actually, he had already sent his troops in motion, with orders to follow on which exact way to turn.[25]

As Gary Klein shows us, expert decisionmakers do not generate multiple options. They study a situation (step A), and the problem and solution come to them at the same time (step B). They think through the implications to arrive at a course of action (step C), and then commit to it, or reject it if it they think it will not work (step D).[26] In all four steps, they look for patterns of similarity and difference with other situations they have lived or learned about. Every step is fair game for opposing views and full debate, just like any analytical method. This four-step method of strategic intuition is what inexperienced leaders need to learn. Making them use the four steps of analytic decisionmaking only retards their development and does not help them make better decisions in the first place.

Last, but not least, these four steps of strategic intuition are by nature faster than analysis, but not always. For strategic intuition, you study the situation until you see the solution and problem it solves, in one *coup d'oeil* or a series of them. You cannot force the

answer. This is why people solve so many problems in the shower, taking long walks, or at night as they fall asleep. You have to let your mind make its own connections. If it doesn't, you take in more information. Masters of strategic intuition like Patton and Napoleon took in vast amounts of information all the time. Analysis does not rely more on data than intuition does: it just handles it differently.

Back to our analysis of FM 5-0. We learn next about "Combining Analytic and Intuitive Decisionmaking." We find that the "two approaches are rarely mutually exclusive. Commanders often base an intuitive decision during execution on the situational understanding and products generated as part of a preceding" analysis. And "in a time-constrained environment, many of the techniques, such as choosing only one COA, depend on intuitive decisions. Even in the most rigorous analytic decisionmaking, intuitive decisionmaking helps set boundaries for the analysis and fills in the gaps that remain."[27] On the one hand, it is good to read that you can combine analysis and intuition. On the other hand, it is a mistake to think that analysis comes first and that intuition kicks in only later, during execution. Another mistake is to rely on intuition only when time is short, rather than in all situations.

It is good to recognize that intuition accompanies analytic decisionmaking, but strategic intuition goes farther: it offers an alternative to, rather than a support for, analytic methods of decisionmaking. In the end, FM 5-0 advises a commander to choose between analysis and intuition:

> Each method of decisionmaking has its strengths and weaknesses. Selecting one over the other depends primarily on the experience of the commander and staff, and how much time and information are available. The analytic approach is more appropriate when enough time and information are available to choose among different COAs, or when the staff is inexperienced. The majority of tactical decisions made during execution, when time is short and information is lacking or doubtful, are intuitive.[28]

Strategic intuition disagrees with this entire passage. There are not two methods with different characteristics, but one method that combines analysis and intuition at every step. Analysis is never perfect, and neither is intuition. They have strengths and weaknesses,

but knowing that does not help you choose between them: it helps you use them both and know their limits. You do not select one over the other, but apply them at the same time. The balance between them does not depend on the experience of the planners, nor on how much time and information are available. No matter who you are, no matter how much time or information you have, strategic intuition is the best method.

And whether or not you choose among different COAs does not depend on the time and information available, but whether or not you decide to include choosing among COAs as a step. For example, I could have very little information and very little time, and still decide to choose among COAs. Imagine that we have stopped for the night on a convoy, and we awake to gunfire at a distance of what seems a mile away. In two minutes, we can lay our three possible COAs: offense, defense, retreat. Analytic decisionmaking is quite possible in this situation, even with very little time and information, so we can apply analytic methods to tactical execution if we so choose. Strategic intuition is best not when time and information are lacking in tactical execution, but in all cases, because it gives better answers than other methods.

Let's take an opposite example, where there seems to be a lot of time and information. We get the assignment to put a land base somewhere in Region X by 24 months from now. We have plenty of time and information, so we start our four-step method of analytic decisionmaking. In the first month, we analyze the problem (step 1). In the second month, we generate possible solutions (step 2). In the third month, we analyze and compare the possible solutions to a set of criteria (step 3). In the fourth month, we select the best solution (step 4). FM 5-0 tells us that an inexperienced commander is able to follow this analytic method, thanks to the time and information available.

But was this the right thing to do? Hardly. In month one—day one, really—we need to ask, "How much time do we really have?" Region X is not standing still, waiting for us to finish our analysis. There might be something we need to do right away. For example, if we find that a close ally is thinking about a base in Country A, we might need to alert them or at least our superiors to the possibility

of joint decisionmaking as soon as possible. If we do that, how they respond will affect what we do next. And so on. At each step, we marshal as many facts as we can, as quickly as we can, but our COA starts unfolding, in execution or at least in our minds, very soon after we start. And we might have little or no information on the most important piece of the puzzle—for example, the political future of Country A. We might even conclude we do not need a new base, but rather access to the ally's base. So our problem changes, and we work on how to get that access.

In reality, our method would look more like Gary Klein's four steps of how experts think (A-D above) than the analytic methods of FM 5-0. But as good soldiers, we would write down everything in the formats FM 5-0 requires, even if it is extra work and does not match what we actually do. We make sure to follow procedure, at least on paper. In our minds, though, we are doing something else entirely. Strategic intuition is how experienced commanders think—and how we want inexperienced commanders to learn to think—even for situations that seem to feature plenty of time and information.

Next we find the "Fundamentals of Planning." We read:

> Every commander needs a high degree of creativity and clarity of thought to outwit a willing and able opponent. Commanders and staffs consider certain planning fundamentals to assist them in developing effective plans. These fundamentals lend rigor and focus to the purely creative aspect of planning and provide a crucial link between concept and application.[29]

Again, this passage is fine on the surface. Deeper, we see the same split between analysis and intuition, here called "rigor" versus "creativity." Planning fundamentals supply the rigor. But in strategic intuition, creativity is already rigorous. In the old model of the brain, creativity was a mysterious force that defied analysis. In the new model, creativity is connection and combination among existing elements. That form of creativity supplies its own rigor. It does not need analytic methods for that.

FM 5-0 seems to treat creativity and intuition as mysteries, as fits the old model of the brain. That means Army planning concentrates instead on analytic tools:

> The Army's doctrinal planning processes (problem solving, MDMP, and TLP) are based on analytic decisionmaking. They provide a common way to think about solving problems. When faced with a tactical mission, Army leaders define the problem; gather information relevant to it; develop, analyze, and compare COAs; and select the optimal solution. The MDMP provides a standard organized framework for commanders and staffs to approach and solve tactical problems. Using common processes, understood Army-wide, helps commanders standardize planning techniques. Standard techniques facilitate effective planning between echelons and with cross-attached and adjacent units.[30]

This aim for standard methods makes great sense. It is possible, though, to integrate strategic intuition into those standard methods. We no longer have to treat creativity and intuition as mysteries in our planning. We know now how they work. And this integration of strategic intuition would leave most of FM 5-0 intact. For example, the list of 11 Key Planning Concepts would remain the same—such as Control Measures, Risk Mitigation, and Planning Horizons.[31] These concepts make up most of the planning fundamentals that guide FM 5-0. Strategic intuition does not change them, or at least not much.

Here's an instance of one such change. In a section called "Effective Planning," we read:

> Although planning attempts to project the commander's thoughts and designs forward in time, it involves an appreciation for planning horizons. Because the future is always uncertain, plans should not specify future actions with precision. Rather, they remain flexible and adaptable, allowing the opportunity to pursue a variety of options.[32]

On the one hand, this passage is good advice. On the other, it misses a key element of "the commander's thoughts and designs"—that is, they come with a time all their own. A commander's *coup d'oeil* projects action into the future, and it is impossible to predict beforehand how far that is, in what detail. The time horizon and level of detail should follow what the commander sees. So they differ for each situation.

The section on "Planning Horizons" gives three levels: shorter-range or low-uncertainty commitment planning with most detail; medium-range or medium-certainty contingency planning with some detail; and longer-range uncertain orientation planning with least

detail.[33] This is a fine method. We simply need some modification: a commander's *coup d'oeil* might sometimes give most detail for longer-range and uncertain planning. For example, you might see that however they get there, including deception and feints, in a month you see two units joining up at a precise place and taking precise action. So your plans reflect greater detail at the far end than at the near end. It all depends on what your *coup d'oeil* shows you.

Army Problem Solving.

The second chapter of FM 5-0, "Army Problem Solving," begins by restating the four-step analytic model: "Army problem solving is a form of decisionmaking. It is a systematic approach to defining a problem, developing possible solutions to solve the problem, arriving at the best solution, and implementing it.[34] We read that simple problems do not need lengthy analysis, but "for complicated problems involving a variety of factors, a systematic problem solving approach is essential."[35] Strategic intuition agrees—it just uses a different system. Especially in complex situations, *coup d'oeil* cuts through the mass of information to arrive at a COA.

Let's go to the main problem solving model, which appears as a diagram with the four analytic steps broken down further into seven (see Figure 1). From the view of strategic intuition, this model is wrong on many counts. Most important is the sequence. The instructions tell us that leaders must "clearly define the problem before moving on to other steps of the problem solving process."[36] In strategic intuition, your idea of what the problem is often changes as you get deeper into it. Instead of starting by defining the problem, strategic intuition tells you to study the situation, with an open mind as to what the problem really is. So your first step should be #2: gather information.

The instructions give us an example of a problem statement that results from defining the problem: "To determine the best location for constructing a multipurpose vehicle wash rack facility during this fiscal year."[37] This example seems well suited to the seven steps: we consider several possible locations, and assess them all on common criteria, like cost of construction and distance from the vehicles. This is a simple problem without many factors at play—so it seems

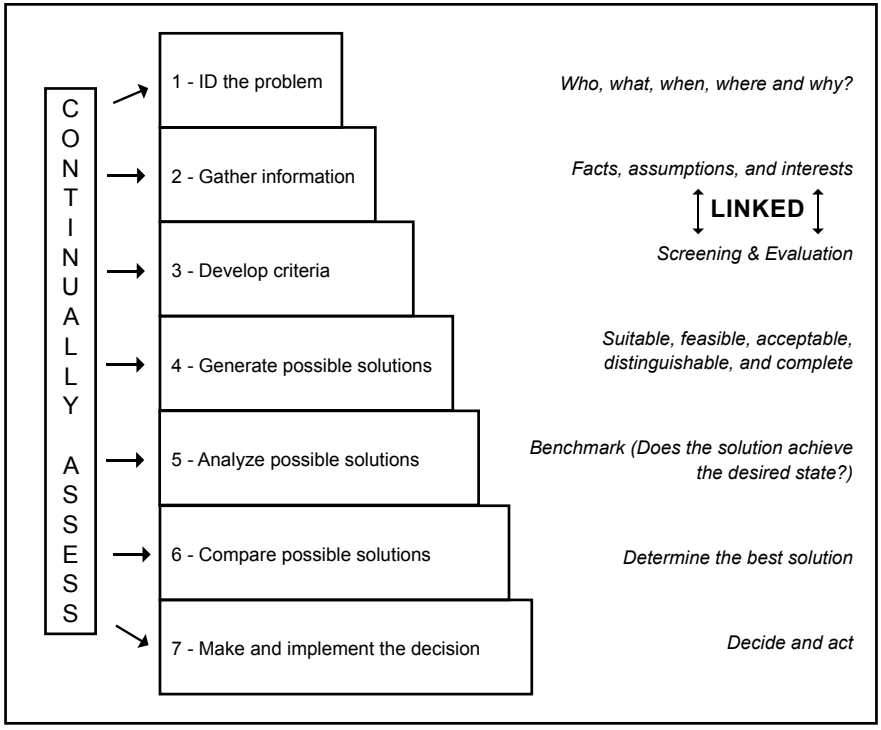


Figure 1. Seven-Step Problem Solving Model.

like a candidate for intuition, as FM 5-0 presents it. But the reality is that simple problems like this one are more suited to structured analysis in these seven steps. Complex problems are not. They call for strategic intuition instead.

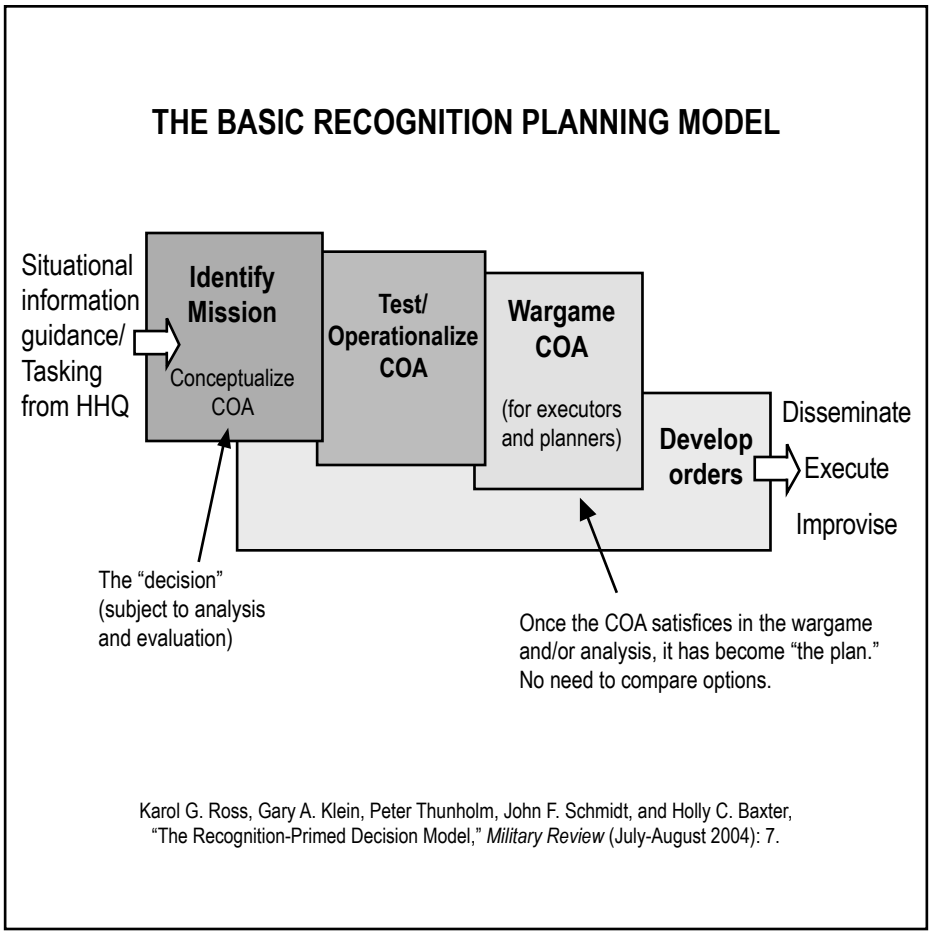
A complex problem would be that we need a multipurpose vehicle wash rack facility, but it looks like we won't be able to build one at all. Step 3 in the diagram is meaningless now: we cannot even begin to establish criteria for something we have no idea about in the first place. Our true sequence in this case is step 2—gather information—at the same time that we do step 4—generate possible solutions. But even in step 4, we are not really generating multiple solutions: we would be thankful to come up with even a single solution. And the answer will probably solve a different problem: washing vehicles. That is, we look for some way to do without a multipurpose vehicle wash rack and still keep our vehicles clean.

What really happens is we do a combination of steps 1, 3, and 4, all at once. As we study the situation, a possible COA pops into our mind suddenly or slowly takes shapes over time—either way, it is intelligent memory at work. Our brain breaks down the problem into myriad pieces and searches for parallels for each piece, until pieces comes together, and we are at last able to see what the puzzle looks like. Or the pieces do not come together. It is possible that we do our best and still end up with no way to keep our vehicles clean.

In practice, problems amenable to analysis versus intuition are the opposite of what FM 5-0 tells us. The seven-step analysis model works not for complex problems, but for simple ones, where you know the criteria and you can generate solutions easily—like wash rack costs and locations. Intuition—or at least, strategic intuition as we present it here—works best not for simple problems but for complex ones, where you do not know the criteria beforehand, and it is hard to generate any possible solution at all.

Gary Klein and his colleagues offer an alternative model of decisionmaking that reflects how experts use their intuition (see Figure 2).[38] This four-step model is very different from the seven-step problem solving model of FM 5-0. It shows the decision forming in the first step, while FM 5-0 puts the decision in step 7 and combines it with implementation. Klein's first step combines identifying the mission and conceptualizing the COA, both at the same time. The problem and solution arise together. This fits Kuhn's description of the scientific method in action. Klein and Kuhn are very similar in this regard: they study what professionals actually do, rather than what they say they do or what their formal methods tell them to do.

We also note that Klein's model leaves out two key elements from the seven-step model: criteria and multiple solutions. Again, Klein's way is more scientific, following Kuhn. Scientists do not establish criteria, generate multiple solutions, and then pick one that best fits the criteria. Instead, they study the results of previous experiments—their own and others—and come up with a single hypothesis to explain something they think the previous work failed to explain. Then they test that hypothesis. If the experiment fails, they add those results to the previous ones they studied, think again, and come up with another hypothesis.

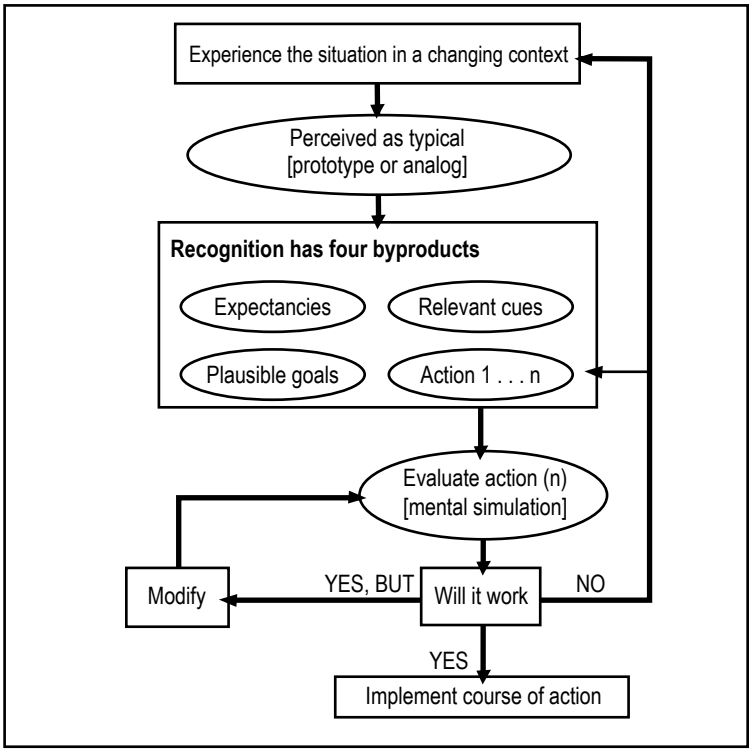


This chart is reprinted with the permission of *Military Review*, the Professional Journal of the U.S. Army, Combined Arms Center, Fort Leavenworth, Kansas. It was originally published in the July/August 2004 issue of *Military Review*.

Figure 2.

Yet Klein's four-part model leaves out a key part of his own research: "recognition." He uses the word in the title of the model, but does not include it in the steps. Elsewhere, Klein has provided a more elaborate model for expert intuition that does include a "recognition" step (see Figure 3).[39] In Klein's Recognition-Primed Decision Model (RPDM), recognition happens in the second step, where the situation is "perceived as typical." What the expert sees

as familiar leads to four by-products, including an "action." The expert thinks through the action, and then decides if it will work or not. A partial yes leads to modification and further evaluation. A full yes leads to implementation. A no leads back to the first step or to another action to think through.



The Recognition-Primed Decision Model (RPDM) in Gary Klein, *Sources of Power: How People Make Decisions*. (c) 1998 Massachusetts Institute of Technology. Pp. 25. Reproduced with permission of the publisher: MIT Press, Cambridge, MA.

Figure 3.

In this form, RPDM does, in fact, apply to simple problems that result in one action rather than complex problems that result in a set of actions. That fits FM 5-0's view that analytic methods apply to complex problems and intuition applies to simple ones. But we can

take Klein's work one step further and apply the lessons of expert intuition to complex problems, too. In RPDM, you recognize one "prototype or analog" that leads to one action. That is the simple case. In complex situations, you recognize more than one element as familiar, and it leads to a combination of more than one action. We move from expert intuition for a single action, to strategic intuition for a COA.

RPDM is complex enough: we refrain here from amending it to include more familiar elements and actions. If we seek to improve FM 5-0's seven-step problem solving model, we need something just as clear and straightforward. We find guidance in that regard from the business world, where General Electric (GE) developed in the 1990s a problem solving method that follows the steps of strategic intuition. We call it here the Insight Matrix—GE called it a Quality Matrix or Trotter Matrix, named after Lloyd Trotter, the GE executive who pioneered it (see Figure 4).[40]

INSIGHT MATRIX

Problem (draft)							
SOURCES (draft)	Source 1	Source 2	Source 3	Source 4	Source 5	Source 6	Source 7
SOLUTION (draft)							
Action 1							
Action 2							
Action 3							
Action 4							
Etc.							

Robert Slater. *Jack Welch and the G.E. Way: Management Insights and Leadership Secrets of the Legendary CEO*. (c) 1999. Reproduced with permission of the publisher: McGraw-Hill Companies, Inc., New York, NY.

Figure 4.

The Insight Matrix came from GE's corporate training center at Crotonville, New York, headed by Steve Kerr, GE's Chief Learning Officer. Under Jack Welch, GE comprised some 24 major divisions, with about 300,000 employees. Every year, most of GE's managers spent time at Crotonville. They were put on a team that mixed functions and divisions, and each team was given a real business problem to work on. Over 2 weeks, each team developed a solution. At the end, the solutions were presented to a panel of senior executives. If they approved the solution, it entered GE's formal planning. So the Crotonville training program became an incubator for actual business strategy.

Your Crotonville problem team used the Insight Matrix. Crotonville instructors did not teach it to you: the matrix was just part of what everyone knew how to do. So many people passed through Crotonville, they took the matrix back to their divisions and used it there, too. So you and your teammates probably already knew it before you arrived in Crotonville. You get your problem and draw your matrix.

At the top of the matrix you write your problem—in draft, because your definition of what the problem is might change. Then you ask, "What do we have to do well to solve the problem?" You make a list in the left-hand column. Again it is in draft, for the list might change. Then across the other columns, you write in the sources to search, also in draft. At GE, they had the advantage of so many diverse divisions that they usually just wrote those in as the sources. But depending on the problem, you might write in other companies too, or specific units within GE divisions. The matrix of solution elements (rows) and sources to search (columns) produces a matrix of boxes. That is where you look for the answer.

You ask, "Has anyone else solved any part of this problem already?" Your team comes from some of those sources, so they can tell you the story of their divisions. Steve Kerr made sure that Crotonville compiled and updated their records of best practices over the years. You call or e-mail to follow-up leads. It is a treasure hunt where you seek good ideas that already exist, to find a combination that works. As you proceed, you might alter the list of solution elements, sources, and even the problem statement—the goal—as many times as you need.

The whole cycle ends when the team has an insight: when you find the two or three or ten elements that together solve the problem. That is when you stop. The Insight Matrix turned all of GE into one big brain where you search all the shelves for examples from history that fit the current situation. Jack Welch made this corporate treasure hunt the centerpiece of his leadership. He called it "Plagiarism," with a healthy dose of "gut instinct"—and called his autobiography *Straight From the Gut*.[41] Welch explained: "The operative assumption is that someone, somewhere, has a better idea, and the operative compulsion is to find out who has that better idea, learn it, and put it into action—fast."[42]

The Insight Matrix offers a worthy alternative to FM 5-0's seven-step problem solving method. We can convert the matrix into clear directives to match the seven-step format (see Figure 5). These seven steps match the Insight Matrix as much as possible. Note that objectives only emerge in steps 4 and 5. In most cases, steps 6 and 7 will result in going forward with the COA. But in some cases, they give junior officers the duty to report that they do not see how to achieve their mission. That gives senior officers the choice of revising the mission or helping the junior officers to find a solution.

Although this strategic intuition model is most crucial in complex situations, it can cover simple ones, too. Let's return to our problem of siting a vehicle wash rack. This seven-step model tells us to find out how our unit and other units have succeeded before in placing their racks: perhaps near water, on sloping ground, alongside a main road, or inside the vehicle park. In FM 5-0's seven-step model, we would probably do this step in our heads as part of "generate possible solutions." The strategic intuition model makes the sources of our solution more transparent and thus easier to evaluate. If I propose something and you ask, "Where did you get that idea?"—in the strategic intuition model, I cite precedents. In the FM 5-0 model, I have to run you through my entire analysis.

If I am a very junior officer and do not have any experience with vehicle wash racks, the strategic intuition model pushes me to seek out the experience of others. The FM 5-0 model does not. If I am a senior officer with a lot of relevant experience, the strategic intuition model simply makes explicit what I do anyway, as Klein's research

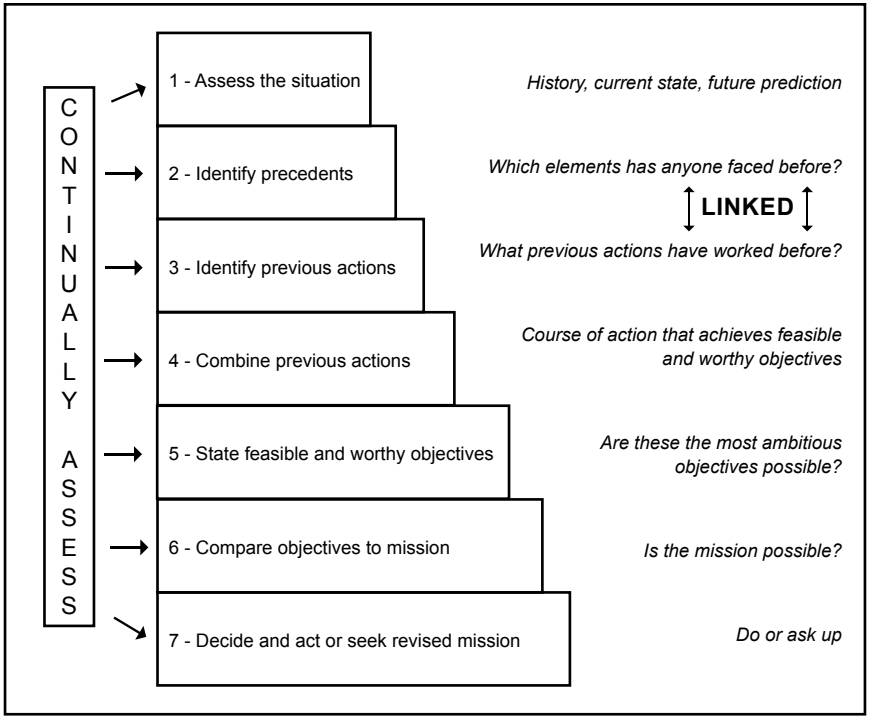


Figure 5. Seven-Step Strategic Intuition Model.

has shown us. If I am a senior officer with no relevant experience in this situation, the strategic intuition model reminds me to do what the junior officer must do: look beyond my own experience.

For a complex problem with no apparent solution, this strategic intuition model offers a method to search for one. Let's return to our complex situation where we need a multipurpose vehicle wash rack facility but we cannot build one: has anyone else ever faced this situation, and if so, what did they do? Or maybe we find a partial solution, where other units have worked out tit-for-tat equipment lending that we might try to apply to wash racks. For both simple and complex situations, the Army's huge investments in lessons learned and rapid communication can make the search for previous elements far easier than it ever was for GE. And it fits the Army's culture—where I am not shy about asking, and you are glad to answer as best you can. For GE's culture, it took Welch a decade to get to that point. The Army is already there.

The Military Decisionmaking Process.

The third chapter of FM 5-0, "The Military Decisionmaking Process," begins with another quote from Patton: "A good plan violently executed NOW is better than a perfect plan next week." Let's pause to understand this quote. Patton was impatient with elaborate planning before his *coup d'oeil*, but was a master of planning after it.[43] He seems a prime example of Klein's experts who think through a good-enough solution and act, rather than taking more time to generate several solutions and analyze each one to find the optimal COA. But FM 5-0 seems to quote Patton here for a different reason: to introduce "ways to shorten the process when planning in time-constrained environment."[44] Let's study the longer and shorter versions of the MDMP to see how to integrate strategic intuition in both.

Right away we learn that the MDMP "is an established and proven analytical planning process."[45] But is it? We know that it is established, but have there been scientific experiments to prove it works, especially versus other methods? FM 5-0 cites no proof. And Kuhn tells us that even scientists do not really "prove" anything: they present evidence to support a hypothesis. The scientific community—not the experimenter—decides whether the evidence is strong enough to declare the hypothesis "true for now"—that is, until some future evidence modifies or overturns it. Only pure mathematics has "proofs"—which are abstract logic models rather than descriptions of anything real.[46]

We do not fault MDMP for lacking real proof. So far no one has figured out how to test one decisionmaking method versus another in real-life situations—simply because, by definition, every real situation is different. You cannot perform a controlled experiment in real life. We simply note here that MDMP is an established method, not a proven one in any scientific sense. In a practical sense, MDMP has stood the test of time. Enough Army leaders find MDMP sufficiently useful to keep it a core method. But the Army should be open to—and actively seek out—other methods that might work better. Science marches on, and so should the Army's methods, if indeed something better arises. This monograph offers strategic intuition as one such alternative for the Army to consider.

We read on to find that MDMP "is a planning model that establishes procedures for analyzing a mission, developing, analyzing, and comparing courses of action against criteria of success and each other, selecting the optimum COA, and producing a plan or order."[47] The basic MDMP has seven steps that differ somewhat from the Army planning model (see Figure 6).

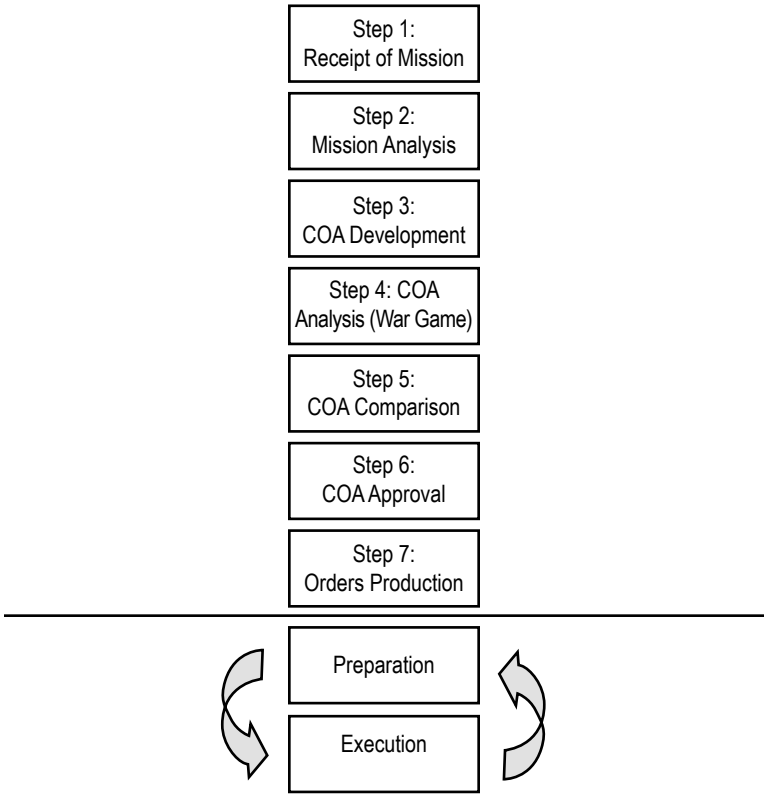


Figure 6. **The Military Decisionmaking Process**.

The full MDMP diagram in FM 5-0 shows inputs and outputs at each step, for a total of 21:[48]

Mission from higher HQ	IPB products	Decision support templates
Commander's guidance	ISR plan	COA statements and sketches
Higher HQ's order/plan	Enemy COAs	Mission to subordinate units
Commander's intent	CCIR	Criteria for comparison
Preliminary movement	WARNO	High pay-off target list
OPLAN/OPORD	Staff estimates	Task organization
War-Game results	Decision matrix	Higher HQ's IPB

Most of these items appear more than once, as drafts that different steps refine. These inputs and outputs are part of the glue that holds the Army together as it coordinates action of myriad kinds. All are documents, with one exception: preliminary movement. That appears as an output of step 2, Mission Analysis. The instructions that accompany the diagram say it might also be an output of step 1. In either case, the movement seems to have two possible sources: a direct command from HQ, or the commander's strategic intuition.

Also in step 1, the commander does a timeline to determine whether to use the full MDMP or a shorter one. Let's jump ahead to the end of Chapter 3 for a look at what that shorter MDMP looks like. We find that the greatest time saver at every step is "to increase the commander's involvement,"[49] and so breeze through some of the sub-steps and leave others out entirely. That fits strategic intuition, as the commander typically has the most knowledge and direct experience. But there is only one full step you can skip completely—step 5, COA Comparison—and only rarely: "The fastest way to develop a plan is for the commander to direct development of one COA with branches against the most likely enemy COA. The technique should be used only when time is severely limited."[50] Leaving out step 5 makes steps 3 and 4 easier too: you develop and war-game only one COA at a time.

If you leave out step 5, the MDMP fits Klein's model of expert intuition and our newer model of strategic intuition. But strategic intuition applies to all situations, not just urgent ones. And it can take as much time as the full MDMP: if you do not see an answer quickly, you keep going until you do. And even with one COA, your wargame might result in rejecting it or at least putting it on hold, so you go back and develop another. That takes time too.

We can revise the MDMP to take these changes into account (see Figure 7). We would then modify the inputs and outputs as needed to make explicit the search for precedents and their combination as the COA develops in the commander's mind or the minds of the planning team. Two items disappear entirely: criteria for comparison, and the decision matrix.

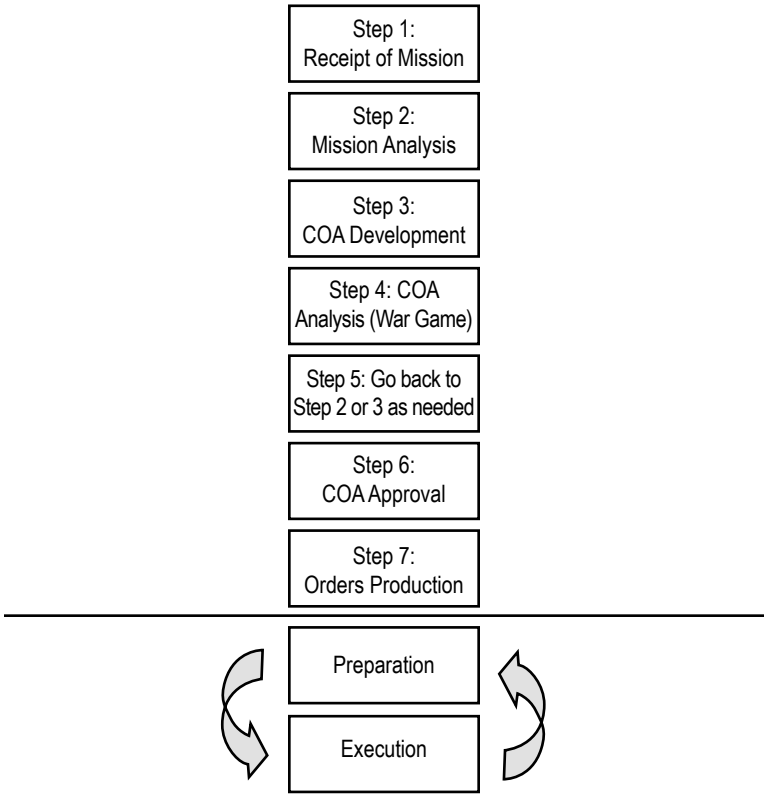


Figure 7. MDMP with Strategic Intuition.

Even when you end up lukewarm about your first COA and go back and develop another, you judge between them for some unexpected reason that pre-set criteria or a decision matrix cannot capture. If you need to explain to others why you picked one COA over the other, you simply brief or write down the reasons. Even if you use a decision matrix to decide among COAs, you are really

using your strategic intuition. A decision matrix for a real-world situation is never a purely analytic task. Let's look at a sample from FM 5-0 (see Figure 8) to understand why.

The notes to the decision matrix call the numbers in it "objective," but they are nothing of the sort. Every single number comes from an educated guess by the commander and staff. And at the end of the exercise, the decisionmaker still must decide whether to "alter or delete" the COA with the best numbers. But how? By strategic intuition.

The criteria in the decision matrix are fine factors to think about, but the decision matrix itself is not the best way to organize your thoughts about them. The Insight Matrix gives planners a better tool, because it identifies the sources of their guesses. In contrast, the decision matrix gives a false sense of hard data, and so does not encourage us to think through where our guesses come from. Instead, it treats our guesses as facts. We spend a lot of energy juggling made-up numbers instead of juggling elements for action to come up with a series of them, as in the Insight Matrix. And the different COAs on your decision matrix might all have worthy elements: instead of just choosing one option or the other, the Insight Matrix helps you think through ways to combine parts of them in a single COA.

As a result, the Insight Matrix is more scientific than the decision matrix. A typical scientific research paper reviews past achievement in a field, builds on it with a further hypothesis, and tests that hypothesis in action. Strategic intuition does the same. FM 5-0's only claim to science is COA comparison through the decision matrix: but that is not how science really works. Scientists do not compare hypotheses to choose the best one: they review past experiments and their competing theories to choose a single hypothesis to test. Most scientific experiments fail, of course: their hypotheses turn out wrong. Likewise, strategic intuition does not guarantee a correct COA. But neither does a decision matrix, which merely summarizes the best guesses by the planners about a list of criteria they guess to be relevant. The only hard science in the decision matrix is the simple arithmetic of multiplying the score by the weight. The scores and weights themselves are not scientific at all.

Criteria (Note 1)	Weight (Note 2)	COA 1 (Note 3)	COA 2 (Note 3)	COA 3 (Note 3)
Maneuver	3	2 (6)	3 (9)	1 (3)
Simplicity	3	3 (9)	1 (3)	2 (6)
Fires	4	2 (8)	1 (4)	3 (12)
Intelligence	1	3 (3)	2 (2)	1 (1)
ADA	1	1 (1)	3 (3)	2 (2)
Mobility/Survivability	1	3 (3)	2 (2)	1 (1)
CSS	1 2	(2) 1	(1) 3	(3)
C2	1 1	(1) 2	(2) 3	(3)
Residual Risk	2	1 (2)	2 (4)	3 (6)
IO	1 2	(2) 1	(1) 3	(3)
Total/Weighted TOTAL		**20 (37)**	**18 (31)**	**22 (40)**

Notes:
1. Criteria are those assigned in step 5 of COA analysis.
2. The chief of staff/executive officer may emphasize one or more criteria by assigning weights to them based on their relative importance.
3. COAs are those selected for wargaming.

Procedure: The staff assigns numerical values for each criterion after wargaming the COA. Values reflect the relative advantages or disadvantages of each criterion for each COA action. The lowest number is best. The initially assigned score in each column is multiplied by the weight, and the product put in parenthesis in the column. When using weighted value, the lower value assigned indicates the best option. The numbers are totaled to provide a subjective evaluation of the best COA without weighting one criterion over another. The scores are then totaled to provide a "best" (lowest number value) COA based on weights the commander assigns. Although the lowest value denotes the best solution, the best solution may be more subjective than the objective numbers indicate. The matrix must be examined for sensitivity. For example, COA 2 is the "best" COA, however, it may not be supportable from a ADA standpoint. The decisionmaker must either determine if he can acquire additional support of if he must alter or delete the COA.

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Figure 8. Sample Decision Matrix—Numerical Analysis.

We do not have space here to assess all the other inputs and outputs of the MDMP from the view of strategic intuition. Let's single out just two more for a closer look: staff estimates and commander's intent. The estimates are the principal input that gives a commander information on the situation. Updates to the estimates record the outcome of each step of the MDMP. Commander's intent is one of the principal outputs of the MDMP: it gives others the essence for what COA to take. In strategic intuition, *coup d'oeil* feeds both staff estimates and commander's intent. How might we modify the instructions for both?

Let's look at the standard format for estimates, and a revision that takes account of strategic intuition (see Figures 9a and 9b).[51] Nothing changes in the Mission. For Situation and Considerations, we add two new questions: what elements of this situation have others faced before, and what has worked best each time? These questions might fit under Assumptions. For COAs, Analysis, and Comparison, the estimate needs major amendment. We might replace these sections with a single COA, a Rationale, and Implications. These are three outputs of *coup d'oeil*: a preferred path, an understanding of why it's best, and implications for action that give you some preliminary detail on execution.

Note that the revised estimate format has a strong link between Situation and Considerations on the one hand, and COA on the other: 2d (1) and 2d (2) match 3b. The FM 5-0 format has no such link. The revised format shows clearly where the COA came from. Where does it come from in FM 5-0? Under COA Development, we find a chart that puts "generate options" in a series of steps (see Figure 10).[52] The instructions to the chart tell us the options themselves arise in this way:

> Brainstorming is the preferred technique for generating options. It requires time, imagination, and creativity, but it produces the widest range of options.The staff remains unbiased and open-minded in evaluating proposed options. Staff members quickly identify COAs that are not feasible due to factors in their functional areas. They also quickly decide if a COA can be modified to accomplish the requirement or should be eliminated immediately. Staff members who identify information that might affect other functional areas share it immediately. This eliminates wasted time and effort.[53]

FM 5-0, Figure E-1.
Generic Staff Estimate Format

1. **MISSION.** Show the restated mission resulting from mission analysis.
2. **SITUATION AND CONSIDERATIONS.**
   a. **Characteristics of the Area of Operations**
      (1) **Weather.** State how the military aspects of weather affect the staff section's functional area.
      (2) **Terrain.** State how aspects of the terrain affect the staff section's functional area.
      (3) **Civil Considerations.** State how political, economical, sociological, and psychological factors and infrastructure affect the staff section's functional area.
      (4) **Other Pertinent Facts.** State any other pertinent facts and how they affect the staff section's functional area.
   b. **Enemy Forces.** Discuss enemy dispositions, composition, strength, capabilities, and COAs as they affect the staff section's functional area.
   c. **Friendly Forces.**
      (1) List the current status of resources within the staff section's functional area.
      (2) List the current status of other resources that affect the staff section's functional area.
      (3) Compare requirements with capabilities and recommended solutions for discrepancies.
   d. **Assumptions.** List any assumptions that affect the staff section's functional area.
3. **COAs**
   a. List the friendly COAs that were wargamed.
   b. List evaluation criteria identified during COA analysis. All staff sections use the same evaluation criteria.
4. **ANALYSIS.** Analyze each COA using the evaluation criteria identified during COA analysis.
5. **COMPARISON.** Compare COAs. Rank order COAs for each key consideration. A decision matrix usually supports comparison.
6. **RECOMMENDATIONS AND CONCLUSIONS**
   a. Recommend the most supportable COA from the specific staff perspective.
   b. List issues, deficiencies, and risks with recommendations to reduce their impacts.

Figure 9a.

Generic Staff Estimate Format
with Strategic Intuition

1. **MISSION.** Show the restated mission resulting from mission analysis.
2. **SITUATION AND CONSIDERATIONS.**
   a. **Characteristics of the Area of Operations**
      (1) **Weather.** State how the military aspects of weather affect the staff.
      (2) **Terrain.** State how aspects of the terrain affect the staff section's functional area.
      (3) **Civil Considerations.** State how political, economical, sociological, and psychological factors and infrastructure affect the staff section's functional area.
      (4) **Other Pertinent Facts.** State any other pertinent facts and how they affect the staff section's functional area.
   b. **Enemy Forces.** Discuss enemy dispositions, composition, strength, capabilities, and COAs as they affect the staff section's functional area.
   c. **Friendly Forces.**
      (1) List the current status of resources within the staff section's functional area.
      (2) List the current status of other resources that affect the staff section's functional area.
      (3) Compare requirements with capabilities and recommended solutions for discrepancies.
   d. **Assumptions.**
      (1) List what elements of this situation others have faced before.
      (2) List what has worked best for each element.
      (3) List any other assumptions that affect the staff section's functional area.
3. **COA**
   a. List the friendly COA you recommend and its wargame results.
   b. Identify the elements from previous situations in your COA.
4. **RATIONALE.** Explain why you believe this COA is the best way to fulfill the mission.
5. **IMPLICATIONS.** List any details of execution that arose during your COA development or wargame.
6. **RECOMMENDATIONS AND CONCLUSIONS**
   a. Summarize your COA, rationale, and implications.
   b. List issues, deficiencies, and risks with recommendations to reduce their impacts.

Figure 9b.

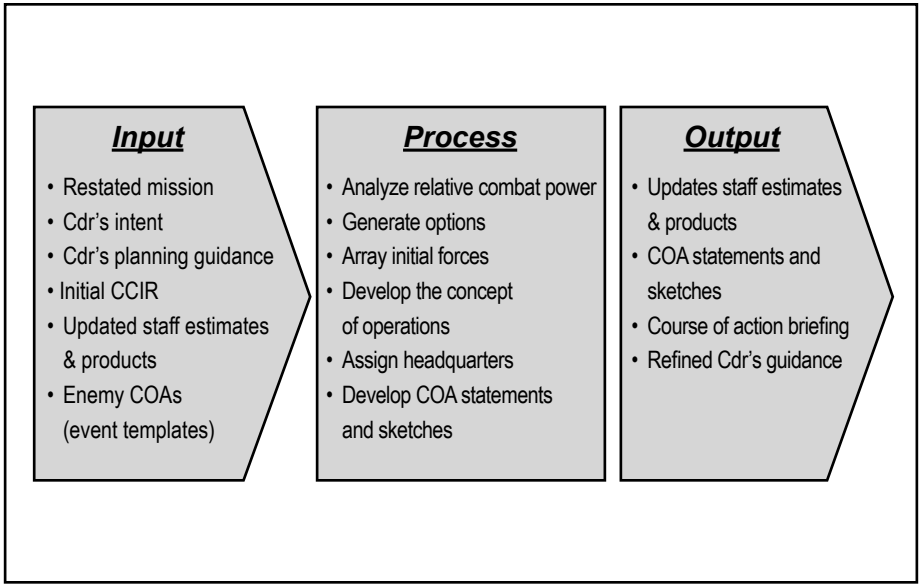

Figure 10. COA Development.

This is an old view of brainstorming that leaves the generation of options to the mystery of imagination and creativity. The only detail we get is that staff members quickly reject, modify, or add to the option—by intuition? There is nothing about how the option itself appears. Strategic intuition, in contrast, gives a method to how the option arises that matches how the brain works: new combinations of past elements. And the Insight Matrix gives us a tool for making those combinations. It produces one option at a time, though, while FM 5-0 asks for several.

In any event, we can alter the diagram on COA Development to account for strategic intuition (see Figure 11). There are only three differences. First, "Use Insight Matrix" replaces "Generate options." Second, we develop one COA statement at a time. Third, commander's intent becomes an output of COA development, not an input: the commander's intent expresses a *coup d'oeil*, which includes the essence of the COA. This view of commander's intent has some basis in other parts of FM 5-0. Here is how FM 5-0 defines it:

> **Commander's Intent.** A clear, concise statement of what the force must do and the conditions the force must meet to succeed with

respect to the enemy, terrain, and the desired end state. . . The components of the commander's intent include:

- End state
- Key tasks
- Expanded purpose (if desired).[54]

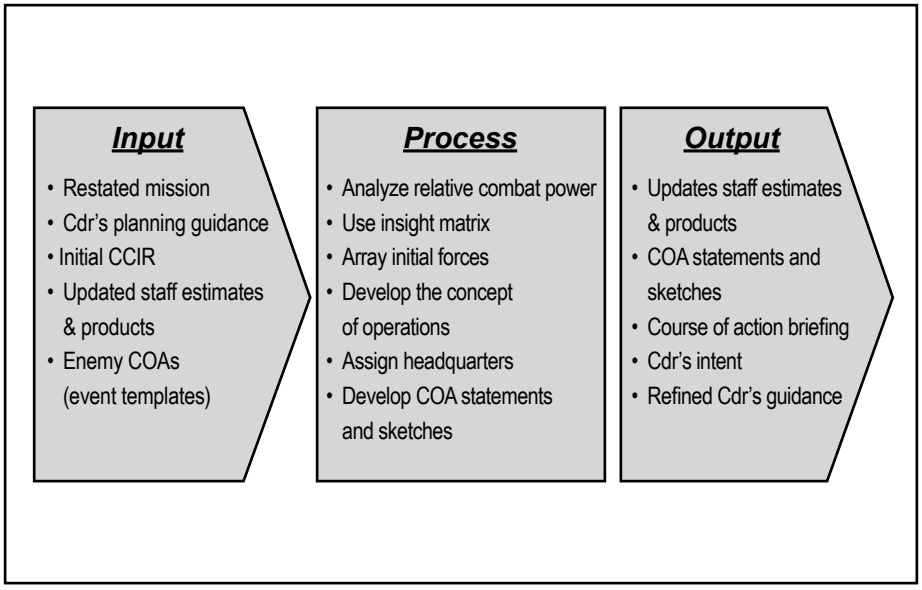

Figure 11. COA Development with Strategic Intuition.

This definition of commander's intent seems to include the COA, not precede it. How else do we interpret "what the force must do" and "key tasks?" In this way, the commander's intent is very much a product of *coup d'oeil*, where the commander sees what path to take (COA/key tasks), where that leads (end state), and why (purpose). You cannot establish the end state first, other than repeating your mission from HQ. For example, if HQ tells you to secure Section G, your commander's intent will give more detail than that, as your *coup d'oeil* tells you that certain of your units end up in certain places in Section G. For that you have to have at least an idea of a COA: which units take which actions. Your COA and end state arise and develop together, not in sequence.

So commander's intent should be an output, not an input, for developing a COA. Brainstorming—or the Insight Matrix—gives us

both. But FM 5-0 goes on to limit severely what kind of options you generate for the COA. On the one hand, we brainstorm, but on the other, we read this:

> To develop options, the staff starts with the decisive operation identified in the commander's planning guidance. . . The staff determines the decisive operation's purpose (if not stated by the commander) and considers ways to mass the effects of overwhelming combat power to achieve it.[55]

So we don't brainstorm to generate options to meet the mission: we generate options to mass overwhelming combat power. This is a very narrow range of options. What about options other than mass? We have pin and flank, disperse and concentrate, encircle, breakthrough and pursuit, interior lines, deception, selective shock, and many others. Mass is not the only answer in combat, as many great generals of history have shown us. They do more with less, as our Army will have to do in the future, because of our volunteer professional corps and multiple wars. And military problems include noncombat situations where mass is not the answer either, from our wash rack facility to disaster relief and nation-building.

We understand FM 5-0's attempt to provide guidance for COA development beyond brainstorming, creativity and imagination. But instead of narrowing the options—as mass or any other preference—strategic intuition offers the widest range of realistic options possible. To develop a COA, we ask, "What does previous human experience tell us about situations with similar elements?" This is what goes through a seasoned commander's head anyway: strategic intuition just makes it an explicit part of Army planning.

MDMP gives one final source for COA and commander's intent: visualization. Here is how FM 5-describes it:

> Commander's visualization is the mental process of achieving a clear understanding of the force's current state with relation to the enemy and the environment (situational understanding), and developing a desired end state that represents mission accomplishment and the key tasks that move the force from its current state to the end state (commander's intent). Commander's visualization begins in planning and continues throughout the operations process until the force accomplishes the mission.[56]

Here FM 5-0 tells us that three elements come together in the commander's mind: the situation, the COA, and the end state. We are very close to *coup d'oeil*. The key difference is sequence: in FM 5-0, the three elements appear in order, while in a *coup d'oeil* they arise together. The situation has many sides, angles, and complications: what matters most comes to the fore only after you see what to do. For example, rain may cause you to slow down (to let the storm pass) or speed up (before it's too muddy), or the rain may factor not at all in your decision. You only know whether rain matters as part of the situation when you see what COA to take. Same with the end state: there are many end states that can fulfill the mission. You only know which one to choose when you see a way to get there.

Still, FM 5-0 elevates commander's visualization to the highest plane: it is where the plan really takes shape. Strategic intuition agrees. It just updates from recent research how the commander's brain really visualizes. Intelligent memory works like a movie, where you literally see what you remember.[57] The thoughts that make up a commander's visualization come from combinations of what the commander recalls. Strategic intuition makes explicit the components of visualization that appear in a commander's mind.

Troop Leading Procedures (TLP).

The fourth chapter of FM 5-0, "Troop Leading Procedures," tells us that TLP extends the MDMP to small units. The steps are a bit different, because our smaller units must wait for the higher level to complete its MDMP before issuing final orders. The result is Parallel Planning (see Figure 12).[58]

For a company or platoon commander, these steps might seem a bit different from MDMP, but the key elements are the same: to make a tentative plan, you still go through COA development and comparison. The real difference is there are extra steps, as you initiate movement and conduct reconnaissance before completing your plan. As such, our previous comments on strategic intuition in the MDMP apply to TLP, too.

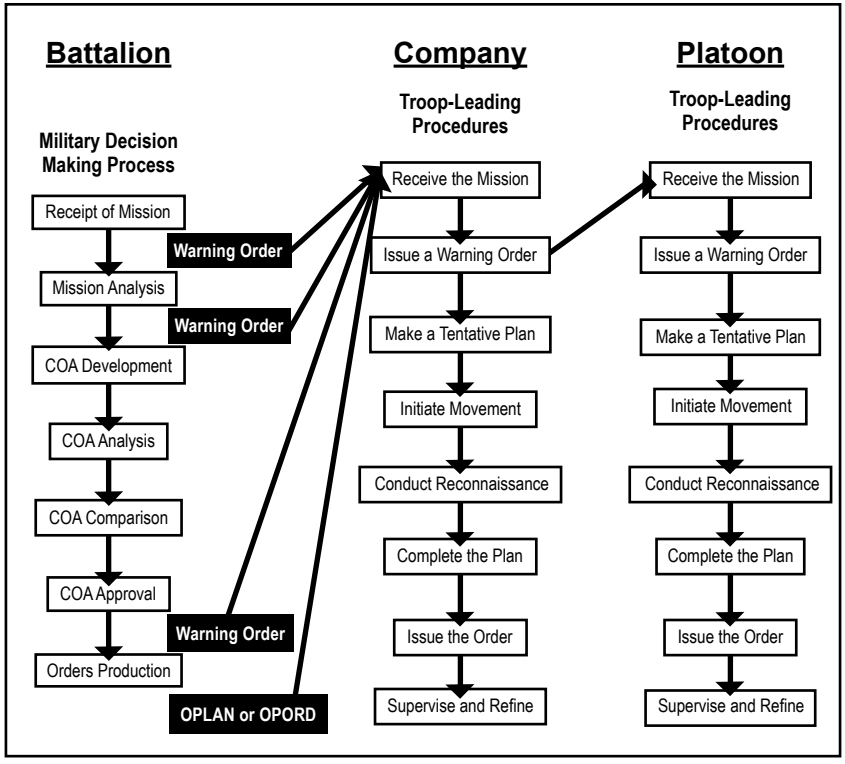

Figure 12. Parallel Planning.

We note two further elements of TLP: comfirmation brief and backbrief. In both cases, subordinate officers explain what they think to their superior officers. In the confirmation brief, they explain their understanding of the order they just received. In the backbrief, they explain the plan they came up with to execute the order. From the view of strategic intuition, these two briefs are key elements that hold Army planning together. It is the chance for commanders to pass up and down to each other what they see—and don't see—about their situation and their own COA. Commanders should view the confirmation briefs and backbriefs of their subordinates as vital input into their own evolving plans. These briefs deserve a place on the Parallel Planning diagram, with arrows in both directions (see Figure 13), in addition to the revision of the battalion procedures for strategic intuition.

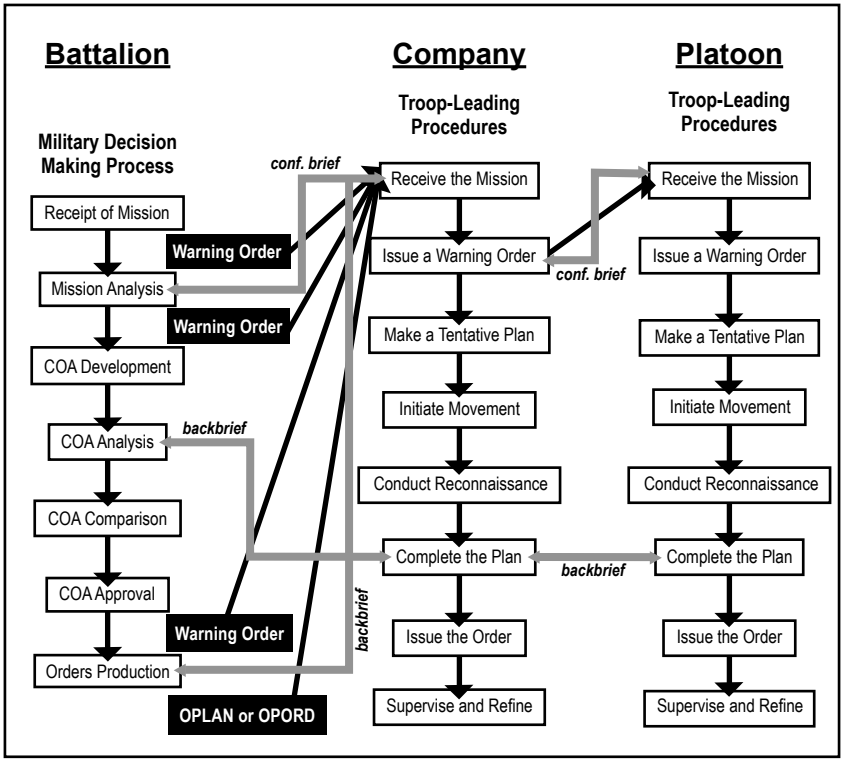

Figure 13. Parallel Planning with Strategic Intuition.

After all, a *coup d'oeil* gives you just a sketch of what to do. You have to fill in many details, and make plenty of mid-course corrections. Your COA is a puzzle you keep filling in. Briefs back and forth help you do that. This is another reason to favor methods of strategic intuition over formal analytic methods: we acknowledge *coup d'oeil* as an educated guess and no more, while analytic methods give a false impression of certainty, completeness, and rigor. It is easy to fall into the trap of thinking your decision matrix has real numbers on it, and yields an answer that is objectively true. Briefs from your subordinates give you the real-world details of your plan, in a way that formal analytic methods never can. People make plans. People turn them into action. Confirmation briefs and backbriefs are the only occasion where superiors and subordinates get a chance to

see what is in each other's brains, and to express what they see in terms that might not fit on paper or a particular Army format. It's a way to visualize to each other.

We suspect that officers, in fact, use the confirmation brief and backbrief in exactly that way. Integrating these steps into the core TLP—and the MDMP, too—would give the briefs the official attention they deserve. As with commander's intent, strategic intuition would make the brief contain what the briefing officers see, in whatever detail they see it. And that might alter the superior officers' understanding of the end state and thus the COA, for further backbrief up the chain of command. Recent experience shows that company and platoon commanders increasingly face surprising situations, and handle them in surprising ways. Higher plans need to take account of the *coups d'oeil* of officers lower down, as the entire operation emerges from the fog of war.

Case Study: 101st Aviation Brigade.

In 2003, Lieutenant Colonel William Gayler of the 101st Aviation Brigade developed a revised MDMP to speed up planning. In Iraq, the 101st was able to plan a series of missions, with contingencies, at the same time that other brigades planned only one mission. Let's take a look at what the 101st did in light of our review of strategic intuition in FM 5-0. An Appendix contains the 101st's full version.[59] Let's compare their summary chart (see Figure 14) with the amendments we suggest in this monograph.

The first thing we notice is the format: the 101st did not use any of the basic charts we find in FM 5-0. Instead they worked out what procedures they needed first, and then mapped out what they did. In this way, their method follows how Klein conducts research, in writing down faithfully what experts do without a prior model to go by. We see that the 101st organizes their planning around three possible Warning Orders (WARNORD), three briefs, and a rehearsal for the COA itself through the Operations Order. This basic format of orders, briefs, and rehearsal emphasizes action above all else, again as Klein and strategic intuition would lead us to expect.

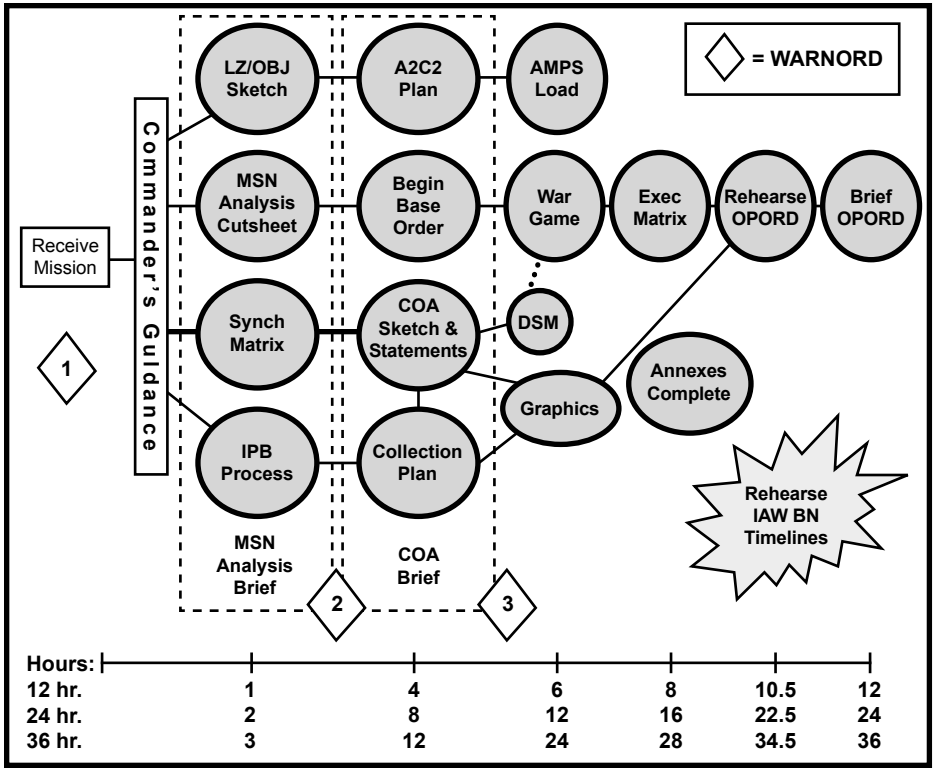

Figure 14. 101st AVN BDE Abbreviated MDMP.

We note next there is only one COA. The 101st usually skips the steps of developing multiple COAs and criteria to assess them, and then comparing COAs. As we know, FM 5-0 allows this shortcut when there is not enough time for the full MDMP. The 101st's instructions offer a somewhat different rationale, which gives us further clues to their method:

> The ultimate goal of the process, of course, is to produce an OPORD that is thorough and executable while giving subordinate units adequate time to analyze and produce their own orders. Often the time (critical resource) allocated to units to perform this full process is limited. Therefore, units must have established techniques for the production of orders in a time-constrained environment. Corps and Division plans sections are robust enough to take advantage of the full process, in most cases. At brigade and below, however, units must understand the full process, but abbreviate, where able, to meet the goal of orders production. Units can then spend time on the rehearsal of the operation that is critical to mission success.[60]

On the one hand, the 101st tells us they do their version because time is shorter at the brigade level and lower than for corps and division. They note further that brigade and lower simply do not have enough staff to do the full MDMP in a timely manner. Yet the 101st's shorter method is not simply a shorter MDMP. They have revised the entire MDMP. With the time they do have, they trade analysis and COA comparison for briefs and rehearsal. Their instructions above tell us clearly that "rehearsal of the operation . . . is critical to mission success." In a way, the 101st's rehearsal is a shortened Insight Matrix. It works through a full series of actions so that everyone has a picture of the whole operation unfolding. The Insight Matrix also works out a full list of actions, but the 101st skips the step of identifying the source of each one. When time is short or staff are few, this abbreviation makes great sense.

As a result, the 101st gives us not a reduced MDMP when time is short for brigade and lower, but an alternative MDMP for all levels, at all times. If we have enough time and staff, we can add the Insight Matrix early on, as a worksheet that carries through to rehearsal. The 101st does not make this grand claim for its method—as a possible replacement for the MDMP. They are simply reporting what they do. Yet the rationale they offer for themselves can apply to higher levels as well as lower.

Note their timeline: it tells you how long each step takes when you have 12, 24, or 36 hours for the entire method. We can easily adapt the same timeline for 48 hours, or a week, a month, or more. If all levels adopted the same method, they would all have time for rehearsals and briefings that culminate in final orders. This kind of back-and-forth produces much greater alignment for a single COA, and so aids execution. Even a full staff at corps and division is better off fleshing out a single COA in rehearsal, and updating it from briefs by lower levels, than comparing COAs that they only end up discarding.

The 101st has developed a method that seems to fit well Patton's advice for a good plan now versus a perfect plan next week. Their method applied at all levels offers a way for all commanders to use their strategic intuition to full advantage, with maximum harmony among their different COAs. The 101st's MDMP totals eight pages of formats and instructions, and at each step emphasizes what actions

the commander "sees." As such, it stands out as a strong alternative to our amendments to FM 5-0 that preserve the structure of the MDMP and integrate strategic intuition at every step.

Perhaps that is right: not just for brigade and lower, but all the way up the chain of command. The Insight Matrix offers a way for commanders or staff teams to give supporting evidence for their COA, without comparing it to alternatives. The 101st gives support for its COA in a very different way: with detail on how to carry it out, worked through in a rehearsal. If your superior asks, "Why this COA?" FM 5-0 replies, "Because it is the best one we analyzed." Our amended version with strategic intuition replies, "Because its elements worked before." The 101st replies, "Because we see how to do it." The 101st might very well have the best answer. It puts the most trust in the strategic intuition of the Army's own commanders.

Conclusion.

This study reviews the Army's planning procedures to see where strategic intuition might and should come in. It offers these particular suggestions for revision:

- the Insight Matrix (Figure 4) instead of the decision matrix in the MDMP;
- a revised Seven Step Problem Solving Model (Figure 5);
- a revised MDMP (Figure 7);
- a revised Generic Staff Estimate Format for use in the MDMP (Figure 9b);
- a revised COA Development as a step of the MDMP (Figure 11); and,
- a revised Parallel Planning in TLP (Figure 12).

A more extreme alternative comes from the 101st Aviation Brigade in Iraq (Figure 14), which reduces the MDMP to eight pages that all levels—not just brigade and lower—would do well to consider. Perhaps other units have experimented with amended planning methods in action, and it would be worth further inquiry to gather and assess them all.

If the Army would like to try out any of the revisions cited in this monograph, the U.S. Army War College might be a place to start,

as a parallel to GE's Crotonville Institute. Officers come through the College with real assignments behind and before them, and the Army might have other assignments for them during their time at the College. That makes for plenty of real problems to work on, in a learning environment where College faculty can run and assess the trials.

Beyond these particular revisions to FM 5-0, strategic intuition offers an overall shift from "planning and orders production" to "strategizing and communicating." In current Army methods, there is no step, no process, no procedure to "strategize"—which is how human beings really solve problems and make decisions of all kinds. When you strategize, you let your mind wander among possible end states, actions, timelines, and particular details of the situation you face. Different pieces emerge, in different combinations, as your brain pieces together the whole picture. The revised procedures suggested here slow down the normal process of the mind to a more deliberate pace, with more explicit steps, so everyone is more aware of what they are doing and so that teams can know what is in the minds of their members.

Orders production becomes a matter of communicating the picture you see, in whatever detail you see it. Whoever receives the orders fills in the blanks with what they see, and communicates it back to help their commanders fill in more of the picture and keep up with changes as the operation unfolds. In this way, strategic intuition is not just faster than current methods: it is less bureaucratic, too. That is, the steps of strategic intuition follow naturally how good commanders strategize and communicate. Formal procedures become aids to thinking rather than hoops to jump through for their own sake. And strategic intuition is closer to the scientific method than current procedures, so above all it gives the best answer.

We end with a warning: strategic intuition poorly done results in the worst kind of lazy thinking. The easiest kind of planning is: "This resembles that, so let's do the same thing again." That is wrong. Done well, strategic intuition results in a unique solution every time. No situation is ever the same as a previous one, so no solution is ever the same either. Strategic intuition uses elements from the past, but always in a new combination. The future comes out of the past: it does not mirror it. The discipline of strategic intuition gives us this

kind of planning instead: "This part resembles X, that part resembles Y, that other part resembles D, and we know that other thing is not Z, but what the heck is it?"

If you cannot find a precedent for some element of the situation, then for that you have to guess. That is true of both strategic intuition and analytic methods. There is no other way for the mind to handle a truly novel element. But true novelty is extremely rare in human history. Innovation happens through creative combination. The attacks of 9/11, for example, came as a surprise only to nonexperts. The more you knew about the terrorists beforehand, the more you expected something like 9/11. Those terrorists used past elements in a new combination, just as the enemy does in Afghanistan, Iraq, and wherever else we fight next. To defeat them, we need our officers to be up-to-the-minute experts in war, "conversant with all sorts of military possibilities," as Patton told us. Boots on the ground, yes, but also brains on the ground. And brains solve problems by *coup d'oeil*.

ENDNOTES

1. Roger Sperry won the Nobel Prize in 1981 for his work on the two-sided brain, while Eric Kandel and others won it in 2000 for work that replaced the two-sided model with the current view. For a review of the research that led to this advance, see L. Squire and E. Kandel, *Memory: From Mind to Molecules*, New York: Freeman & Co., 1999. For more general treatments of the research, see B. Gordon and L. Berger, *Intelligent Memory*, London, UK: Viking, 2003; and G. Edelman, *Wider Than the Sky*, New Haven, CT: Yale University Press, 2004. For an example of recent research, see M. Jung-Beeman, *et al*., "Neural Activity When People Solve Verbal Problems with Insight," *PLOS Biology*, April 2004. "Intelligent memory" is but one of several names for the new view of the brain. Others include "recognition sciences" and "learning and memory."

2. Gordon and Berger, *Intelligent Memory*, pp. 8-9.

3. R. Stickgold and M. Walker, "To Sleep, Perchance to Gain Creative Insight?" *Trends in Cognitive Sciences*, Vol. 8, No. 5, May 2004, p. 191. Stickgold and Walker gave two groups of subjects the same set of mathematical problems. One group got a sleep break halfway between. During sleep, the brains of the sleepers saw patterns that helped them afterward to solve the problems much faster than the nonsleepers did.

4. G. Klein, *Sources of Power*, Cambridge, MA: MIT Press, 1998; and *Intuition at Work*, New South Wales, Australia: Currency, 2002. Klein follows in the footsteps of Herbert Simon, who won the 1978 Nobel Prize in Economics for his work on

expert decisionmaking. See especially H. Simon, *Models of Thought*, Vol. II, New Haven, CT: Yale University Press, 1989.

5. Klein, *Sources of Power*, p. 125.

6. Carl Clausewitz, *On War*, London,UK: Penguin, 1968 (1832), p. 141.

7. *Ibid*., p. 142. For a concise scholarly essay on *coup d'oeil*, see K. Herbig, "Chance and Uncertainty in *On War*," in M. Handel, *Clausewitz and Modern Strategy*, London, UK: Frank Cass Publishers, 1986.

8. Clausewitz, *On War*, p. 142.

9. *Ibid*., *On War*, p. 143.

10. *Ibid*., *On War*, p. 195.

11. J. Herold, *The Mind of Napoleon*, New York: Columbia University Press, 1961 (1955), p. 224. Napoleon wrote, "The principles of warfare are those which guided the great captains whose high deeds history has transmitted to us—Alexander, Hannibal, Caesar, Gustavus Adolphus, Turenne, Eugene of Savoy, Frederick the Great . . . The history of their 83 campaigns would constitute a complete treatise on the art of war . . ."

12. Clausewitz, *On War*, p. 231.

13. A War College reviewer pointed out an intriguing anomaly about *coup d'oeil* in Colonel J. J. Graham's English translation of *On War*. In the main discussion, in Book 3, Clausewitz uses the French term. In Book 8, Graham uses *coup d'oeil* but the German original appears as *Überblick*, which literally means over-glance and figuratively means overview or mental grasp:

> This facile [Überblick/*coup d'oeil*] of the General, this simple art of forming notions, this personification of the whole action of War, is so entirely and completely the soul of the right method of conducting War, that in no other but this broad way is it possible to conceive that freedom of the mind which is indispensable if it is to dominate events, not be overpowered by them.

We might wonder whether Clausewitz used Überblick as the closest German translation of *coup d'oeil*. See Clausewitz, *On War*, p. 366; and Carl Clausewitz, *Vom Kriege*, Bonn: Dümmlers, 1980, p. 950.

14. See A. Jomini, *Summary of the Art of War, Military Service Publishing*, 1947 (1838). For a comparison of Clausewitz and Jomini in modern strategy, see W. Duggan, *The Art of What Works*, New York: McGraw-Hill, 2003.

15. M. Blumenson, *The Patton Papers*, Vol. 2, Boston: Houghton Mifflin, 1974, p. 169. For the details of Patton's campaigns, see C. D'Este, *Patton: A Genius for War*, New York: Harpercollins, 1995. For Patton's *coup d'oeil*, see "Strategy Reborn: Patton vs. the Planners," in W. Duggan, *Napoleon's Glance: The Secret of Strategy*, New York: Nation Books, 2002.

16. D'Este, *Patton*, p. 94.

17. FM 5-0, 1-1 and 1-3, citing FM 3-0.

18. *Ibid*., 1-4.

19. *Ibid*., 1-5.

20. *Ibid*., 1-6.

21. T. Kuhn, *The Structure of Scientific Revolutions*, Chicago: University of Chicago Press, 1962, p. 122.

22. FM 5-0, 1-19.

23. *Ibid*., 1-20, 1-21.

24. *Ibid*., 1-22, 1-23.

25. See D'Este, *Patton*, p. 680; A. Irzyk, "Fourth Armored Division Spearhead at Bastogne," *World War II Magazine*, Vol. 14, 1999; and Duggan, *Napoleon's Glance*, pp. 175-181.

26. Klein, *Sources of Power*, Figure 3.2, p. 27. These 4 steps are a simplified version of Klein's "recognition-primed decision model." See Figure 3 of this monograph.

27. FM 5-0, 1-24.

28. *Ibid*., 1-25.

29. *Ibid*., 1-31.

30. *Ibid*., 1-49.

31. *Ibid*., 1-59.

32. *Ibid*., 1-123.

33. *Ibid*., 1-87 to 1-89.

34. *Ibid*., 2-1.

35. *Ibid*., 2-2.

36. *Ibid*., 2-24.

37. *Ibid*., 2-28.

38. Ross, *et al*., "The Recognition-Primed Decision Model," *Military Review*, July-August 2004, p. 7.

39. Klein, *Sources of Power*, p. 27.

40. See R. Slater, *Jack Welch and the GE Way Fieldbook*, New York: McGraw-Hill, 1999, pp. 93-99; and Duggan, *The Art of What Works*, pp. 183-185.

41. J. Welch, *Jack: Straight From the Gut*, New York: Warner Business, 2001.

42. R. Slater, *Jack Welch and the GE Way*, New York: McGraw-Hill, 1998, p. 97.

43. See D'Este, *Patton*, pp. 626-630; and Duggan, *Napoleon's Glance*, pp 172-173.

44. FM 5-0, p. 3-1.

45. *Ibid*.

46. Kuhn, *The Structure of Scientific Revolutions*, pp. 150-154. Einstein said of mathematics: ". . . as far as propositions of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality." Albert Einstein, "Geometry and Experience," Lecture at the Prussian Academy of Sciences, January 27, 1921, cited in A. Einstein, *Ideas and Opinions*, New York: Crown, 1954, p. 233.

47. FM 5-0, 3-1.

48. *Ibid*., Figure 3-1.

49. *Ibid*., 3-217.

50. *Ibid*., 3-227.

51. See *ibid*., Figure E-1.

52. See *ibid*., Figure 3-8.

53. *Ibid*., 3-124.

54. *Ibid*., 3-13.

55. *Ibid*., 3-126.

56. *Ibid*., 3-9.

57. See T. Damasio, *The Feeling of What Happens*, New York: Harcourt, 1999.

58. See FM 5-0, Figure 3-8.

59. Cited in Wolgast, "Command Decisionmaking," p. 22. Lieutenant Colonel Gayler provided to the author the 101st's revised MDMP and comments on its use in a personal communication.

60. 101st Aviation Brigade, *Abbreviated MDMP*, p. 1.

APPENDIX

101st AVIATION BRIGADE ABBREVIATED MDMP

General. The Military Decision Making Process (MDMP) outlined in FM 101-5 is an excellent process to thoroughly flush out an Operations Order (OPORD) or Fragmentary Order (FRAGO) for a given operation/mission. The ultimate goal of the process, of course, is to produce an OPORD that is thorough and executable while giving subordinate units adequate time to analyze and produce their own orders. Often the time (critical resource) allocated to units to perform this full process is limited. Therefore, units must have established techniques for the production of orders in a time-constrained environment. Corps and Division plans sections are robust enough to take advantage of the full process, in most cases. At brigade and below, however, units must understand the full process, but abbreviate where able, to meet the goal of orders production. Units can then spend valuable time on the rehearsal of the operation that is critical to mission success. The abbreviated technique described below is used by the 101st Aviation Brigade to meet this requirement.

1. Baseline Products to Produce. Units should develop a baseline of products to develop as part of the orders process. Below is an example of the baseline products given from the 101st AVN BDE during an OPORD.

- Base Order (OPORD/FRAGO)
- Graphics
- Execution Matrix (or Synch Matrix)
- Concept Sketch
- Intel Annex
- Fire Support Annex
- Service Support Annex
- A2C2 Annex
- Decision Support Graphic (Matrix) Abbreviated MDMP Table

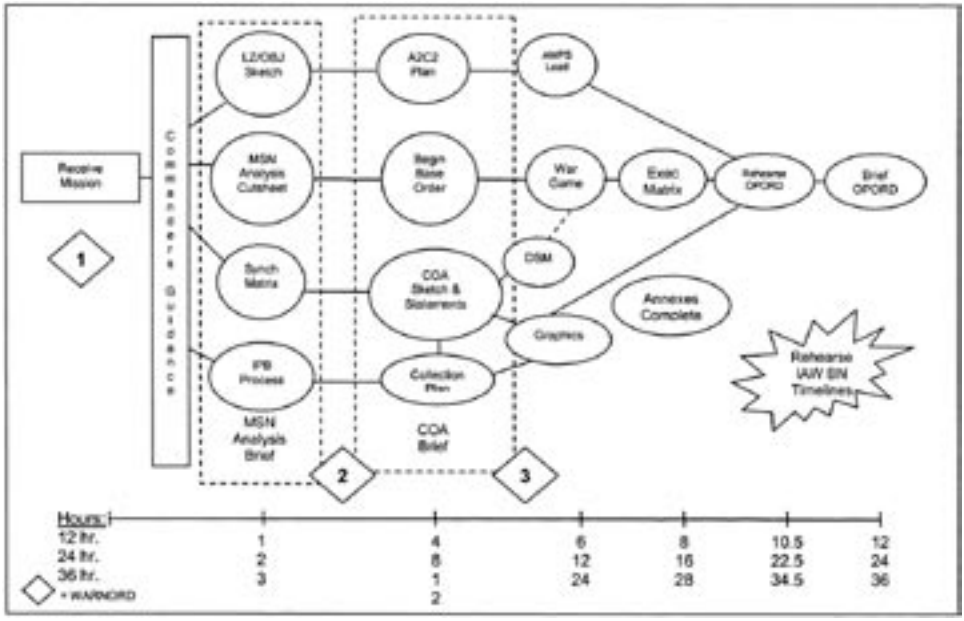

Figure A1. Abbreviated MDMP Table.

The figure above describes the sequence of events in the abbreviated MDMP. The timeline at the bottom represents the time available to produce an order and the events that must be completed during the process. The XO establishes and drives the timeline upon mission receipt.

2. A Technique for the Abbreviated Process.

A. *Receive the Mission/Mission Analysis*. During this process, each section has some specific duties and products to work. Once a mission is received (written or verbal), the XO alerts the staff (WARNORD 1). Immediately, each section begins work in their area. The most important piece of information to the abbreviated process is guidance from the commander. Guidance can be given verbally or with a Commander' Guidance Worksheet (see Figure A2).

Commander's Guidance Worksheet

DTG: _____

A. Commander's Intent:
Key Tasks: _____
_____
_____

Endstate: _____
_____

B. Guidance:
Decisive Point: _____
_____

Priority of Intel Collection: _____
_____
_____

PIR: _____
_____

Deception: _____
_____

Safety: _____
Risk (Areas where it is accepted: _____
_____

(CCIR): _____
_____

COA(s) to Consider: **(Most abbreviated when the commander directs a specific COA or some specific guidance to be addressed in each COA)**
_____

Criteria to use (defined): _____
_____
_____

Time Plan/Type Order/Type Rehearsal:

Figure A2.

- The S3 begins to develop a sense of timing actions and events by transferring tasks from higher's order to a **Synch Matrix** (see Figure A3). This is a useful tool to "see" the relationship of events-to-time during the operation. In doing this, the S3 is simultaneously conducting his/her own mission analysis. The synch matrix helps the S3 plan for which elements must begin movement in order to support a directed task, i.e., FARP movement, CL III/V resupply, reconnaissance movement, etc. Additionally, the S3 can see all assets available for an operation that expedites the development of courses of action.

SYNCH MATRIX

Time					
Enemy Action					
Decision Points					
MANEUVER					
Air Defense					
Fire Support					
Engineer					
INTEL					
CSS	MAN				
	ARM				
	FIX				
	FUEL				
	MOVE				
	SUSTAIN				
	C2				

Figure A3.

- The PLEX planners begin their mission analysis and start the products for the brief to the commander. Depending upon time available, the planners may use the Mission-Analysis Cut Sheet (see Figure A4) which has the entire briefing on one sheet of paper or put the information into a formal briefing format to present to the commander. Use the cut sheet when the commander desires a simple desk-side briefing.

Mission Analysis Cut Sheet

Mission Analysis Cut Sheet **Mission/OPORD**			
Tasks	**ASSETS**	**FACTS**	**CCIR**
SPECIFIED	1-101st (24 x AH-64D) 2-101st (24 x AH-64D) 3-101st (24 x AH-64A) 2/17 CAV (24 x OH-58KW) 6-101st (24 x UH-60)		**PIR**
IMPLIED	**CONSTRAINTS**	**ASSUMPTIONS**	**EEFI**
ESSENTIAL			**FFIR**
OTHER INSTRUCTIONS: (TENTATIVE DPS)			
RESTATED MISSION:	**RECOMMENDED TIMELINE:**		

Figure A4.

- The S2 begins the IPB or continues the IPB (should be continuous). The S2 works closely with the S3 and TACOPS section to develop ***what the enemy looks like*** in the form of a Situational Template (SITEMP). Define the enemy in terms of ***location, disposition, composition, capabilities, and tactics***. The S2 begins the formation of the collection plan to either task or request coverage from higher (in most cases, the brigade requests coverage. Aviation brigades do not have assets to dedicate to collection).

- The TACOPS section begins the development of LZ or OBJ sketches (Falcon View photo with graphics). Once developed, the TACOPS section reviews the ATO and SPINS for mission data (routes, A2C2 data).
- The S4 and S1 continue their staff estimates and provide input to the Mission Analysis Briefing in the form of facts, assumptions, and constraints.
- SIGO continues staff estimates to determine assets available and options to support developed courses of action.
- FSO continues staff estimate to determine assets available and options to support developed courses of action.
- **Results of Mission Analysis are produced as WARNORD 2 to subordinate units.

B. *COA Development/Analysis/Decision***.** Often the Commander will direct one or two specific courses of action (COA) in the abbreviated process. This Commander's Guidance is critical to making the best use of time.

- The S3 and PLEX draft out COAs to refine using a COA Worksheet (see Figure A5). Key differences in a COA in aviation units are: continuous, phased, or max destruction; size of reserve force; location of the FARP; use of USAF or Joint assets; planned artillery usage; and task organization. PLEX will sketch out the COA as the S3 assigns Task and Purpose to each element; then draft a COA Statement. When developing the COA, use the technique of Vision . . . ***What does the enemy look like (SITEMP)? What do we want him to look like? How do we make him look that way (assets available)?***
- The S2 will develop, with the S3, the **collection plan** to support each COA. To accomplish this, the S2 develops a series of NAIs, TAIs, and DPs to support the escalation of Readiness Conditions (REDCON) to meet the desired end-state. Once developed, these collection requirements are forwarded to higher headquarters for inclusion in the overall collection plan. Decision points come in three forms:

- Triggers. These events on the battlefield cause an immediate action. They do not require the commander to truly make a decision; the decision has already been made. Example: 20 armored vehicles pass NAI 402 (DP 1) moving South into EA SMASH [launch lead attack battalion along ROUTE ORION to EA SMASH].
- Friendly Success. These events are planned as sequels. What options do we have available if the first contact is successful and there is an opportunity to exploit more success? Example: initial attack destroys all ADA in EA SMASH and the enemy is pulling out in a mass retrograde. Decision to launch additional assets into objective area to exploit. Should be in the form of a "be prepared task" to a subordinate unit.
- Friendly Failure. These events are planned as branches. What options exist to reinforce a unit to cause a successful outcome? Example: lead element unsuccessful in the destruction of the ADA in EA SMASH. Launch second element to ensure the destruction. Again, should be in the form of a "be prepared task."

- The FSO and TACOPS sections refine the A2C2 and SEAD planning to support each COA.
- The SIGO coordinates C2 options for each COA.
- S4 and S1 continue to refine their staff estimates.

COA WORKSHEET

Mission:	Intent:
Statement:	

Unit: Task: Purpose:	Unit: Task: Purpose:	Unit: Task: Purpose:	Unit: Task: Purpose:	Unit: Task: Purpose:	Unit: Task: Purpose:

Task Organization:	Fighter Management: Employment Technique: Cont./ Phase / Max

Figure A5.

- The staff then wargames each specific COA to determine which is best suited for the mission. Decision criteria will be developed for each mission separately. If time is critical, use a Wargame Worksheet (see Figure A6) and save the detailed war-game until the final COA approval by the commander. Then, synch it out in detail. Avoid getting into the weeds during the war-game. Limit the war-game to the critical events identified in the synch matrix developed in step one.

WARGAME WORKSHEET

Event	Action	Reaction	Counter-action	BPT/Coord Instr.	DPs
1					
2					
3					
4					
5					
6					

1. Critical events are taken from the synch matrix. Only use 2-3 events, unless you are given a directed COA.
2. Wargame worksheet aids in the development of CCIR.

Figure A6.

- The true value of the war-game is to determine any "Be Prepared Tasks," "Coordinating Instructions," or "Decision Points" for the operation. These will become apparent during the Action, Reaction, and Counteraction approach to the war-game and be captured on a Decision Support Graphic (Matrix) (see Figure A7).

DECISION SUPPORT GRAPHIC (MATRIX)

DP	Est. Time	Event	NAI	CCIR	Action

Figure A7.

- The PLEX planner will simultaneously draft the formal base order during the COA process. This will expedite the orders production process.
- Once a COA is approved the staff publishes WARNORD 3 to subordinate units.

C. *Orders Production.* Each staff section has responsibility to complete their respective sections of the OPORD/FRAGO. Under the supervision of the XO, the order is finalized and preparations for the briefing begin. At a minimum, the following will be set up for the briefing:

- Map with graphics
- Agenda
- Copies of OPORD with all annexes
- Proxima with computer to run the OPORD slides to aid in the briefing
- (When possible) Blow up maps/photos of LZ and OBJ areas.

D. *Confirmation Briefs and Rehearsals.* Immediately following the OPORD briefing, subordinate commanders will give the Commander a confirmation brief.

- A confirmation brief is simply an azimuth check to let the Commander know that each subordinate commander understands the essential tasks given to them. Subordinate commanders also can relay their expected combat power at time of execution, and pass on any issues they may have with the plan. Upon completion of the confirmation brief, subordinate units will begin/continue to work on their orders process.
- A back brief is given to the commander to relay subordinate units' concept of the operation and usually is given to the commander prior to the rehearsal. This allows sufficient time to adjust any plan prior to rehearsing it. Back brief format follows the COA Worksheet (Figure A5) format: task organization, mission, intent, concept of maneuver/support/C2, fighter management cycle.
- The most important event in the orders process is the rehearsal. This is where the entire plan can be orchestrated with the actual elements performing the mission. The goal of an abbreviated MDMP is to offer as much time as possible for subordinates to conduct an effective rehearsal. An effective Rehearsal Agenda (see Figure A8) follows the outline below:

- Roll Call – (BDE CDR, S3, S2, FSO, SIGO, BN CDRs, S3s, FSOs, CO CDRs)
- GPS Time Hack
- Terrain Model Orientation
- Friendly Ops Update
- Weather Update
- Intel Update
- Mission
- Intent
- Initial Set for Combat
- Fires
- Critical Events
- Rehearsal
- Issues
- Cdr's Comments

Critical Events
-
-
-
-
-

Contingencies
-
-
-
-
-

Figure A8. Rehearsal Agenda.

The Execution Matrix is shown at Figure A9.

TIME	H-HOUR			
	LOCAL			
	X-FLOT			
EN	ENEMY			
CCIR	PIR			
	DP(s)			
INTEL	JSTARS			
	UAV			
	ELINT			
	HUMINT			
	Q-36/37			
MANEUVER	2/17 CAV			
	1-101			
	2-101			
	3-101			
	6-101			
CODEWORDS	T/O			
	SP			
	PP/FLOT			
	RP			
	ABF(s)			
	SET COLD			
	SET HOT			
	10 MIN			
	EGRESS			
	SP			
	PP/FLOT			
	RP			
	FARP			
FSCM	FSCL			
	CFL			
	NFA			
ADA	ADA			
A2C2	INGRESS			
	EGRESS			
	ROZ			
FIRES	FS EVENT			
	EA-6B			
	F-16 C/J			
	CAS			
	AI			
	ATACMS			
C2	TAC			
	TOC			
	C2 ACFT			
	ABCCC			
CSS	DPP/EAE			
	DART			
	FARP			
	FARP			

Figure A9. Executive Matrix.