



# Integrated Planning The Operations Process, Design, and the Military Decision Making Process

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**F**OR THE PAST several years, the School of Advanced Military Studies (SAMS) has been pursuing two objectives regarding design. First, under the exemplary leadership of Colonel Steve Banach, the school served as one of the Army's champions for the concept of design, and played a significant role in getting the idea into the Army lexicon. Simultaneously, but less visibly, the school has been aggressively experimenting with the concept of design from its initial form all the way through the establishment of the methodology defined in Field Manual (FM) 5-0, *The Operations Process*, last spring. We now believe we are in a position to offer some insight into the role of the design methodology within the Army's operations process, along the way dispelling a number of myths about the methodology that we, SAMS, may have unintentionally played a role in propagating.

We now recognize that the most important contribution of the March 2010 edition of FM 5-0 is not the introduction of the design methodology but the recognition that effective planning has both a conceptual and a detailed component. Unfortunately, this recognition can be missed if one skips directly to Chapter 3 of the manual, and the resulting confusion is only compounded by a number of common myths about the design methodology that ignore the distinction altogether. The mythology of design arose largely because of well-intentioned efforts to advertise the potential of the concept. The unintended result has been that the field's experiments with the design methodology have not always lived up to the billing. Consequently, the debate in military journals has somehow encouraged two equally unlikely propositions about using the design methodology: either it will eliminate error from military decision making, or it is useless. The truth lies between these extremes.

Because of our extensive experimentation with the design methodology, we believe SAMS is uniquely placed to offer an honest assessment of the methodology's applicability, strengths, and weaknesses. We have already stated our most central lesson: effective planning requires *both* conceptual and

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*PHOTO: U.S. Army soldiers from 1st Battalion, 327th Infantry Regiment, 101st Airborne Division, kneel outside the town of Badmuk, Kunar Province, Afghanistan, after a night assault on suspected Taliban positions as part of Operation Azmaray Fury, 2 August 2010. (DOD photo by SPC Anthony Jackson, U.S. Army).*

detailed thinking, and we separate the two at our peril. We have found that the design methodology offers commanders and staffs useful tools for conceptual thinking but is not a panacea for the problems that face the force today. Unfortunately, the advantages that the design methodology does offer will go largely unrealized unless the force is convinced of its value, and the common tendency to discuss its methodology with zealous propagandizing is far from helpful. We hope to start a more open discussion, admitting that we may have oversold design in the past, and we offer the following thoughts.

## Demythologizing Design

Unhelpful myths surrounding design militate against its widespread acceptance by the force. Here we want to put these canards to rest so discussion of the doctrinal design methodology can proceed constructively.

**Myth #1: The design methodology and planning are two mutually exclusive options for military decision making.** Actually, the design methodology is a subcomponent of planning. As FM 5-0 makes clear, “planning consists of two separate, but closely related components: a conceptual component and a detailed component.”<sup>1</sup> Planning encompasses the design methodology, the Military Decision Making Process (MDMP), and Troop Leading Procedures. All components of planning fit within the larger “operations process.” Language that attempts to split the world into “planners” and “designers” is inherently wrong and dangerous.

The design methodology is not a stand-alone methodology. FM 5-0 accurately asserts that the design methodology allows a planner to “develop approaches to solve” problems.<sup>2</sup> Put more bluntly, the design methodology does not produce solutions on its own. Why not? Because design is a tool for conceptual thinking, and effective solutions require both a conceptual component and a detailed component. A conceptual plan removed from the detailed considerations of the problem will quickly

assume a “daydream on acetate” quality, far removed from reality.

In a similar fashion, imagining detailed planning without a conceptual underpinning is equally wrongheaded. Such planning quickly devolves into a road to nowhere even if executed exactly. Such plans appear as intricate and sometimes appealing, but they will not produce desired results *because* they are not tied to the overarching purpose. Most proponents of the design methodology point to this error in planning as the explanation for why we need the design methodology in the first place. In reality, they are arguing for a *conceptual* component in planning; the design methodology is not the only tool that fills the bill, but currently it is the best option as an organized heuristic. In fact, the MDMP itself (as a heuristic) has both a conceptual and a detailed component.<sup>3</sup> When planners ignore the conceptual component of the MDMP, that process loses much of its value.

**Myth #2: The design methodology is for complex, ill-structured problems, and the MDMP is for other types of problems.** Although our doctrine, unfortunately, gives some credence to the idea that the design methodology is for complex, ill-structured problems while the MDMP is for others, this notion is false. This myth does not stand up under scrutiny. Perhaps there are some military problems that are not complex and ill-structured, but they do not draw the attention of leaders. Even problems often held as “complicated, but not complex” by those who adhere to Myth #2 only appear so in the abstract. Once one moves from an abstract, theoretical problem (such as “seize an airfield”) to a real-world version of the same problem (“seize *this* airfield in *this* real location in order to create *these* conditions”), complexity immediately rears its head. Any problem that involves predicting the behavior of human beings is inherently complex. This myth is much easier to sustain in the classroom than in the field; in the real world, the *only* problems worth thinking about are the complex, ill-structured ones, and these problems require both conceptual and detailed thinking.

**Myth #3: The design methodology is for the talented few; the MDMP is for the rest of us.** A common image of the design methodology involves a small group of talented staffers who do conceptual thinking for the commander preparing a product

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they then hand off to their less talented friends in the plans section for detailed planning. Field Manual 5-0's assertion that effective planning requires both conceptual and detailed thinking ought to make such an image suspect. The clear linkage between concepts and details makes it problematic to use designing and planning in sequence rather than in parallel.

This is not to suggest that the commander would not want to start his planning for an unfamiliar problem with a relatively small group of advisors; our doctrine recommends this technique as a proven practice. That small group begins as a *subset* of the larger group of planners rather than as a unique entity charged with conceptual thinking. They maintain a responsibility for the detailed thinking that must accompany the design methodology's conceptual thinking. The old practice among tactical commanders of having an "Orders Group A"—a select few among the staff who assist the commander in thinking about a problem at the macro level—may be a more useful model for the design methodology than the image of a sheltered group of "designers" who are not to be burdened with details. An effective planner must have his eyes constantly on both the conceptual and detailed components of planning.

**Myth #4: We plan for certainty; we design for uncertainty.** Aside from the fact that no military commander or planner has ever faced anything that looked even remotely like certainty, this myth rests on the idea that planning and the design methodology are two different things. They are not. We plan, almost exclusively, in an environment of uncertainty, and, as aforementioned, planning requires both a conceptual and a detailed component.

**Myth #5: Using the design methodology will make sure we solve the right problem correctly.** One of the reasons frequently cited for the development of design methodology is that a straightforward, unthinking, and unimaginative approach to the MDMP can produce catastrophic results. This is certainly true. However, a straightforward, unthinking, and unimaginative approach to the design methodology will produce the exact same results. The ability of a commander or staff to correctly identify their problem and the quality of the solution they produce reflect the quality of their thinking, not the methodology they use. While there is undoubtedly truth in the idea that some methods

## ***Myth #4: We plan for certainty; we design for uncertainty.***

are more restrictive than others, the impact of the methodology fades in comparison to the impact of the minds applied to the problem. *Who* is thinking about the problem is much more important than *what* instrument they use to organize their thinking. There simply is no substitute for clear and concise thinking, whether one is using the design methodology or the MDMP.

## **Beyond the Hype**

Recognizing that the design methodology is fraught with mythology is not the same as saying it has no utility. Our experience indicates the design methodology is, in fact, useful to planners for conceptual thinking, an essential component in effective planning. In light of that experience, we offer four observations to help supplant the current mythology.

**The design methodology provides a means of approximating complex problems that allows for meaningful action.** When Army officers reflected on their First World War experiences in *Infantry in Battle*, they concluded that the most essential element in the "practice of the art of war" is the ability to "cut to the heart of a situation, recognize its decisive elements, and base . . . [a] course of action on these." The ability to do this, they concluded, requires "training in solving problems of all types, long practice in making clear, unequivocal decisions, the habit of concentrating on the question at hand, and an elasticity of mind."<sup>4</sup>

The design methodology is largely focused on helping commanders and planners exercise the "elasticity of mind" that has always been a prerequisite for effective military action. It is a useful tool when the commander and staff face an unfamiliar problem, assisting them in recognizing the decisive elements in an environment in which their past experience does not immediately suffice. Our doctrine labels such problems "ill-structured," which is further defined as "complex, nonlinear, and dynamic."<sup>5</sup> Any military problem that includes an adversary, however, is "complex, nonlinear,

and dynamic” by nature, so this distinction is of little utility to military planners. The doctrine gets to a much more useful distinction when it admits that whether one sees a problem as ill-structured, medium-structured, or well-structured largely depends on “the knowledge, skills, and ability” of the person looking at the problem.<sup>6</sup> “Ill-structured” is in the eye of the beholder.

When a commander faces a novel and unfamiliar problem, he may feel overwhelmed by the uncertainty. It is here that the design methodology can help. The conceptual framework of an environmental frame, a problem frame, and an operational approach allows the commander and his staff to think about the situation without focusing them immediately on developing or refining a mission statement. It provides some intellectual breathing space to “cut to the heart of a situation.” It allows them to better understand the complexity of the problem by becoming familiar with the critical elements in the environment and then approximating the problem to a level of simplicity that allows for meaningful action. It helps, in other words, with the very same intellectual challenges that have faced commanders throughout the history of the Army.

The design methodology does not produce an executable solution, however. Its role is to assist the commander in “getting his arms around” a new and unfamiliar problem or an old problem that has changed in some new and unexpected way. Having achieved that, the design methodology must be integrated with a more detailed approach to planning, and usually the earlier this happens the better for all concerned.

**The design methodology enables commanders to meld analytic and intuitive decision making in a way that takes advantage of both.** FM 6-0, *Mission Command: Command and Control of Army Forces*, delineates two types of decision making: analytic and intuitive. The former, which is associated with the MDMP in the manual, is described as “structured” and “methodical,” while the latter “substitutes application of the art of command for missing information.” Although conceding that “in practice, the two approaches rarely exclude each other,” the doctrine states explicitly that “intuitive decision-making does not work well when the situation includes inexperienced commanders, complex or unfamiliar situations.”<sup>7</sup>

In contrast, the design methodology offers a third type of decision making: *synthetic*. It asks the commander to put his full intuition to work in even the most unfamiliar situation, but to temper and inform that intuition with input from selected members of “the planning staff, red team members, and subject matter experts internal and external to the headquarters.”<sup>8</sup> The design methodology is intentionally less structured than our other planning methodologies in order to get every brain, and not just every weapon, into the fight. Faced with a new and unfamiliar problem, the design methodology asks commanders to increase the elasticity of their own minds by considering input from sources that would be of questionable usefulness if the situation were more familiar. It seeks to provide by proxy the experience the commander lacks in a specific environment.

**Underpinning the design methodology are useful tools for conceptual thinking, even when that thinking is done within the framework of the MDMP.** Conceptual thinking has been around a long time, and is not synonymous with the design methodology. Indeed, the overwhelming majority of conceptual thinking done within the history of our Army was done without any reference to the design methodology whatsoever. Why, then, should we spend time and energy training the force for a new methodology that appears to be applicable in what some will argue will prove to be only a relatively small number of situations (those that are new or novel enough to be outside the experience of the commander and staff)?

The answer lies in the first claim of this article: the most important contribution of FM 5-0 is the recognition that effective planning requires both conceptual and detailed thinking. All effective planning requires a conceptual component, and many of the ideas underlying the design methodology (such as reflection, iteration, systems thinking, learning theory, narrative, cultural lenses, and more) are useful to the commander and staff even when there is insufficient time to explicitly employ the design methodology as described in FM 5-0. An effective planner will find himself using these tools even when faced with problems that are relatively familiar to him because they allow him to move quickly to the more detailed planning that is necessary for action.





School of Advanced Military Studies students use a model with broad categories, ranging from culture to security, potentially affecting their exercise issue during the Operational Command Workshop, part of the yearlong Future Warfare School Plan Unified Quest, 28 January 2008.

**Unfamiliarity with a problem, rather than its structure or complexity, is the best indicator of design’s utility.** Although our doctrine invests several pages in delineating varied structures a problem may display (and the various levels of complexity it may contain), the best predictor of how valuable the design methodology will prove is the level of familiarity the commander and staff have with the problem. The design methodology is most useful when the commander and staff are least familiar with the problem. Either the problem is itself novel, the command and staff is new to the problem, or the problem has changed in some unforeseen way. Under these conditions, a structured approach to conceptual thinking is most useful, and design methodology provides that structure.

This observation allows a more broadly defined rule of thumb for applying the design methodology. The closer a commander is to an assigned, well-defined task and purpose, the less valuable the design methodology is likely be. In the absence of an assigned mission—or with one that is broad and obscure (“Fix Ramadi” being a

contemporary example)—the commander is likely to find the design methodology useful.

Recognizing that the rule of thumb we propose applies to the design methodology, not to conceptual thinking itself, is important. The SAMS experience indicates, in fact, that the most effective planners do not compartmentalize their thinking into conceptual and detailed components. Instead, they integrate the two to such an extent that an outside observer would find it difficult to determine when the planner was engaged in one rather than the other. The question of when one uses conceptual thinking and when one uses detailed thinking, as opposed to when one uses the design methodology or the MDMP, is valid only in the laboratory. In the real world, effective commanders and staffs integrate them seamlessly.

## **A Case Study in Conceptual and Detailed Thinking**

Operation Overlord presents material for a case study in the integration of conceptual and detailed planning for a problem of staggering complexity. The planning effort—undertaken by American and British officers between 1943 and 1944—blended

conceptual and detailed planning for complex problems to enable meaningful action. Although this group of military planning professionals, known collectively as the “COSSAC staff,” knew nothing of today’s design methodology, their example of conceptual and detailed thinking is instructive nonetheless.<sup>9</sup>

Retroactively labeling the COSSAC planning effort as an example of the design methodology would be inappropriate and perhaps confusing. That is not the suggestion here. With the possible exception of some overlapping word choice, the COSSAC staff was conducting a process much more akin to the MDMP, or its precursor, the “Estimate of the Situation.”<sup>10</sup> However, this vignette does provide an excellent example of the necessary mixture of conceptual and detailed planning inherent in any worthwhile military operations process.

In the early spring of 1943, the American and British Combined Chiefs of Staff (CCS) ordered the establishment of a headquarters to begin the formal planning for the eventual “full scale assault against the continent in 1944 (Operation Overlord).”<sup>11</sup> Additionally, the CCS directed that this staff develop a credible deception plan and determine what would be required if the German government collapsed without an invasion.

Although the headquarters would eventually transform into the staff of the Supreme Allied Commander, at the outset the CCS declined to appoint a commander and elected instead to have Lieutenant General Frederick Morgan serve as the chief of staff. Over the next nine months, Morgan and his staff conducted half a dozen distinct iterations of cyclic planning refinement, moving from a general concept to a specific planning directive, while simultaneously generating movement tables, detailed topographic and oceanographic surveys, and refined statements of operational requirements. As Morgan himself identified early on, the efforts of the COSSAC staff would transcend any previous definition of planning.<sup>12</sup> In its final form, Operation Overlord was a military undertaking of a “magnitude undreamt of before,” eventually involving over 130,000 soldiers, sailors, airmen, and marines from seven different countries.

To enable the COSSAC planners to approach a problem of the size and scale envisioned, they needed a means for approximating their complex

problem at a level of simplicity that was useful. One example of how Morgan and his staff accomplished this happened at the beginning of the planning effort in 1943. Although the COSSAC staff was instructed to build three supporting campaign plans (deception, assault, and stability), and their initial analysis suggested where and when to cross the channel and with how much, they quickly realized that the heart of their problem was landing craft. The conceptual notion of assaulting with Allied forces across the English Channel led the planning team into a detailed effort to determine how many boats and of what size and configuration would be needed. In other words, the complex problem of a multi-Army, multi-division assault from the sea with supporting airborne invasion and accompanying naval and air-delivered operational fires was reduced to an effort to determine the number of boats needed. The COSSAC planners’ efforts to approximate their problem in simple terms are akin to the conceptual notion of framing the environment and framing the problem, both of which are inherent in the design methodology.

In a similar manner, the experience of the COSSAC staff provides an example of the benefits of mixing analytic and intuitive decision making. As noted above, the benefit of this blending in the execution of the design methodology is the reduction of uncertainty by testing and supplementing the commander’s intuition. In this example, the purpose of the COSSAC effort was to confirm or deny the intuition of CCS leaders, such as General George Marshall, who instinctively sensed the pressure the invasion of Europe would have on the Nazis. What the CCS needed were details regarding the size of the force and the time and space it would take to train and assemble. As Morgan put it, the COSSAC staff needed to figure out what tools they needed, and answer these questions: “can the job be done with these tools, or not? If so, how, and if not, why not?”<sup>13</sup> Additionally, the COSSAC staff’s deliberate effort to examine in detail every military crossing of the English Channel from the 11th century to the 1942 raid on Dieppe used detailed analysis to replace uncertainty with a set of known facts. Furthermore, Morgan’s insistence on employing subject matter experts in a variety of supplementary planning efforts helped the COSSAC staff get every brain into the fight.

Would Morgan and his team have benefited from the the design methodology of our doctrine? Two indicators suggest that they would have. First, Morgan’s problem seems to fit easily into our proposed “rule of thumb.” He lacked an assigned mission with a clear task and purpose, and the guidance he did have was vague in the extreme. Furthermore, his familiarity with the problem was limited by the lack of experience in operations of this magnitude and operational scale. The SAMS experience over the past several years indicates that this is exactly the situation when the design methodology is most beneficial. Secondly, although the design methodology did not exist in 1943, Morgan and his staff used many of the tools that underlie its methods, “iteration” being only the most obvious example. The COSSAC staff’s overall effort to reduce the unfamiliarity of the CCS (and military professionals everywhere) with the requirements for a multi-army seaborne invasion and the simultaneous development of specific missions for the land, air, and sea forces involved are a perfect example of the integration of conceptual and detailed planning. They highlight the type of situation in which the design methodology is most useful to commanders and staffs.

## The Future of Design Methodology

To get the most utility out of design, our doctrine must recognize the need for integrated planning that incorporates the best of the conceptual tools of the design methodology with the best of the detailed planning tools of the MDMP. The mental image of a group of “designers” aiding a commander’s conceptual thinking and then passing off a product to the less talented “planners” who then turn it into a plan is not a viable model. As our doctrine already states, “conceptual planning must respond to detailed constraints.”<sup>14</sup>

Instead, planners must be able to master conceptual thinking *and* detailed thinking, with the design methodology serving as one of several available tools. The ability of a commander or a planner to recognize the decisive elements of a problem and develop a course of action based on these rests on his ability to think in both conceptual terms and in detail. At the School of Advanced Military Studies, we remain dedicated to producing operational planners who excel at doing both.



Photo by Prudence Siebert/Fort Leavenworth Lamp

School of Advanced Military Studies students and instructor during the Operational Command Workshop, part of the year-long Future Warfare Study Plan Unified Quest 2008.


NOTES

1. Field Manual (FM) 5-0, *The Operations Process* (Washington, DC: U.S. Government Printing Office [GPO]) para. 3-2.
2. FM 5-0, para. 3-1.
3. FM 5-0, para. 2-43.
4. The Infantry Journal, Incorporated, *Infantry in Battle, Third Edition* (Richmond, Virginia: Marine Corps Association Press, 1986), 1. Originally published in 1934, this collection of observations based on U.S. experiences in the Great War was developed at Fort Benning under the direction of George C. Marshall.
5. FM 5-0, para. 2-23.
6. FM 5-0, para. 2-20. It is worth noting that the historical examples of structured and ill-structured problems used in FM 5-0 are found in paragraph 3-16, and in both cases the *sole* factor in determining structure is the familiarity of the commander with the problem. It seems likely that the phrase “the world is increasingly complex” may be more accurately worded as “we are increasingly asked to perform unfamiliar tasks.”
7. FM 6-0, *Mission Command: Command and Control of Army Forces*,


- (Washington, DC: GPO), para. 2-12 through 2-15.
8. FM 5-0, para. 3-32.
9. Frederick Morgan, *Overture to Overlord* (Garden City, NY: Doubleday and Company, Inc. 1950), 2. The name is taken from the initials of the senior officer appointed—the Chief of Staff, Supreme Allied Command, or COSSAC.
10. U.S. Army Command and General Staff College, FM 100-5, *Field Service Regulations: Operations*, 22 May 1941 (reprint) (Fort Leavenworth, KS: U.S. Army Command and General Staff College Press, 1992), 25.
11. Supreme Headquarters Allied Expeditionary Force. *History of COSSAC*, File 8-3.6A CA (Washington DC: Chief of Military History,) 3 and 5.
12. United States Forces—European Theater, “Report of the General Board: Study of the Organization of the European Theater of Operations (General Board Study Number 2)” (Washington DC: Headquarters, Department of the Army, circa 1946), 11.
13. Morgan, 61.
14. FM 5-0, para. 2-39.

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