



The United States Army

Commander's Appreciation and Campaign Design

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Foreword

From the Director
U.S. Army Capabilities Integration Center

The U.S. Army Commander's Appreciation and Campaign Design (CACD) is a cognitive model intended for use by commanders charged with designing, planning, and executing military campaigns. It was developed over a three year period during a series of strategic and operational-level seminars and wargames that comprised UNIFIED QUEST, which is the Army's annual U.S. Code Title 10 Future Warfare Study Plan and capstone wargame. It incorporates recent operational experience, elements of Systemic Operational Design and recently published joint doctrine. CACD proposes a method for commanders to develop a shared understanding of complex operational problems within their commands (commander's appreciation) and design a broad approach for problem resolution that links tactical actions to strategic aims (campaign design). It responds to the need for greater strategic thinking at all echelons when facing complex operational problems.

The complexity of today's operational environment requires a different approach to problem solving. It requires the commander's direct participation in a heavily *inductive* reasoning process upfront. This process must produce a well-framed problem hypothesis and an associated campaign design—a conceptual approach for the problem. This appreciation of the problem and the design of a solution can then be handed off to a *deductive* reasoning process executed by the staff under the commander's direction that, in turn, produces executable plans and orders for implementation. The first process is one of *formulation*, a creative, heuristic, and iterative activity; the second is one of *implementation*, a practical, logical, and disciplined linear activity.

While this intellectual approach to problem resolution resulted from the Army's annual Future Warfare Study Plan and capstone wargame, it has application for any joint, interagency, multinational, or single service command that faces a complex operational problem. The Army Capabilities Integration Center created this publication in order to facilitate further development of the model not only within the Army, but within the joint community, civilian government agencies, and multinational partners as well.



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THE U.S. ARMY COMMANDER'S APPRECIATION AND CAMPAIGN DESIGN

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History. This publication is a new United States Army Training and Doctrine Command (TRADOC) Pamphlet.

Summary. TRADOC Pamphlet 525-5-500, *The U.S. Army Commander's Appreciation and Campaign Design* (CACD), is a cognitive process intended for use by commanders charged with designing, planning, and executing a campaign. The process is a result of experimentation conducted during the Army's annual Future Warfare Study Plan and capstone wargame, UNIFIED QUEST, in 2005-2007 and recent operational experience. The origins of this pamphlet make it different from the other TRADOC concept publications in the 525-series (military operations). This pamphlet proposes a process for commanders to create a shared understanding of complex operational problems within their commands and to design broad approaches that link tactical actions to strategic aims. This pamphlet is a response to the need for greater strategic thinking at all echelons when facing complex problems. As an experimental process, CACD is intended to shape future joint and Army doctrine.

Applicability. Although this process is the product of the Army's annual Future Warfare Study Plan, TRADOC has designed it for use by any multinational, interagency, joint, or single service organization charged with solving a complex operational problem. As an experimental process, it provides a conceptual basis for further development within the domains of doctrine, organization, training, materiel, leadership and education, personnel, and facilities. The

cognitive model applies to the commands and agencies charged with developing solutions to these problems.

Administrative information. Required and related publications and required and referenced forms are listed in appendix A. Abbreviations and terms used in this pamphlet are explained in the glossary. Unless stated otherwise, masculine nouns or pronouns do not refer exclusively to men.

Proponent. The proponent of this pamphlet is the Director, Army Capabilities Integration Center (ARCIC), Concept Development and Experimentation Directorate, Future Warfare Division (ATFC-EF), 133 Ingalls Road, Fort Monroe, VA 23651-1046.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Director, ARCIC, Concept Development and Experimentation Directorate, Future Warfare Division (ATFC-EF), 133 Ingalls Road, Fort Monroe, VA 23651-1046. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program Proposal).

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Chapter 1 Conceptual Framework

1-1. Purpose

a. The complexity of warfare in the early twenty-first century poses special challenges to the United States (U.S.) Armed Forces. The services developed much of their doctrine, organizations, and equipment during the Cold War in preparation for war between states. At the time, this type of war was the most dangerous threat to our Nation's survival, but it was not the most likely form of conflict—then or now. In fact, throughout the Cold War and the period that followed, war between states has been the rarest form of conflict in which the United States engaged.¹ U.S. joint and service doctrine must advance beyond the old paradigm of war between states and between armies of regulars that are organized, trained, and equipped according to a similar logic.

b. Future violent conflicts are more likely to reflect what British General Rupert Smith has called “war amongst the people.”² These are conflicts in which some or all of the participants are irregulars and military operations cannot deliver a conclusive political result. Rather, political and military activities intermingle throughout these conflicts, requiring cohesive unified action. Fighting is frequently conducted among the people in villages and cities. In some cases, the people themselves are the adversary or the objective—or both. The Internet and cable television shape the perceptions of a global audience in near real time. Every action conveys a message, and the interpretation of that message often varies from one audience to another in unintended and unpredictable ways.

c. In such a conflict, adversaries still seek to establish favorable political and social conditions. However, rather than the firm absolute objectives that political leaders traditionally resolved in treaties, these conditions are malleable, requiring acceptance by individuals and societies. As a consequence, campaigns in the future will be prolonged and have dynamics more complex than those of traditional nation state wars. Even conflicts that begin as traditional state-versus-state wars—Operation IRAQI FREEDOM (OIF), for example—are likely to have aspects of “war amongst the people” since the goals may include establishing new social and political conditions. As these conflicts are inherently more complex than traditional state-based warfare, they demand a different way of thinking.

d. The Commander's Appreciation and Campaign Design (CACD) is a cognitive process, rooted in operational experience and wargames. It is intended for use by commanders charged with designing, planning, and executing military campaigns. CACD describes a process to create a systemic and shared understanding of a complex operational problem and to design a

¹ Korea, Panama, and the Gulf War were wars between states. The Philippine War, Banana Wars, Vietnam, Beirut, Somalia, Haiti, Bosnia, and Afghanistan were wars that pitted states against armed groups of irregulars. Operation IRAQI FREEDOM began as a traditional war between states, but quickly became irregular.

² Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (London: Penguin Books Ltd, 2005), pp. 17-18.

broad approach for its resolution. The resulting campaign design must guide the production of operational plans and orders that will, in turn, guide tactical execution.

e. Traditional planning processes implicitly assume that plans and orders from higher headquarters have framed the problem³ for their subordinates. CACD recognizes that orders flow from higher to lower, but understanding often flows from lower to higher, especially when operational problems are complex. In these cases, a commander is often in a better position than his superiors to understand the full scope of a complex operational problem. Thus, it is more likely that commanders at all levels will frame the problem themselves and then share their understanding with their superiors and subordinates. However, this does not mean that understanding will only flow upwards. Superiors usually have a wider perspective, which any understanding of an operational problem must take into account: where does this campaign or operation fit within the larger strategy? A significant goal of CACD is a shared understanding of complex problems. This requires battlefield circulation by higher commanders; candid discourse with superiors, subordinates, peers, and staff; and strategic thinking at all levels.⁴

f. Chapter 1 introduces the conceptual framework behind CACD, focusing on four topics: complexity, problem structure, operational art, and campaigning. Chapters 2 and 3 describe the Commander's Appreciation and the Campaign Design approaches, respectively. The Army Capabilities Integration Center (ARCIC) offers this emerging concept in order to facilitate further development of the process not only within the Army, but also within the joint community, civilian government agencies, and multinational partners.

1-2. Complexity

a. Commanders must approach operational problems from a holistic systems perspective. Joint Publication (JP) 3-0 defines a system as "a functionally related group of elements forming a complex whole." The entire earth is a system, which like most systems is divisible into sub-components which are themselves systems. Each of these systems has a structure of independent parts that interact. Some of these parts interact with parts of other systems. It is the number of parts and the ways in which they interact that define the complexity of a given system.

(1) *Structural complexity* is based upon the number of parts in a system. The larger the number of independent parts in a system, the greater its structural complexity.

(2) *Interactive complexity* is based upon the behavior of the parts and the resulting interactions between them. The greater the freedom of action of each individual part and the more linkages among the components, the greater is the system's interactive complexity.

³ The singular form of problem is used throughout this document for simplicity. However, achieving strategic aims may require solving several interrelated problems. Actions taken with regard to one problem will affect the nature or scope of others.

⁴ Gary Luck, "Insights on Joint Operations: The Art and Science," The Joint Warfighting Center, U.S. Joint Forces Command (September 2006), pp. 3, 12, and 22.

b. Structural Complexity. It is possible for a system to have many parts and therefore great structural complexity, but to exhibit almost no interactive complexity. Machines function this way. A microchip may have billions of internal circuits and therefore great structural complexity, but its responses to a wide range of inputs are entirely predictable. It is therefore interactively simple. Similarly, an automobile driver knows when he puts his foot on the accelerator that his vehicle, which is constructed from thousands of parts, will go faster.

(1) Such systems demonstrate *linearity*, because they exhibit *proportionality*, *replication*, *additivity*, and *demonstrability of cause and effect*. *Proportionality* means that a small input leads to a small output, a larger input to a larger output. Push down lightly on the accelerator, the car will go slowly, but push down heavily and its speed will increase. *Replication* means that the system will respond the same way to an input under the same conditions. Replication also allows *cause and effect* to be demonstrated. Thus, a driver knows that changing the position of the accelerator causes the speed to change.

(2) *Additivity* means that the whole is equal to the sum of the parts.⁵ The additive nature of linear systems legitimizes analysis. Analysis reduces the system into progressively smaller components in order to determine the properties of each. In a system that exhibits little interactive complexity, the properties of the whole system can be understood based upon the properties of the components. The most effective way to study such a system is *systematically*⁶ and quantitatively using the analytical problem solving. Unfortunately, the operational problems confronting commanders at all levels are rarely linear.

c. Interactive Complexity. Interactive complexity makes a system more challenging and unpredictable than structural complexity. These systems are non-linear because they are not proportional, replicable, or additive, and the link between cause and effect is ambiguous. They are inherently unstable, irregular, and inconsistent. The most complex systems are those that are both structurally and interactively complex. However, even a structurally simple system can be interactively complex and therefore unpredictable. Take for example, the highly interactive dynamics associated with a small group of friends. A system composed of people is inherently interactively complex because people have great freedom of action and links to many others in their society.

(1) Reductionism and analysis are not as useful with interactively complex systems because they lose sight of the dynamics between the components. The study of interactively complex systems must be *systemic*⁷ rather than reductionist, and qualitative rather than quantitative, and must use different heuristic approaches rather than analytical problem solving.

⁵ Thomas Czerwinski, *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs* (Washington, D.C.: DoD Command and Control Research Program, 1997), pp. 8-9.

⁶ *Systematic*: A methodical process dependant on an expectation of prescriptive cause and effect within a closed system.

⁷ *Systemic*: A holistic approach that draws from systems theory, aimed at understanding and influencing change in an open system. Note that system is derived from a Greek word meaning "to combine." A systemic understanding means combining components of a system in a context and establishing the nature of their behavior and relationships. Systemic is not equivalent to systematic.

(2) Since warfare represents a clash between societies or cultures, most operational problems are both structurally and interactively complex. Several features of the current and future operational environment have magnified the non-linear complexity inherent in all warfare. War amongst the people has increased the number of linkages within the operational environment, and made the freely-formed opinions of large groups of people on all sides—to include neutrals—important to the outcome. The media carry images and perceptions of the ongoing operations and each action carries an implicit message. Each Soldier thus has potential links to the members of a global audience, and therefore his actions can “directly impact on the outcome of [a] larger operation.”⁸

(3) The ways that adversaries are organized add to the complexity of the operational environment. In many cases, the adversaries are indistinguishable from the rest of the population. Their organizations and objectives are not just different than the regular armies of states; they have a completely different logic, one that makes the recognition of cultural narratives and the study of anthropology, history, and language essential for a more complete understanding of the nature of the conflict.

d. Complex Adaptive Systems. The speed with which even irregular forces learn and adapt adds a temporal dimension to complexity. The ability to learn and adapt while fighting marks future adversaries and the societies from which they come as *complex adaptive systems*. Such systems “exhibit coherence under change, via conditional action and anticipation, and they do so without central direction.”⁹ Irregular forces, because they are less regimented and hierarchical, can change not only their fighting techniques, but also their organization and the very objectives for which they are fighting.

(1) During operations against Hezbollah in Lebanon in the summer of 2006, the Israeli Defense Forces (IDF) formed a Center for Army Lessons Learned, which “collected, analyzed and dispersed operational knowledge and lessons learned in real-time amongst fighting forces.”¹⁰ The center gathered knowledge gained from each day’s operations, printed digests, and distributed these down to company level by the next day. However, the Israelis were not the only ones learning and adapting. Gil Ariely, the Chief Knowledge Officer of the IDF Ground Forces noted, “The need to learn while fighting was initially derived from [Hezbollah’s] intuitive ability to learn in short cycles.”¹¹

⁸ Charles C. Krulak, “The Strategic Corporal: Leadership in the Three Block War,” *Marines*, January 1999, p. 31. It is important to differentiate between having a strategic effect and achieving a strategic aim. A tactical unit may have a strategic effect, but only in exceptionally rare cases will a tactical unit—operating by itself—achieve a strategic aim. Normally, achieving strategic aims require the unified effort of large forces and all of the instruments of national power.

⁹ John H. Holland, *Hidden Order: How Adaptation Builds Complexity* (Reading, Massachusetts: Addison-Wesley Publishing Co, 1995.), p. 55.

¹⁰ Gil Ariely, “Learning to digest during fighting – Real time knowledge management,” <http://www.instituteforcounterterrorism.org/apage/7572.php>.

¹¹ Ariely.

(2) It is important to note that the systems that comprise the adversary are not the only ones capable of adaptation. The wider environment and friendly systems, such as domestic public opinion, also adapt in response to operations and perceptions of operations. The ability of all these systems to change makes it essential for armies to learn while operating. As the enemy and other elements in the operational environment have adapted to earlier actions, a commander may discover that his original understanding of a problem is no longer valid. Operational learning will be discussed in more detail in the section on assessment and reframing (see paragraph 1-6).

1-3. Operational Problems

a. Operational Problems. Complexity is significant to commanders as a characteristic of operational problems. An *operational problem* is a discrepancy between the state of affairs *as it is* and the state of affairs *as it ought to be* that compels military action to resolve it. Note that not all discrepancies require action, and these are more accurately called “concerns.” National leaders may not like the fact that these concerns exist, but their negative effect on our national interests and ideals are not severe enough—when compared to the cost or potential for solution—to require military action. To illustrate the difference, consider the fighting in Bosnia as Yugoslavia disintegrated after 1991. Prior to the Dayton Peace Accords, Bosnia was a concern to the U.S.—tragic, but not worth the price of action. At Dayton, Bosnia became an operational problem that compelled U.S. military action. However, there are no operational problems that are strictly military; force must be used in harmony with other instruments of national power.

b. Well-Structured Problems. Soldiers are problem solvers, and the complexity of operational problems range from tame, well-structured problems to those that are extremely complex and ill-structured. Like other professions, Soldiers prefer structural complexity and linear phenomena. Such problems are easy to control through technical reduction and a systematic method-based solution. They are also easier to recognize and place in categories. Modern U.S. Army tactical doctrine fits this mold, specifying the tasks, conditions, and standards for every task from tank gunnery to conducting a defense. The most structured problems, tank gunnery for example, also have one correct solution. Success in gunnery requires learning to perfect the established technique. (See figure 1-1 for types of problems and solution strategies.)

c. Medium-Structured Problems. Medium-structured problems are more interactively complex. There is a manual that describes how a battalion task force should conduct a defense, but there is no single correct solution. Professional Soldiers will agree on the structure of the problem (“conduct a defense”), appropriate tasks, and the end state, but they may disagree about how the general principles in doctrine are applied on a specific piece of terrain against a specific enemy. Furthermore, it is possible for a defense to succeed against one enemy commander yet fail against another under precisely the same circumstances. The difference between success and failure in this case is a function of interactive complexity, rather than a structural or technical difference between the two enemy forces.

d. In training, evaluators frequently focus on the linear phenomena rather than the non-linear. In other words, they focus on the science of war, which is based upon professional

consensus and is authoritatively prescribed in doctrine, rather than the art of war, which is based upon intuition and genius.¹² It is difficult to build a leader development system designed to produce genius because genius is idiosyncratic. Therefore, professional institutions have based doctrine, training, and leader development on the science of war, the linear phenomena that can be controlled and on whose structure professional Soldiers can agree.

	Well-Structured “Puzzle”	Medium-Structured “Structurally Complex Problem”	Ill-Structured “Wicked Problem”
Problem Structuring	The problem is self-evident. Structuring is trivial.	Professionals easily agree on its structure.	Professionals will have difficulty agreeing on problem structure and will have to agree on a shared starting hypothesis.
Solution Development	There is only one right solution. It may be difficult to find.	There may be more than one “right” answer. Professionals may disagree on the best solution. Desired end state can be agreed.	Professionals will disagree on: <ul style="list-style-type: none"> • How the problem can be solved. • The most desirable end state. • Whether it can be attained.
Execution of Solution	Success requires learning to perfect technique.	Success requires learning to perfect technique and adjust solution.	Success requires learning to perfect technique, adjust solution, and refine problem framing.
Adaptive Iteration	No adaptive iteration required.	Adaptive iteration is required to find the best solution.	Adaptive iteration is required both to refine problem structure and to find the best solution.

Figure 1-1. Types of Problems and Solution Strategies

e. Ill-Structured Problems. Ill-structured problems are the most interactively complex, non-linear, and chaotic—and therefore the most challenging. Unlike well- or medium-structured problems, professionals will disagree about how to solve this type of problem, what should be the end state, and whether the desired end state is even achievable. At the root of this lack of professional consensus is the difficulty in agreeing on the structure of the problem. Unlike medium structured problems, it is not clear what action to take, because the nature of the problem itself is not clear. In 1972, a professor of Design at UC Berkeley, Horst Rittel, described the characteristics of socially complex problems, which he called “wicked problems”—not wicked in the sense of evil, but rather extremely difficult.¹³ With slight modification, Rittel’s description of this category captures well the challenge posed by operational problems in the modern era:

(1) There is no definitive way to formulate an ill-structured problem. Given a tame problem, it is possible to formulate the problem with all the information necessary to solve it—provided that the problem-solver knows his method. However, this is not possible with wicked

¹² Carl von Clausewitz, Michael Howard, and Peter Paret, *On War* (Princeton, New Jersey: Princeton University Press, 1984), pp. 100-112. Clausewitz summarized military genius as a harmonious combination of courage, powers of intellect, and strength of will.

¹³ Horst W. J. Rittel, “On the Planning Crisis: Systems Analysis of the ‘First and Second Generations,’” *Bedriftsøkonomen* 8 (1972), pp. 392-393. Horst W. J. Rittel and Melvin M. Webber, “Dilemmas in a General Theory of Planning,” *Policy Sciences* 4 (1973), pp. 161-167.

problems. The information needed to understand the problem depends upon how one defines it. And the solution depends upon how one understands the problem, or how one answers the question: “What is causing this problem?” Ill-structured problems rarely have a single cause, and different stakeholders will see the relationships between the causes and their importance differently. Thus, understanding and formulation depend to some degree upon the perspective of the problem-solver rather than objective truth. This is not to say that the objective conditions do not exist, but our perception of these conditions as a problem that must be solved is itself subjective. Thus an ill-structured problem cannot be known, but must instead be constructed. As John Schmitt notes, “Understanding a wicked problem is not a matter of capturing reality sufficiently correctly, but of constructing an interpretation that is sufficiently useful in dealing with the reality.”¹⁴

(2) We cannot understand an ill-structured problem without proposing a solution. Understanding the problem and conceiving a solution are identical and simultaneous cognitive processes. For example, if we formulate an insurgency as the result of a failed regional economy, our solution will be different than if we formulated the insurgency as the result of poor governance. The formulation of the problem points in the direction of a particular solution. This insight will be discussed at greater length in the section below on operational art (see paragraph 1-4).

(3) Every ill-structured problem is essentially unique and novel. Historical analogies may provide useful insights—particularly on individual aspects of a larger problem—but the differences between even similar situations are profound and significant. The political goals at stake, stakeholders involved, cultural milieu, histories, and other dynamics will all be novel and unique to a particular situation.

(4) Ill-structured problems have no fixed set of potential solutions. Since each wicked problem is a one-of-a-kind situation, it requires a custom solution rather than a standard solution modified to fit circumstances. Tactical doctrine offers standard templates for action, standard ways of doing things that have to be adapted to specific circumstances. Strategists and operational artists have no similar kit of generic solutions. The dynamics that make an operational problem unique also demand the design of a custom solution. Additionally, there is no way to prove that “all solutions to a wicked problem have been identified and considered.”¹⁵ Commanders may never consider some solutions, either because they are too exotic or because self-imposed constraints limit potential actions.

(5) Solutions to ill-structured problems are better-or-worse, not right-or-wrong. There is no objective measure of success and different stakeholders may disagree about the quality of a solution. The suitability of a solution will depend upon how the individual stakeholders have formulated the problem and what constitutes success for them.

(6) Ill-structured problems are interactively complex. Operational problems are socially complex because people have tremendous freedom of interaction. Since interactively complex

¹⁴ John F. Schmitt, “A Systemic Concept for Operational Design,” www.mcwl.usmc.mil/concepts/home.cfm, pp. 9-12.

¹⁵ Rittel and Webber, p. 164.

problems are non-linear, a relatively minor action can create disproportionately large effects. The same action performed on the same problem at a later time may produce a different result. Interactive complexity makes it difficult to explain and predict cause and effect.

(7) Every solution to an ill-structured problem is a ‘one-shot operation.’ Every attempted course of action has effects that create a new situation and cannot be undone. The consequences of military action are effectively irreversible. Whenever actions are irreversible and the duration of their effects is long, every attempted action counts.

(8) There is no immediate and no ultimate test of a solution to an ill-structured problem. The perceived quality of a solution to an ill-structured problem can change over time. Speaking metaphorically, yesterday’s solution might appear good today, but disastrous tomorrow as the unintended effects become clearer. In the discussion of measures of effectiveness, JP 5-0 notes that measurable results to a particular action may not appear for some time. This time lag complicates assessment enormously, because in the meantime the operational command may have executed other actions, which will make assessing cause and effect even more difficult.

(9) Ill-structured problems have no ‘stopping rule’. It is impossible to say conclusively that such a problem has been solved in the sense that a student knows when he has solved a math problem. Work on a wicked problem will continue until strategic leaders judge the situation is “good enough,” or until national interest, will, or resources have been diverted or exhausted.

(10) Every ill-structured problem is a symptom of another problem. The causal explanation for a problem will determine the range of possible solutions. Yet, solving one problem often reveals another higher level problem of which the original one was a symptom. The level at which an operational problem is solved depends among other things upon the authority, confidence, and resources of a particular commander. One should not simply cure symptoms, but should rather strive to solve the problem at the highest possible level. However, if the problem is formulated at too high a level, the broader and more general it becomes and therefore the less likely it is to solve particular aspects of the specific problem.

(11) The problem-solver has no right to be wrong. The writ of an operational commander and his staff is to improve the state of affairs in the world as his countrymen perceive it. Like others in Government service, he is responsible for the consequences of the actions he generates.

f. Throughout the remainder of this pamphlet, the complexity of a problem will refer to the presence or lack of structure: well-structured problems are the least complex; ill-structured problems are the most complex. Accordingly, this pamphlet will use the terms ill-structured problem or complex operational problem rather than the term wicked problem.

g. Of the eleven characteristics of ill-structured problems, the most significant are the first two. Since there is no definitive way to formulate an ill-structured problem and since each one is unique and novel, a commander must formulate this type of problem himself. He will not find it listed in a training manual with a sequential list of tasks. However, as described in the first two characteristics, it is impossible to understand this type of problem without proposing a solution.

h. The issue is whether a commander should begin by analyzing the mission, or whether complexity compels the commander to first understand the operational problem, and then—based upon that understanding—design a broad approach to problem solving. The answer to this question depends upon the problem and the mission. If the problem is structured so that professionals can agree on how to solve it, and the mission received from higher headquarters is properly framed and complete, then it makes sense to begin with the analysis of the mission (breaking it down into specified, implied, and essential tasks). However, if the problem is unstructured (professionals cannot agree on how to solve the problem), or the mission received from higher headquarters is not properly framed (it is inappropriate for this problem), or higher headquarters provided no clear guidance (permissive orders), then it is crucial to begin by starting to identify and understand the operational problem systemically. This is one of the functions of operational art.

1-4. Operational Art

a. In the past, dealing with complexity was the writ of generals and admirals, usually performed by strategic leaders down to the commander of a theater of operations in charge of a campaign. Today, commanders at much lower levels must master these skills. Consider, for instance, the recent experience of Colonel Sean MacFarland, commander of 1st Brigade, 1st Armored Division. In June 2006, Colonel MacFarland was ordered from Tal Afar in northern Iraq to Ramadi in the west. “I was given very broad guidance,” he said. “Fix Ramadi, but don’t destroy it. Don’t do a Fallujah.”¹⁶ He had to determine how to forge relationship with the residents and take the city back from insurgents without launching a general assault. It was his responsibility to share his understanding of his piece of the overall problem with his superiors, not the other way around. He is not the only brigade commander who has used operational art. Some of what the average battalion commander does today is much more like operational art than tactics. Commanders at lower echelons will face ill-structured problems like this where the burden of understanding is squarely on their shoulders alone. Doctrine needs to adjust to this reality.

b. In contrast, had the North Atlantic Treaty Organization defended Western Europe from a Warsaw Pact attack in the 1980s, the commander of the Central Army Group would have exercised operational art and framed the problem for his subordinates. By the time orders trickled down to a brigade commander, like Colonel MacFarland, the situation paragraph of his division’s operations order would have provided a structured problem, and his challenge would have been simply one of planning for execution within the framework established by doctrine and the division operations order.

c. In the future, brigade and battalion commanders may fight short and intense battles or engagements within the context of large campaigns of operational maneuver, but these will be rare and brief occurrences. Future smaller scale battles and engagements will occur as small episodes within operations that are far more like extended campaigns—as is true in Iraq and Afghanistan today. This requires leaders at all levels to look deeper in time and grapple with

¹⁶ Jim Michaels, “Reclaiming Ramadi: Col.’s Achievement Could be Blueprint for Success in Iraq,” *Army Times*, 14 May 2007, p. 4. In 2004, Fallujah had also been infested with insurgent and Al Qaida in Iraq bases. The city was heavily damaged during the assault launched in November 2004 to clear the enemy from the city.

complex operational problems. In the context of wars amongst the people, commanders at all levels must fit the execution of short-term operations into a larger operational design, and this design must link their near-term actions to the strategic aim of the campaign. From a problem solving perspective, *operational art* is really the art of taking an unstructured problem and giving it enough structure so that further planning can lead to useful action.

d. In order to appreciate how this ought to be done, it is useful to consider the conceptual distinctions between *designing* and *engineering* as these terms are used in industry and business. Both activities devise ways to bring about a desired future, but they are cognitively different. This dichotomy provides useful insights for improving problem solving within the military (see figure 1-2).¹⁷

Designing	Engineering
– Problem-framing	– Problem-solving
– Start with a blank sheet	– Start with a coherent design or plan
– Questions the limits of existing knowledge	– Functions within the existing paradigm
– Questions assumptions and method	– Follows established procedure
– Conceptual	– Physical and detailed
– Develops understanding	– Develops products
– Paradigm setting	– Paradigm accepting
– Complements planning, preparation, and assessment	– Patterns and templates activity
– Output: a broad approach to problem solving (a design)	– Output: detailed plan for action (blueprints)

Figure 1-2. A Comparison of the Cognitive Processes in Designing and Engineering

(1) Designing. Designing focuses on learning about an unfamiliar problem and exploits that understanding to create a broad approach to problem solving. Starting with a blank sheet, designers frame the problem and give it structure. An architect or industrial designer has a client, but often they are not aware what the client truly wants. The client may have provided a statement of work, but this is often incomplete—there are things he wants but either forgot to ask or did not know what to ask for. If the client is a committee, say for the construction of a new hospital or the design of a new freeway, there are often disparate needs that must be taken into account in the final design. Designers learn about the problem through discourse with the client in which the designer is constantly questioning his assumptions and probing the limits of his knowledge. Designers simultaneously build an understanding of the problem through the creation of a conceptual solution or design. In each field, designers usually record their design in some kind of graphic representation. The designer can use graphic models to explain the structure of non-visual problems and solutions as well.

¹⁷ Donald A. Schön, *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (San Francisco: Jossey-Bass Publishers, 1987), pp. 18-19 and 41-42.

(2) Engineering. The work of the designer complements the work of the engineer in that it establishes the conceptual approach, or paradigm, for the solution to the problem. The engineer usually starts work with a design and—operating within this existing paradigm—follows established procedures to create blueprints, which are a detailed plan of action. The engineer’s work is very detailed and physical whereas the designer’s is more conceptual. The designer may use heuristics, such as rules of thumb, to estimate the size of a steel joist, but the engineer must calculate the size precisely, using detailed analytical problem solving methods. The engineer’s blueprints are detailed plans that translate a design into execution.

e. Military planners perform the cognitive functions of both designers and engineers. Military planning normally includes some elements of both, but the degree of one or the other depends upon the complexity and structure of the problem. Thus, the application of operational art to solving complex problems contains more of the cognitive elements of design, whereas the detailed planning for execution relies more heavily on the cognitive functions of engineering (see figure 1-3).

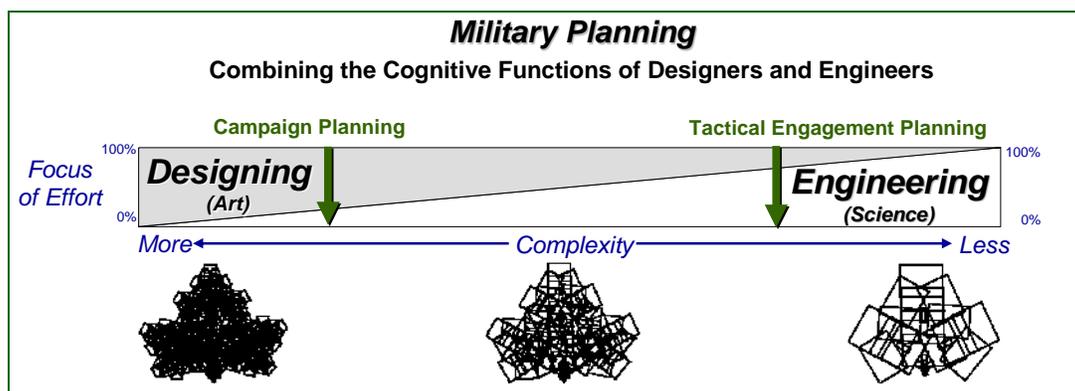


Figure 1-3. Military Planning

f. Nevertheless, the conceptual distinction between designing and engineering is useful to show how our existing planning processes—to include those used for campaigning—are today derived from methods that align closely with the cognitive processes used by engineers. It is technical, rational, and systematic, guided by a confidence in optimization. In other words, planning processes used today assume that there exists an optimal solution and that we can find this solution by applying the established rules and techniques of our profession. These rules and techniques are based upon historical experience, research, and a clear understanding of our own capabilities. Detailed planning is heavily analytical and requires more independent and functionally specific work. The staff works on the functional components of the plan—maneuver, fires, engineering, transportation, close air support, medical, naval gunfire, and so forth—in relative independence guided by the commander, chief of staff, or chief of plans, and in coordination with other functional staff sections as required. On a large staff, the planning process has greater structure and rigidity because it serves to choreograph the activities of many different functional teams. This natural linearity is reinforced since the products of one step are the input for the next.

g. However, the characteristics of modern warfare demand campaigning forces have the ability to perform the cognitive functions of designers. When the hardest part of the problem is

identifying and describing the problem, engineering functions alone are inadequate and design is essential. Otherwise, absent a design process, military planners will default to doctrinal norms, building plans based upon familiar patterns rather than upon an understanding of the particular situation and how individual actions contribute to the overall goal.

h. Designing is creative and is best accomplished through discourse. *Discourse* is the candid exchange of ideas without fear of retribution that results in a synthesis¹⁸ and a shared visualization of the operational problem. The goal of the commander, subordinate commanders, staff, and other stakeholders is to consider and synthesize many different perspectives and ideas. Groupthink is the antithesis of healthy discourse. A zero defects command climate will throttle learning because successful discourse requires candor and the free yet mutually respectful competition of opposing ideas. Participants must be free to take minority viewpoints based upon their expertise, experience, and insight; this includes sharing ideas that contradict the opinions held by those of higher rank. Design is an inherently iterative and heuristic process. Design, as used to plan a military campaign, produces two main products:

(1) First, design seeks a *systemic* and *shared* understanding. It seeks to explain the qualitative relationships embedded within complex problems, including their history, dynamics, propensity, and trends. Nevertheless, it recognizes that complete knowledge is not achievable, and therefore constantly questions the limits of existing knowledge and prevailing public myths or paradigms. Commanders may have difficulty agreeing on the structure of a complex operational problem, but they must agree on a shared starting hypothesis before they can develop solutions. In other words, political leaders and commanders at all levels must have a shared understanding of the situation. Within CACD, however, the term *commander's appreciation* refers to the process of understanding a situation.

(2) The *noun* design will refer more narrowly to the broad problem solving approach, which is the second product of designing and is based upon a systemic and shared understanding. The campaign design arranges operations in space and time to achieve desired outcomes, and it identifies—broadly speaking—the required capabilities and resources. A campaign design has a long temporal horizon, because it focuses on achieving the strategic aim.

(3) However, as noted above, understanding complex operational problems and conceiving solutions are identical and simultaneous cognitive processes. Thus, CACD recognizes that as commanders struggle to understand complex problems, they are simultaneously generating ideas about possible solutions. Nevertheless, in order to coherently describe commander's appreciation and campaign design in written form, one must come before the other. Since a commander must answer the question "What is the problem?" before asking "What must be done about it?" the elements of CACD are described in that order. However, practitioners must keep in mind that formulating the problem and creating the solutions are complementary and simultaneous to some degree. Even when commanders and planners shift

¹⁸ *Synthesis*: The combining of the constituent elements of separate material or abstract entities into a single or unified entity. Note that synthesis is the opposite of *analysis*. To understand a complex adaptive system, one must first synthesize a base of knowledge from an examination of the components of the system and their various relationships. The system *as a whole* determines how the component parts behave. It is the Aristotelian concept that "The whole is more than the sum of its parts."

focus from understanding to solving and begin to form a coherent campaign design, they will still learn about the problem. This may require amending earlier judgments and decisions throughout the process. CACD is iterative and the order in which the “steps” have been arranged on paper must not constrain a commander from approaching them in a different sequence or iteration in practice.

i. These products—the commander’s appreciation and the campaign design—are the major components of a campaign plan and are the expression of operational art. They establish the framework, or structure, necessary for detailed implementation planning. Plans and orders for implementation have a closer temporal horizon than a campaign plan. In the context of a campaign, it may not be feasible to construct a detailed plan for the latter phases. Planning for implementation reduces the design into a detailed series of executable missions that directly affect allies, adversaries, and the environment.

j. This difference in function between a campaign plan and a detailed order or plan for implantation highlights one last point about operational art. Commanders use the operational art to resolve the natural tension between the formulation of strategy and planning for its implementation.

(1) Strategy is “the art and science of developing and employing instruments of national power in a synchronized and integrated fashion” to protect or advance national interests.¹⁹ The situations confronting strategic leaders and the content of their strategies are unique. Historical analogies can help leaders understand a situation and craft a strategy, but sadly no two events are ever exactly alike. It is the differences that make careless use of superficially compelling analogies risky.²⁰ Since strategic problems are also ill-structured, the template that worked last time cannot be reused. Thus, the *ends*, *ways*, and *means* of strategy must be crafted anew for each case. However, ambiguity pervades strategy and the language with which it is articulated.²¹ Unlike tactics, where professional terms are carefully defined, strategic terms are subject to further negotiation and future redefinition. Today’s description of strategic failure may be tomorrow’s “decent interval.” Strategy never approaches the clarity required for execution.

(2) For example, the Combined Chiefs of Staff directive to Supreme Commander, Allied Expeditionary Force for Operation OVERLORD directed General Dwight D. Eisenhower to “enter the continent of Europe and, in conjunction with the other United Nations, undertake operations aimed at the heart of Germany and the destruction of her armed forces.” Nevertheless, it did not say which beaches to assault, how many beaches to assault, how many divisions to use in the first wave, how to shape the theater prior to the invasion, or once ashore whether to advance into

¹⁹ The official joint definition ends with this phrase: “to achieve theater, national, and/or multinational objectives.” In this paper, theater is used strictly for Theater of Operations, whereas in the joint definition of strategy, it is used as a synonym for a combatant command area of responsibility (AOR). Additionally, this pamphlet uses the term “aim” rather than “objective” at the strategic level, implying a greater degree of ambiguity. The term “objective” implies a condition that must be achieved exactly.

²⁰ Richard E. Neustadt and Ernest R. May, *Thinking In Time: The Uses of History for Decision Makers* (New York: The Free Press, 1986), pp. 34-57.

²¹ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (New York: Frank Cass, 1997), pp. 6 and 10.

Germany on a broad front or with a narrow thrust. Strategy does not approach the precision and level of detail required for tactical execution. There is a cognitive tension between strategy and its execution in a campaign, and it is the role of the commander employing operational art to resolve this tension through design, discourse, and grappling with complex operational problems.²²

k. The following sections focus on the core of the commander's appreciation—problem framing—and its military use during a campaign.

1-5. Problem Framing

a. Due to the pervasive ambiguity associated with complex operational problems, it may not be clear to a commander what problem he must solve or how best to solve it. The initial strategic guidance may be prompted by symptoms that are unacceptable to the Nation, but at that moment the dynamics of the root problem may be a mystery simply because of their complexities. Therefore, his first task is to *understand the problem* in order to visualize possible solutions.

b. In order to visualize what must be accomplished, the commander must first develop a comprehensive understanding of the situation within which his subordinate organizations will operate. Problem framing establishes an initial hypothesis about the character of the friendly, adversarial, and wider environmental factors that define the situation. Problem framing also explores cultural narratives, institutional histories, propensities, and strategic trends in order to postulate a general structure of the factors and their relationships. This hypothesis will be incomplete at first, but will provide a basis from which the commander can visualize the design of his campaign and begin operations to uncover the true nature of the problems he must solve. The hypothesis thus defines the art of the possible, warns what may be unachievable, and anticipates how the situation might evolve as operations are executed.

c. Framing the problem supports a commander's discourse with his superiors to define the problem and expectations regarding its resolution clearly. The effective application of military power requires that understanding exist between the political leadership of a state or coalition and the leaders of its armed forces in the coordination of policy and the use of power to enforce it. Problem framing also establishes a mutual understanding of the situation within which a fielded force will operate. A mutual understanding of the problem and its context empowers leaders at every level to adapt their operations rapidly toward a common end. This understanding is the basis for unity of effort at every level of command and across all instruments of power.

1-6. Assessment and Reframing

a. The duration of a campaign makes it possible for strategic aims to change during execution, usually in response to emergent conditions—conditions that did not exist at the outset. Even if these conditions do not change strategic aims, they may create an entirely new situation, somewhat different from the one the command originally framed. Such change is expected from

²² Naveh, pp. 7, 9, and 309-310.

a complex adaptive system. Recent adversaries have demonstrated the ability to learn from recent operations and adapt with remarkable speed.

b. Thus, the initial framing of the problem establishes only a starting hypothesis and a baseline for learning about the problem as the force operates. It sets the parameters for reframing—readjusting the commander’s appreciation of the problem—as the commander’s understanding expands and the situation changes over time. The requirement for campaigning commanders to act in order to learn and the expectation that the situation will change in response to human activity makes continuous assessment and rapid recognition of the changing conditions essential.

c. Assessment of ongoing operations to solve the problem provides opportunities to learn on five levels:

- 1) How to execute the planned course of action for a specific operation;
- 2) Whether another course of action needs to be adopted;
- 3) Whether the operational design based on the problem frame is producing results;
- 4) Whether the problem framing needs adjusting; and
- 5) Whether the learning mechanisms of the organization are tuned to the particular operational problem.

d. Current joint and Army doctrine for assessment address the first and second levels listed above.²³ Learning on the third, fourth, and fifth levels is not covered adequately in current doctrine and is the purpose of reframing in CACD.

1-7. Campaigning

a. Campaigning Tenets. The following principles should guide any unit charged with planning or executing a campaign:

(1) It is the *cognitive function* of a commander using operational art to receive permissive and ambiguous strategic or operational guidance and produce the types of carefully-articulated orders that direct successful tactical actions. Commanders who execute this function must create an operational design that provides sufficient context and structure for implementation and action.

(2) The *planning horizon* of the operational design should extend to the achievement of the strategic or operational end state at the conclusion of the campaign. The horizon of a campaign planner cannot be limited to a unit’s rotation date or the end of fighting, but instead must be fixed to the achievement of strategic aims and the implementation of a self-regulating solution. Campaign design must consider with equal diligence the phases of a campaign where

²³ See JP 3-0, *Joint Operations*, pp. IV-30 through IV-34 and FMI 5-0.1, *The Operations Process*, pp. 5-1 through 5-6.

military means are ascendant and those where the activities of civil agencies dominate.²⁴ Achieving aims in wars amongst the people requires years; there is little possibility in this type of war for a rapid decision. Thus, a campaign design must look long term, whereas plans that implement the design will have a closer horizon and describe near-term action.

(3) The complexity of the situation and the duration of a campaign make learning and adapting essential for achieving operational goals. Campaigns confront ill-structured problems that defy complete understanding and thorough knowledge. Therefore, campaigning commanders must continually *act in order to learn*. Just as important, they must create a system for learning as they act. Action must achieve objectives and improve the commander's appreciation of the situation. This idea is developed in more detail in the sections dedicated to problem framing and reframing below.

(4) Campaigning must also embrace and implement a comprehensive approach to solving problems. *Unified action* requires a shared approach among those wishing to prevent or resolve crises, which predisposes individuals and organizations to work proactively, to share their understanding of situations, and to collaborate wherever possible. This approach must harness and enable the capabilities of both the U.S. Government interagency and coalition partners to provide a "best fit" of capabilities, cultures, and outlooks as the solution to the operational problem is pursued.

b. Functions of Campaign Design. Given the experience of the UNIFIED QUEST investigations of the past three years, campaign designs of the 21st century must account for the following five functions:

(1) Identify the combination of parallel and sequential objectives that lead to mission success and define the way the mission will be performed.

(2) Identify the potential points of influence within the commander's appreciation of the situation that provide the best potential for advantageous action, images, or messages to gain these objectives. What are the relationships and tendencies that can be exploited? What is the line of least expectation or least resistance?

(3) Identify the ways and means for learning as the command grapples with the problem. Military organizations often devise ways to assess and learn what they need to know based on past experience. It is far more difficult to devise ways to learn about unfamiliar, complex, and dynamic problems. It is important to be skeptical and prepared to adapt learning approaches rapidly. This function of campaign design is always important, but it is absolutely essential for unstructured problems.

(4) Determine, broadly speaking, the organizing logic of the command—how the command, directs, supports, and understands operations—to ensure unity of effort and the

²⁴ The campaign design must address the following types of transitions that may occur depending upon the context of the conflict: the transition from military to civilian control, the transition from civilian control to international control, and the transition from international organizations to indigenous control. This series of transitions requires a clear understanding of the time required to execute them to an acceptable level of competency.

support required to attain campaign objectives. The design for the solution to the problem must consider how to best integrate the capabilities and interests of joint, interagency, and multinational participants. It must develop approaches for obtaining support and assistance from these sources beyond the command to allow the command to accomplish assigned military objectives as well as support the orderly, efficient transition from military to civilian primacy.

(5) Address the principal “message” that actions and words in combination are intended to convey to various audiences necessary to create an enduring solution to the strategic problem.

c. The next chapter describes an approach for gaining an appreciation of an operational problem. Chapter 3 discusses operational design.

Chapter 2 Commander’s Appreciation

“If I were given one hour to save the planet, I would spend 59 minutes defining the problem and one minute resolving it.”
—Albert Einstein

2-1. Purpose

a. Gaining an appreciation for what must be done and solving the problem presented to the commander requires a comprehensive understanding of the situation within which his subordinate organizations will operate. *Appreciation* is the act of estimating the qualities of things and giving them their proper value. It is essentially an understanding of the nature or meaning or quality or magnitude of the situation before you. For the purposes of military operations, an “appreciation” allows the commander to design, plan, execute, and—most importantly—adapt his actions within the operational environment, through learning about the nature and context of the problem as the campaign unfolds. Achieving understanding requires two activities: framing the problem and mission analysis. This chapter describes a process for these activities.

b. The process of gaining an appreciation for the “whole” problem should not be implemented in a checklist fashion. It will require the inquiry to loop back to an earlier activity. The commander may choose to reexamine several aspects of the situation in an iterative manner until satisfied that he has gained a sufficient appreciation of the problem to develop a campaign plan. The exact format of the appreciation and subsequent planning guidance will vary based on the commander and the situation.

c. It is important to remember that understanding each unique problem requires a unique approach, and may not have a solution in the conventional sense. As such, this pamphlet provides an approach for examining and iteratively solving complex operational problems.

2-2. Initiation

a. The development of a military campaign is initiated when an appropriate authority recognizes the likelihood of employing military forces in response to a potential or emerging problem. At the strategic level, that authority—the President or the Secretary of Defense—initiates the development of a campaign or major operation by directing the development of military options. The Joint Strategic Capabilities Plan, Contingency Planning Guidance, and related strategic guidance statements serve as the primary guidance to begin contingency planning. In addition, combatant commanders may initiate planning on their own authority when they identify a planning requirement not directed by higher authority.

b. Military options normally are developed in combination with, or in support of, other nonmilitary options so that the President can respond with all the appropriate instruments of national power. Achieving unity of effort through unified action is only possible if based upon a shared appreciation of the problem and a common approach to problem solving. This demands that leaders from other agencies and nations participate fully in CACD.

c. The commander's first responsibility is to gain an appreciation for the nature and scope of the problem he has been assigned to address.

2-3. Problem Framing

a. Framing is the act of establishing the context of a situation within which a commander must act to realize strategic aims by examining the assigned problem from multiple perspectives. The art of framing the problem is the art of seeing the essential and relevant among the trivial and irrelevant; penetrating the logic of the broad received mission and its messy contextual situation; and reshaping it into a well-enough structured working hypotheses. It requires commanders to inquire into the nature or character of the factors—friendly, opposing, and the larger environmental—that define the situation into which his command will be thrust. Framing the problem establishes a baseline for developing a mutual understanding of a problem and postulates a form, constitution, or general structure of the factors and their relationships. It further seeks to establish the initial conditions from which the command begins its operations and provide some insights as to how the problem might evolve or trend during the campaign.

b. Ultimately, the initial framing of the problem will set the conditions for “learning” about the problem as the force operates. The presumption is that a commander will not be able to understand the problem fully before beginning operations to solve it and will learn more about the true nature of the problem as he operates. The initial problem frame sets the parameters for reframing—refining or redefining the problem—as the commander's understanding expands and the problem changes over time. Expanded understanding allows the commander to exploit emerging opportunities more rapidly and effectively to meet his objectives.

c. Framing the problem serves two additional purposes. First, it supports the commander's discourse with his superiors to define the problems clearly and identify expectations regarding its

possible resolution.²⁵ The effective application of military power requires that a shared understanding and mutual respect exist between civil representatives of the state and the leaders of the armed forces.²⁶ Properly framing the issues for examination, from the perspective of both policy makers and executing commanders, serves as the key and essential step to setting this understanding in place before military power is applied. Second, framing the problem establishes a mutual understanding of the situation within which the force will operate. A mutual understanding of both the problem and its context empowers leaders at every level to rapidly adapt their operations toward a common end. This understanding becomes the basis for unity of effort at every level of command and across all instruments of power.

d. Framing the problem requires a comprehensive and systemic approach to synthesizing the information and issues relevant to the problem, absent preconceived expectations regarding the method of its resolution. Most importantly, this process describes the initial conditions upon which campaign action will be predicated. Initially, the description of these conditions will be incomplete, but will provide a base from which the commander can design his campaign and begin to operate and uncover the true nature of the problems he must solve. Framing the problem thus defines the art of the possible, warns what may be unachievable, and anticipates the potential evolution of the problem as operations are executed (see figure 2-1).

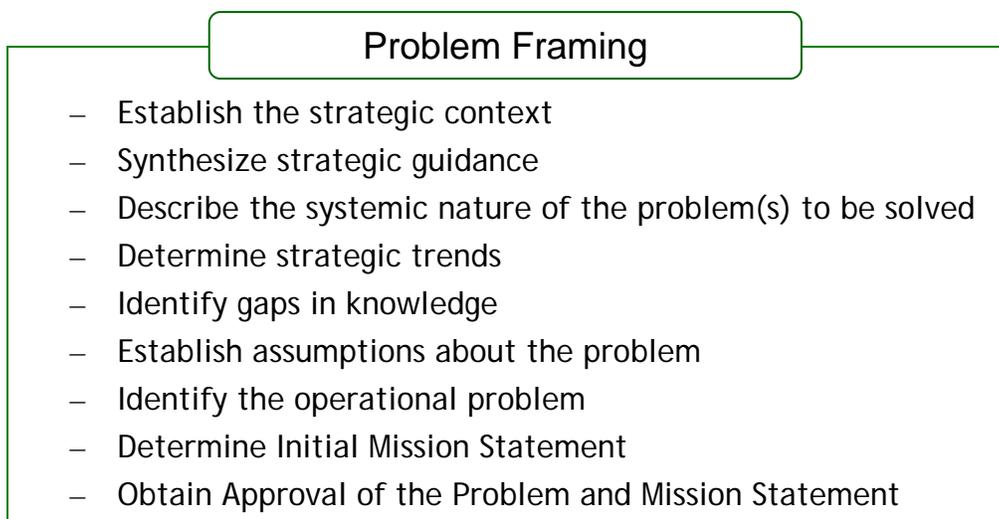


Figure 2-1. Problem Framing Tasks

e. The following actions describe a proposed approach to problem framing:

²⁵ Perhaps one of the most important lessons of our recent military history—including Korea, Vietnam, Beirut, Bosnia, Somalia, and Iraq—revolves around establishing expectations regarding both the efficacy of military force and the specific application of military force to solve problems of national import. It is a discussion that must be undertaken by senior military leaders in order to provide the best military advice to the nation’s civilian leadership before forces are committed.

²⁶ Naval War College, *Sound Military Decision* (Newport, Rhode Island: Naval War College Press, 1942), p. 17.

(1) Establish the strategic context. To set the problem, the first task is to establish the context²⁷ of the emerging problem(s)²⁸ that must be solved. Context establishes the reasons why the problem came to exist, its history, and how it may develop. Consider and define both the domestic and international context: political and/or diplomatic long- and short-term causes of conflict; domestic influences, including public will, competing demands for resources, and political, economic, legal, and moral constraints; and international interests (reinforcing or conflicting with U.S. interests, including positions of parties neutral to the conflict), international law, positions of inter-governmental organizations, and other competing or distracting international aspects of the situation. When considering the strategic context, the commander should consider the following questions:

(a) What is the history of the problem? What is its genesis?

(b) Who are the parties interested in the problem and what are the implications of likely outcomes?

(c) What caused the problem to come to the fore?

(d) Why is this emerging problem important to the nation's strategic leaders?²⁹ Determine how they "see" the problem. For example:

- Are national interests and ideals at stake?
- What are the domestic political considerations for taking action?
- What are the economic considerations of action?
- Are there treaty obligations that require or block the ability to act?

²⁷ *Context*: the set of circumstances or facts that surround a particular event, situation, etc. Context as described by Mao Tse Tung. "Thus the different laws for directing different wars are determined by the different circumstances of those wars—differences in their time, place, and nature. As regards the time factor, both war and its laws develop; each historical stage has its special characteristics, and hence the laws of war in each historical stage have their special characteristics and cannot be mechanically applied in another stage. As for the nature of war, since revolutionary war and counterrevolutionary war both have their special characteristics, the laws governing them also have their own characteristics, and those applying to one cannot be mechanically transferred to the other. As for the factor of place, since each country or nation, especially a large country or nation, has its own characteristics, the laws of war for each country or nation also have their own characteristics, and here, too, those applying to one cannot be mechanically transferred to the other. *In studying the laws for directing wars that occur at different historical stages, that differ in nature and that are waged in different places and by different nations, we must fix our attention on the characteristics and development of each, and must oppose a mechanical approach to the problem of war.*" Mao Tse Tung, *Problems of Strategy in China's Revolutionary War* (Peking: Foreign Languages Press, 1965).

²⁸ The singular form of problem is used throughout this document for simplicity. However, achieving strategic aims may require solving several interrelated problems. Actions taken with regard to one problem will affect the nature or scope of others.

²⁹ Within the context of joint operations conducted by the armed forces of the United States, *strategic leaders* include the President and Secretary of Defense, working through the Chairman of the Joint Chiefs of Staff. In the context of multinational and interagency operations, other department secretaries, agency directors, and national leaders will also be included.

(e) Why do strategic leaders believe this problem requires a “military” solution?

(2) Synthesize strategic guidance. The synthesis of the strategic guidance within the current context allows the commander to generate discussions with strategic leaders regarding their strategic guidance. Together they must identify logical boundaries for the problem by establishing its essential relationship to the Nation’s strategic aims. This activity includes:

(a) Determining the national strategic leaders’ or higher commander’s purpose for assigning the objectives to the command. This requires the commander to synthesize national security and military strategic directives as well as appropriate guidance in alliance and coalition directives—including long- and short-term objectives for problem resolution—in order to determine the relationship between the assigned objectives and strategic aims. JP 5-0 recognizes “the importance of *understanding strategic purpose* as early as possible in the planning process. Strategic guidance should provide a clear understanding of purpose, but *could require interpretation and clarification* as planning progresses.” This statement emphasizes the need for the commander to discuss and synthesize guidance he has received with his superiors in order to develop the best military advice for solving the problem.

(b) Determining how the guidance provided by National strategic leaders relates to established policy.

- Do the currently tasked strategic aims/objectives vary with previously established policy and objectives? If so, why?
- What are the points of tension between any identified variances?
- What policy objectives or statements serve as potential limitations to meeting current strategic guidance?

(c) Determining if guidance or established policy limits our ability to act. Are there authorities, new or expanded, we should seek to exceed current limitations?

(d) Determining the desired strategic ends. What strategic aims define the strategic conditions that constitute success?

(e) Determining the expected outcomes in terms of time and resources.

(3) Describe the systemic nature of the problem to be solved. This description includes the nature of the adversaries, friendly forces, and the environment in which the campaign will occur. This step includes identifying the broad constellation of the constituents, and the relationships between them, within which the problem can be scoped, and its logical limits defined. *The critical task is to create a narrative that explains the problem that must be addressed to achieve strategic aims*. This narrative should identify the constituents and the qualitative relationships between them. Key components include:

(a) Defining the factors, constituents, and relationships, bearing on the problem. The relationships must be defined, to the extent possible, from the points of view of the constituents under consideration:

- Friendly forces, organizations, and entities.
- Adversaries and those opposed.
- Neutrals—both with and without interests relative to the problem at hand.
- Unknowns—those with clear interests and influence but whose intentions are unknown.

(b) Defining the interests and strategies of each constituent, as they understand them, and how they relate—positively and/or negatively—to one another, as well as to those of the U.S. Government.

(c) Defining/synthesizing the problem in terms of its constituents' systemic components:

- How are the constituent parts of the problem related and influenced in terms of capabilities, interests, and intent, from the perspective of culture, politics, social infrastructure, economy, military power, and information?
- What is the organizing “logic” of each of these systems?
- What are the power groups and functional components of these systems?
- How do these systems relate to one another? Within a specific constituent, how are these systems related to the constituent's strategic outlook?
- How do these systems regulate themselves? What keeps them stable?
- How do these systems sustain themselves?
- Which of these systemic components contributes to the effective generation, projection, and use of power in opposition to our interests?

(d) Describing the tensions in these relationships and identify opportunities for exploitation, positively or negatively, during the conduct of the campaign.

(4) Determine strategic trending. This activity involves describing how the strategic situation is expected to evolve over time. What are the possible “futures” that could unfold based on current understanding?

(a) What are the logical trends of the situation?

- How do we expect it to evolve or unfold without intervention?
- What aspects of these trends are favorable?
- What aspects are unfavorable?

(b) Based on the current trending, what constituents within the system have the potential for transformation or exploitation (to our advantage)?

- Which trends should the command reinforce?
- Which trends should the command stabilize?
- Which trends should the command reverse, redirect, or transform?

(5) Identify gaps in knowledge. Based on the previous actions, this task identifies what the commander does *not* know, but should know in order to understand the operational problem more fully and direct operations effectively.

(6) Establish assumptions about the problem. Based on gaps in knowledge the commander must establish assumptions in order to bound and structure the problem. Assumptions bridge the gap between what we think we know and what we think we do not know to design a campaign. They are a manifestation of informed professional judgment that allows the process of design and subsequent planning to continue in the absence of a complete understanding of the operational problem. Assumptions are critical elements of information for the commander that must be identified explicitly, then validated or rejected, as the design, planning, and execution of the campaign unfold.

(7) Identify the operational problem. Based on the tasks above, the commander must identify the critical factors of the problem that must be transformed in order to satisfy strategic aims or objectives. Bounding the problem this way requires the commander to distill the essential components from the broad set of factors that have a bearing on the problem in order to focus the command's efforts to the best effect.

(8) Determine initial mission statement.

(a) Express the mission in terms of who, what, when, where, and why (purpose).

(b) Frame the mission with a clear, concise statement of the essential task(s) to be accomplished and the purpose(s) to be achieved.

(9) Obtain approval of the problem and mission statements. The final task in framing the problem requires the commander to obtain approval of the problem statement, the rationale for the development of the problem statement, and the initial mission statement from his superior. At this point in time, the command would be ready to submit the mission for approval to the Secretary of Defense or next higher commander.

2-4. Mission Analysis

a. Mission analysis is conducted once the problem has been appropriately framed and the commander has obtained approval of the mission statement. Unlike the traditional mission analysis described in the military decision making process—this mission analysis is just that—an analysis of the mission. This process does not result in a restated mission as the mission has been approved as a result of framing the problem.

b. Analysis is the first step in a process towards understanding how the problem might be solved. It focuses on a deconstruction of the operational problem, within its unique context to determine the “who, what, where, when, and how” of solving it. The ultimate goal of mission analysis is to define or identify where there is potential for meaningful and productive action that supports resolution of the problem and the realization of national strategic aims.

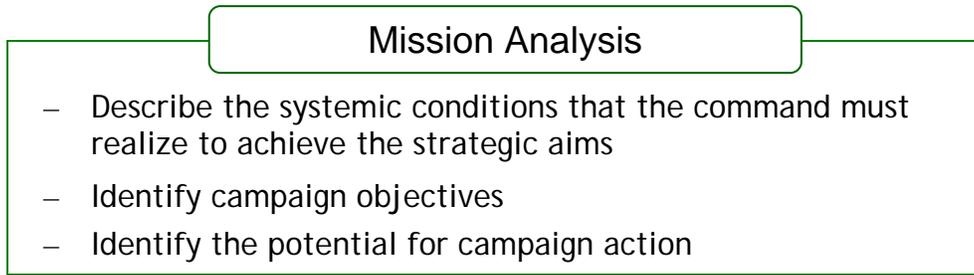


Figure 2-2. Mission Analysis Tasks

c. Mission analysis is focused on determining what the command needs to do in order to be successful in light of the approved mission. The purpose of this process is to discern three elements needed to build a campaign plan: a description of the conditions that define campaign success, an identification of the campaign objectives that define how the force will create the desired conditions, and an identification of the potential points of influence or transformation within the problem that support achieving campaign objectives. (See figure 2-2 for mission analysis tasks.) Key tasks are:

(1) Describing the systemic conditions that the command must realize to achieve the strategic aims. This description should include the desired end state³⁰ conditions for the campaign—the desired “states” of the critical factors described in the framing of the problem that would allow the establishment of a self-regulating solution. *Operational end state* is defined as a favorable, self-regulating situation within the campaign’s operational space (theater of operations, joint operations area, area of responsibility, etc.) that is realized by the campaign which contributes to the overall achievement of strategic aims. The description of the systemic conditions should also describe the establishment of any intermediate conditions the commander may feel necessary to support the creation of the desired end state. These conditions initially define campaign success.

(2) Identifying campaign objectives. Define what must be done within the campaign to meet the designated conditions and achieve campaign success. These objectives describe how to exploit or transform the situation to achieve the assigned strategic aims and create the desired end state conditions. Objectives may refer to specific constituents of the problem, relationships between constituents, or the larger environment within which the aforementioned exist. As the commander designates the objectives of the campaign, he must carefully consider the desired and undesired effects of pursuing these objectives.

(3) Identifying the potential for campaign action. Determine the potential points of influence or transformation within the system. This effort is based on the systemic synthesis of the operational problem that was created during problem framing. It considers all the systemic constituents of the problem—friendly forces, organizations and entities, adversaries, those opposed, neutrals, and “unknowns”—in an effort to identify where the potential for both productive and unproductive action exists. Examine the following:

³⁰ The operational end state is the point at which a transition begins—a transition that defines the scale and nature of military involvement in the effort towards achieving the strategic aims.

(a) What are the constituencies or components of the problem we want to influence as we operate? Describe the constituents/components of interest within the system. The intent is to narrow the strategic framing of the problem to an operationally manageable subset, by describing the following factors:³¹

- The critical capabilities of these constituents. What do they “need” to accomplish their desired end state?
- The critical requirements that allow these constituents to pursue and achieve their goals. What condition, resource, or means resident within or complicit with the constituent allow it to use its capability to best effect?
- Conditions, resources, or means that are vulnerable to our efforts to transform or exploit them. Which of the capabilities have the potential for transformation or exploitation to suit the requirements of the campaign? Can they be affected? If so, how?

(b) What do we *not* know (things we must learn) or what must we confirm to operate effectively over time? The commander must describe the risk associated with these gaps in knowledge and understanding. These gaps become the basis for crafting commander’s critical information requirements (CCIR) across the entire force. CCIR define the types and scope of information the commander needs in order to develop a complete appreciation of the problem.³² CCIR must change and adapt as the force operates over time to reflect the growth in knowledge.

d. Having established the commander’s appreciation of the problem, the commander, his superiors, subordinate commanders, staff, and interagency and multinational partners will have a sufficient understanding to begin development of a broad approach for its resolution. This approach will be embodied in the campaign design.

Chapter 3 Developing a Campaign Design

3-1. Campaign Design

a. The campaign design must account for attaining the strategic aims assigned to the organization, improving prospects for enduring stability defined as a self-regulating solution to the strategic problem. This may include the transition from military to civilian control, transition

³¹ Note that CACD describes the notion of critical requirements and critical capabilities slightly differently than JP 5-0, which is based on Dr. Joe Strange’s model for analyzing a center of gravity. It does not presume there is necessarily a single center of gravity, in the classic sense, which will allow a complex problem to be solved in one decisive act. It presumes there is no one single source or power, but does presume that the constituents of the problem require certain capabilities to pursue their aims and that every constituent is vulnerable in some way and can therefore be exploited over time. See Joe Strange, *Centers of Gravity and Critical Vulnerabilities*, 2nd ed. (Quantico, Virginia: Marine Corps University, 2002).

³² The purpose of CCIR within CACD is different than CCIR used in short-term tactical operations. See the discussion of CCIR in paragraph 3-1d(3)(c).

from civilian control to international control, and the hand over from international interests to indigenous control.

b. The guidance for campaign design must provide sufficient direction to staff, subordinate commanders and parallel efforts (that is, efforts of the remainder of the interagency) to allow them to begin developing the campaign plan and supporting operations plans (joint forces) and parallel strategies or plans (other agencies) to accomplish the designated strategic aims.

c. Guidance for campaign design will provide a description of the overall approach to achieving campaign objectives. It reflects the commander's intent for developing operations in support of campaign objectives; the proposed structure/framework for operations to synchronize subordinate and parallel efforts; the relative timing and importance of interim objectives; and, finally, the description of how the campaign will achieve the strategic aims. (See figure 3-1 for campaign design tasks.)

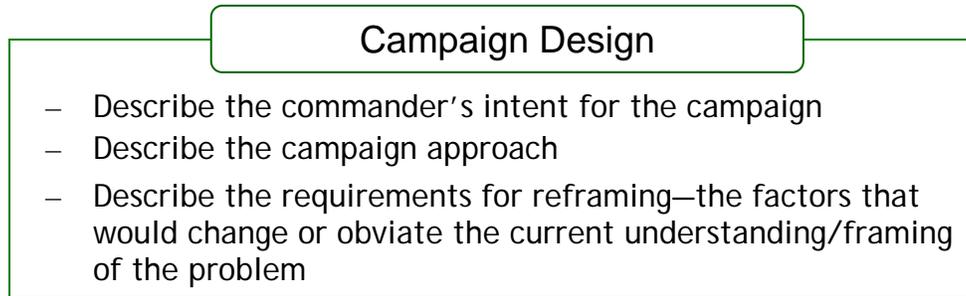


Figure 3-1. Campaign Design Tasks

d. The following actions describe an approach to campaign design:

(1) Describe the commander's intent for the campaign. The commander's intent reflects the "what" and the "why" of the campaign in broad terms and provides subordinates the ability to adapt their operations over the life of the campaign to accomplish its goals. It should also describe the "risk" that is acceptable to the commander. The design of the campaign should reflect this. A proposed format for the commander's intent is located in appendix B.

(2) Describe the campaign approach. Describe in broad terms how, where, who and, in terms of sequence, when the command will exploit or shape the potential for transforming the system toward the endstate desired.

(a) Describe the "start state" conditions from which efforts in the campaign will proceed.

(b) Describe the concept for arranging operations in time and space to induce the desired end state conditions. State priorities for initial action in time and space. This should include the sequencing of interim objectives in operations to synchronize efforts within the campaign.

(c) Describe the requirements of other parallel efforts, those of the remainder of the interagency, allies, and even neutral actors that could support the campaign objectives.

(d) Describe how the campaign must support the actions of other parallel efforts—what can the command do to make these efforts value added in terms of achieving campaign success?

(e) Describe how the command will organize and direct the campaign. Consider, as a minimum, the following: the composition and functions for headquarters or organizations charged with accomplishing operational objectives; integrating and synchronizing coalition and international efforts during the course of campaign; and likely transfers of responsibility (transitions) between controlling entities for various aspects of the campaign—military to civil to international to indigenous control.

(f) Describe how the command will support and sustain the efforts in the campaign. At a minimum, describe the efforts needed to project and sustain potential elements of power, combat and noncombat, into the areas of operation.

(g) Describe the critical strategic campaign messaging—the perceptions that must be embedded within the consciousness of each critical constituent to ensure there is a lasting and self-regulating solution to the problem.

(3) Describe the requirements for reframing—the factors that would change or obviate the current understanding/framing of the problem.

(a) Change and adaptation will and must occur for the campaign design to remain relevant to the assigned strategic aims. A significant issue for the commander during a campaign is to determine when his understanding of the operational problem might change—either because he has learned more or because the problem itself has fundamentally changed.

(b) The commander's framing and understanding of the operational environment will evolve as his forces conduct operations over the duration of the campaign. The key point of art for the commander is to determine when his understanding has developed enough to allow him to make a meaningful adaptation of the campaign design or to scrap the design in favor of a more effective approach.

(c) This approach to defining information requirements is different from what one would normally see as CCIR for short-term tactical operations. They are not focused on supporting the campaigning commander's ability to act, but rather his ability to understand, learn, and adapt. These are the considerations that would cue the commander to rethink his understanding of the operational environment, and hence rethink how to solve the problem(s). The presumption is twofold: first, the problem itself is likely to change as the command operates to solve it and, second, the commander can identify aspects within his framing of the problem that would require him to rethink his approach to solving the problem—to learn through focused, deliberate action.

(d) What would cause the commander to reframe?

- What would change the commander's vision or understanding of the problem? What causes the commander to redefine the problem?

- What conditions define and/or bound what is acceptable within the current design? In other words, given the current framing of the problem what outcomes or actions are reasonable within expected futures?
- What event or change indicates an emergence outside the range of the reasonable expectations? What cues the commander to know that something is different in his operational space?
- What causes the commander to refine his approach?
- How does the commander determine if the problem frame is correct, but the design needs to be adjusted?
- What lets the commander know his concept of the problem is within acceptable bounds?
- What emergent factors would necessitate a request for review of strategic guidance by the Nation's strategic leaders?

(e) What are the information requirements the commander must establish to support his ability to determine when to reframe? These information requirements describe how information relative to the adversaries, forces and the environment, alone or in combination, would indicate that the current problem frame should be revised. This includes establishing CCIR and some examples of questions that might assist in shaping these requirements:

- Priority information requirements (PIRs): information relative to the adversaries.
 - Have new adversaries entered the picture?
 - Have existing adversaries altered their strategies or tactics?
- Friendly force information requirements (FFIRs): information relative to the friendly forces.
 - Have new constraints been placed on the force or its allies?
 - Does the force have the capacity to sustain operations for the period of time needed to realize objectives?
- Environmental information requirements (EIRs): information relative to the campaign environment.
 - Have the tendencies or policies of neutral or inactive entities, governmental and nongovernmental, changed?
 - Have trends emerged that increase or decrease tolerance for the actions executed within the campaign, for example, basing, over flight, support functions?

3-2. The Campaign Plan

a. A campaign plan should be broad and conceptual. A campaign plan must explain the problem(s) to be solved and the framework of the campaign design. Therefore, the planning horizon of a campaign plan must extend to the end of the campaign. Detailed lower level operational and tactical directives must nest within the design of the campaign plan. Those orders and plans focus on implementation and have a closer planning horizon.

b. Two compelling reasons drive the preference for less detail and greater emphasis on the conceptual approach; both are derived from the temporal dimension of a typical campaign. First, the inclusion of great detail for operations not scheduled to begin within the near term is potentially wasted effort since the precise start conditions are nearly impossible to predict far in advance. Second, if the staff of a campaigning unit is focused on working out tactical detail for distant operations, it is likely that intellectual effort has been distracted from the campaign design itself, which is far more important to do well. The design must explain the linkage between tactical objectives, operational goals, and strategic aims, and clearly define the range of acceptable outcomes. It must also explain the relationships between the operations that constitute the campaign and it must arrange these operations over time.

c. The tasks must drive a list of capabilities and resources (across all instruments of national power) for each operation in the campaign and indicate when they will be required. Unlike tactical planning, which begins with a nearly complete array of forces, the writ of the campaign planner is to determine which capabilities are required where and when, so that force providers, the interagency partners, and allies have sufficient time to react. Requirements should be linked to the design of the campaign. The campaign plan should identify not only when capabilities will be required, but also their purpose and anticipated areas of operations. The plan must also define the organizational architecture in the theater, specifying the command and support relationships between service components, operational-level headquarters, multinational headquarters, interagency elements, and service support providers. Finally, it must prescribe the logistics structure throughout the theater of operations.

d. The probable duration of a campaign makes reframing a certainty. Therefore, a campaign plan cannot be a thick and unwieldy tome. Campaign plans must be brief, succinct, clear, and easy for high-level executives to read. Senior leaders must read it and planners must be able to nimbly republish the plan with a modified framing of the problem and/or design of the campaign when reframing makes these adjustments necessary.

e. Finally, each commander who finds himself applying operational art to solve a complex operational problem as part of a prolonged campaign should have a campaign plan. Campaign plans at each level should nest in the same way that tactical orders do.

Appendix A References

Section I Required Publications

Chairman of the Joint Chiefs of Staff Manual 3122.01
Joint Operation Planning and Execution System (JOPES), Volume I (Planning Policies and Procedures). (Available at: http://www.dtic.mil/cjcs_directives/cjcs/manuals.htm.)

JP 1
Doctrine for the Armed Forces of the United States.

JP 1-02
Department of Defense Dictionary of Military and Associated Terms.

JP 3-0
Joint Operations.

JP 5-0
Joint Operation Planning.

FM 1-02
Operational Terms and Graphics.

FM 3-0
Operations.

FM 5-0
Army Planning and Orders Production.

Joint Warfare Publication 5-00
Joint Operations Planning. (Available at: <http://www.mod.uk/DefenceInternet/Home/>.)

Section II Related Publications

FMI 5-0.1
The Operations Process.

TRADOC Pam 525-3-3
The United States Army Functional Concept for Battle Command 2015-2025. (Available at <http://www.tradoc.army.mil/tpubs/pamndx.htm>.)

MCDP 1-2
Campaigning. (Available at <https://www.doctrine.usmc.mil/>.)

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Appendix B

Proposed Format for Campaign Intent

Use this format for the commander's campaign intent.

Problem: Concisely state the problem(s) that must be addressed during the conduct of the campaign.

Purpose: State the campaign purpose in relation to the problem(s) defined above.

Key Objectives: Define the conditions that the command must establish in order to satisfy strategic guidance.

Priorities: Define the priorities in terms of geography, specific organizational threats, or functions towards which the command will allocate its resources.

Risk: Describe the acceptable level of risk towards that the command should plan to mitigate.

End State: Define the conditions of the friendly, adversaries, and environmental factors that provide a self-regulating solution and hence define campaign success.

Glossary

Section I

Abbreviations

ARCIC	Army Capabilities Integration Center
CACD	Commander's Appreciation and Campaign Design
CCIR	commander's critical information requirements
CPG	Contingency Planning Guidance
EIR	environmental information requirements
FFIR	friendly force information requirements
FM	field manual
IDF	Israeli Defense Forces
JP	joint publication
JSCP	Joint Strategic Capabilities Plan
OIF	Operation Iraqi Freedom
OPORD	Operations Order
PIR	priority information requirements
TRADOC	U.S. Army Training and Doctrine Command
U.S.	United States

Section II

Terms

Aim

A purpose or intention toward which one's efforts are directed. This pamphlet uses the term "aim" rather than "objective" at the strategic level, implying a greater degree of ambiguity. The term "objective" implies a condition that must be achieved exactly.

Analysis

1. Resolution of anything complex into simple elements (opposite of *synthesis*). 2. The separation of an intellectual or material whole into its constituent parts for individual study.

Appreciate

To be fully conscious of; be aware of; detect. Appreciate applies especially to high regard based on critical assessment, comparison, and judgment; To appreciate is to exercise wise judgment, delicate perception, and keen insight in realizing the worth of something.

Appreciation

1. An understanding of the nature or meaning or quality or magnitude of something. 2. Critical notice; evaluation; opinion, as of a situation 3. The act of estimating the qualities of things and giving them their proper value.

Approach

1. The method used or steps taken in setting about a task, problem, etc. 2. The method used in dealing with or accomplishing: *a logical approach to the problem*. 3. Ideas or actions intended to deal with a problem or situation.

Assess

To determine the value, significance, or extent of; appraise. [Syn: estimate].

Assessment

1. A continuous process that measures the overall effectiveness of employing joint force capabilities during military operations. 2. Determination of the progress toward accomplishing a task, creating an effect, or achieving an objective. 3. Analysis of the security, effectiveness, and potential of an existing or planned intelligence activity. (JP 5-0)

Note. This definition presumes that the mission and hence the environment within which it is pursued remain constant—there is a baseline against which we can measure worth or progress. This remains true for short periods of time but does not hold true as we operate over extended periods of time and the environment changes—the components in it adapt as a result so should our approach and as a result the conception of a baseline may not be valid because it is only relevant to the situation at the time it is measured.

Campaign

A series of related military operations aimed at accomplishing strategic and operational objectives within a given time and space. (JP 1-02)

Campaign Plan

A joint operation plan for a series of related major operations aimed at achieving strategic or operational objectives within a given time and space. (JP 1-02)

Capability

The ability to execute a specified course of action. (JP 1-02)

Condition

1. A state at a particular time. 2. A mode of being or form of existence of a person or thing. 3. An assumption on which rests the validity or effect of something else; (usually plural) a statement of what is required as part of an agreement.

Character

The “aggregate” of features and traits that form the individual nature of some person or thing.

Closed system

A complete and seemingly unchangeable set of doctrines, ideas, or things; a self-contained system that is unaffected by outside influences. See also open system.

Commander’s Critical Information Requirement

An information requirement identified by the commander as being critical to facilitating timely reframing of the operational problem. (Proposed for use in campaign design.) An information

requirement identified by the commander as being critical to facilitating timely decision-making. The two key elements are friendly force information requirements and priority intelligence requirements. Also called CCIR. (JP 3-0. The JP 3-0 definition would still apply in planning and executing short-term tactical operations.)

Constituent

An artifact that is one of the individual parts of which a composite entity is made up; especially a part that can be separated from or attached to a system

Context

The set of circumstances or facts that surround a particular event or situation.

Decisive strategic conditions

A combination of inter-connected changes to the states of the critical factors of the problem that contribute to a favorable and self-regulating end state.

Design

As used in creative endeavors such as art and architecture, the act of working out the form of something (visualizing), requiring considerable research, thought, modeling, iterative adjustments and re-design to pull together the rational with the natural; intended to guide the making of something else. It is a basic scheme or pattern that affects and controls function or development; it reflects the purposeful or inventive arrangement of parts or details toward an intended purpose.

Direction

1. Management, supervision, or guidance of an action or operation. 2. A course or area of development; a tendency toward a particular end or goal. 3. A purpose or orientation toward a goal that serves to guide or motivate; focus.

Directive

1. A military communication in which policy is established or a specific action is ordered. 2. A plan issued with a view to putting it into effect when so directed, or in the event that a stated contingency arises. 3. Broadly speaking, any communication which initiates or governs action, conduct, or procedure. (JP 1-02/AAP-6)

Discourse

The process of reasoning through a candid exchange of opposing ideas without fear of retribution that results in a synthesis and a shared visualization of operational problems. (This term and its definition are proposed; not in published doctrine)

Emergent

1. Coming into view or notice; issuing. 2. Emerging; rising from a liquid or other surrounding medium. 3. Coming into existence, esp. with political independence: "The emergent nations of Africa." 4. Arising casually or unexpectedly. 5. Calling for immediate action; urgent. 6. Evolution - displaying emergence.

Environmental information requirements

Information the commander and staff need about the operational environment in order to develop plans and make effective decisions. Also called EIR. (This term and its definition are proposed; not in published doctrine).

Execution

1. The act of accomplishing some aim or executing some order; 2. The act of performing; of doing something successfully; using knowledge as distinguished from merely possessing it.

Frame

1. To form, constitution, or structure in general; system; order; 2. To contrive, devise, or compose, as a plan, law, or poem: to frame a new constitution; 3. To conceive or imagine, as an idea.

Friendly force information requirement

Information the commander and staff need to understand the status of friendly force and supporting capabilities. Also called FFIR. (JP 3-0)

Goal

1. The state of affairs that a plan is intended to achieve and that (when achieved) terminates behavior intended to achieve it; "the ends justify the means," 2. The result or achievement toward which effort is directed.

Insight

1. The capacity to discern the true nature of a situation; penetration. 2. The act or outcome of grasping the inward or hidden nature of things or of perceiving in an intuitive manner.

Interactive complexity

The complexity that is based upon the behavior of the parts within a system and the resulting interactions between them. The greater the freedom of action of each individual part and the more linkages among the components, the greater is the system's interactive complexity. See also structural complexity.

Logic

The relationship between elements and between an element and the whole in a set of objects, individuals, principles, or events

Major operation

a series of tactical actions (battles, engagements, strikes) conducted by various combat forces of a single or several services, coordinated in time and place, to accomplish operational, and sometimes strategic objectives in an operational area. These actions are conducted simultaneously or sequentially under a common plan and are controlled by a single commander. (FM 3-0)

National strategic end state

The broadly expressed conditions that should exist at the end of a campaign or operation. (JP 5-0)

Objective

1. The clearly defined, decisive, and attainable goals towards which every military operation should be directed. 2. The specific target of the action taken (for example, a definite terrain feature, the seizure or holding of which is essential to the commander's plan, or, an enemy force or capability without regard to terrain features). (JP 1-02)

Open system

A changeable and alterable set of doctrines, ideas, or things; a system that is affected by outside influences. See also open system.

Operational art

The art of taking an unstructured problem and giving it enough structure so that planning can lead to useful action. (Proposed in TRADOC Pam 525-5-500.) The application of creative imagination by commanders and staffs—supported by their skill, knowledge, and experience—to design strategies, campaigns, and major operations and organize and employ military forces. Operational art integrates ends, ways, and means across the levels of war. (JP 1-02)

Operational design

The key considerations used as a framework in the course of planning for a campaign or major operation. (JP 1-02)

Operational end state

A favorable, self regulating situation within the campaign's operational space (joint operations area, area of responsibility, etc.) that is realized by the campaign which contributes to the overall achievement of strategic aims. The operational end state is the point at which a transition begins. The realization of the operational end state begins a transition that defines the scale and nature of military involvement in the U.S. Government effort towards achieving the strategic aims. In general, it marks the beginning of transitioning from military to civilian control, transition from civilian control to international control, the hand over from international interests to indigenous control and most importantly, improving prospects for enduring stability defined as a self-regulating solution.

Operation order

A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation. Also called OPOD. (JP 1-02)

Operation plan

1. Any plan for the conduct of military operations prepared in response to actual and potential contingencies. 2. In the context of joint operation planning level 4 planning detail, a complete and detailed joint plan containing a full description of the concept of operations, all annexes applicable to the plan, and a time-phased force and deployment data. It identifies the specific

forces, functional support, and resources required to execute the plan and provide closure estimates for their flow into the theater. Also called OPLAN. (JP 1-02)

Priority information requirement

An intelligence requirement, stated as a priority for intelligence support, that the commander and staff need to understand the adversary or the operational environment. Also called PIR. (JP 2-0)

Requirement

It is a factor which is judged necessary according to the nature of things, or to the circumstances of the case.

Self-regulating

1. Adjusting, ruling, or governing itself without outside interference; operating or functioning without externally imposed controls or regulations: a self-regulating economy; the self-regulating market. 2. Functioning automatically: a self-regulating machine.

State

The condition of a person or thing, as with respect to circumstances or attributes.

Strategy

The art and science of developing and employing instruments of national power in a synchronized and integrated fashion to protect or advance national interests to achieve theater, national, and/or multinational objectives. (JP 1-02)

Structural complexity

The complexity that is based upon the number of parts in a system. The larger the number of independent parts in a system, the greater its structural complexity. See also interactive complexity.

Synthesis

1. The combining of the constituent elements of separate material or abstract entities into a single or unified entity (opposed to analysis). 2. A complex whole formed by combining.

Systematic

A methodical process dependant on an expectation of prescriptive cause and effect within a closed system.

Systemic

A holistic approach that draws from systems theory, aimed at understanding and influencing change in an open system. Note that system is derived from a Greek word meaning “to combine.” A systemic understanding requires combining components of a system in a context and establishing the nature of their behavior and relationships.

Task

1. A definite piece of work assigned to, falling to, or expected of a person; duty; 2. A function to be performed in regards to realizing an objective; 3. A *task* is a well-defined responsibility that is usually imposed by another and that may be burdensome.

Unified action

The synchronization, coordination, and/or integration of the activities of governmental and nongovernmental entities with military operations to achieve unity of effort. (JP 1)

Section III

Special Abbreviations and Terms

This section contains no entries.

