Planning to Win
A Study in Strategy and Operational Art

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> *If I always appear prepared, it is because before entering on an undertaking, I have meditated long and have foreseen what may occur. It is not genius which reveals to me suddenly and secretly what I should do in circumstances unexpected by others; it is thought and preparation.*
>
> *--Napoleon*

Events of September 11th notwithstanding, these are fortunate times for America. Our economy, even in recession, still dominates the world's markets. Our media dominates the airwaves. Our popular culture is the envy of the planet, dazzling and fascinating even those hostile to it. Our nation is so powerful we seem able to win wars with the effortlessness of gods. Or at least we did until very recently. Several years ago in Kosovo, we forced terms upon a reluctant foe with a significant part of our joint military capability "tied behind our backs," as it were. Ground and naval power played no significant roles. We went in with no plan: national objectives were ambiguous, military objectives were not clearly tied to them, and military courses of action bore no logical relation to either. We added forces piecemeal and placed seemingly arbitrary restrictions on them. We subjected tactics—even individual targets—to the political veto of a factious collection of allies. We did many of the things we said after Vietnam that we would never do again. And yet we "won," at least for awhile. We seem to have compelled the foe to bend to our will.

We have not always been so fortunate. America entered most of its wars woefully unprepared, materially and intellectually. Two instances, at either ends of the American historical spectrum, illustrate the point.

We entered our first conflict as a sovereign nation, the War of 1812, without much serious thought. We challenged the world's foremost power, Great Britain, with an insignificant standing army, a rabble of militias, a tiny (if talented) navy, and no real ability to expand any of them. A touch of foresight might have told us this was not a good idea. As it was, we essentially lost the war on land (victors seldom watch their own Capitals burn). We had no operational or strategic effect at sea (our naval exploits, however exciting to national spirit, did little more than wound British pride). Ultimately, it fell to the genius of talented negotiators to coax a political solution. The resulting peace treaty, essentially restoring the status quo ante bellum, was a tacit recognition by Britain that it had fought an expensive war at great remove for marginal gain; continuation was not in its interests, regardless of military success.[1] We talked our way out of the consequences of bad planning.

In Vietnam, we assumed the position Britain found itself in during the War of 1812. We were the great power fighting a war of little import to us on the other side of the world. We stumbled into Vietnam piecemeal, with no coherent vision of what we wished to accomplish or how we would use the military to accomplish the goals we did set. In short, we lacked a strategy. We began with an (at least theoretically) attainable national political objective of securing a free and

independent South Vietnam. We failed, however, to develop a national course of action (COA) that could attain that objective. Consequently, the military objectives and COAs lacked logical connection to those at the national political level. As in Kosovo, we selected a military COA centered on containing the ground threat and "dissuading" the enemy from continued offensive action through gradually escalated aerial bombing. Better understanding of our foe and the environment in which we fought would have informed us that this would not work. The North Vietnamese leadership was implacable—their entire worldview was bound up in their goal of national re-unification, and probably would have been even had they not been communists. Their people were able to sustain a far higher degree of punishment than would ever have been politically acceptable to U.S. citizens. Perhaps no military COA short of outright conquest would have worked. We paid a high price for failing to think through the conflict.

Recent History

DESERT STORM was a stunningly successful example of good planning, but not because we entered the Gulf crisis with a sound campaign planning process. Quite the contrary; when Iraq invaded Kuwait, our ability to intelligently build a military plan from the ground up was almost dead. Planning experience within the Air Force at that time consisted of years spent reworking much older plans. Strategic Air Command's Single Integrated Operating Plan (SIOP) for nuclear war was first put together in the early 1960s. Other Major Commands with combat missions reworked plans for general war with the Soviet Union in Europe or for re-fighting the Korean War. All of the "upper-level" thinking involved in these plans had been done decades before. We lacked a process to think through objectives, analyze an enemy for critical vulnerabilities, and develop courses of action to achieve the objectives by exploiting those vulnerabilities. We did all of these things prior to DESERT STORM—and did them well—but the plan we used originated as a remarkably spontaneous coup d'oeil—a product of genius, not process. Col John A. Warden III and his staff in Checkmate put Instant Thunder, the plan that largely became DESERT STORM, together in days from Warden's basic vision. There was no process; the plan essentially sprang to life fully-grown, like Athena from the forehead of Zeus.[2]

Unfortunately, we cannot depend on genius to guide us through every contingency. In the early days of the Gulf crisis, there were plans competing with Instant Thunder that were decidedly not works of genius. The existing operations plan[3] was devoted mostly to issues of deployment, with little thought given to how the Theater Commander was to employ combat airpower once it arrived. The tacit assumption was that it would be used as fire support for ground operations. There was also a plan produced by Tactical Air Command's planning staff, created with reference to Instant Thunder and consciously conceived as a more "doctrinally correct"[4] competitor to it. This plan was to start with "demonstrative attacks" against a very few "high value" targets, gradually escalating over days and weeks until the Iraqi regime either retreated from Kuwait or a ground offensive began. The graduated escalation was intended to allow "time and opportunity for [Iraqi leader Saddam] Hussein to reevaluate his situation and back out while there is still something to save."[5] Once a ground offensive began, combat airpower was to be used to "support the ground scheme of maneuver."[6] The plan was, in essence, 'Rolling Thunder meets AirLand Battle.' Its strategy conceded initiative to the enemy, failed to make any analysis of Iraq as a system, and failed to seriously examine creative alternatives to using airpower to "build a hose and point it where the ground commander sees that it's needed."[7] Fortunately for

the coalition, CENTCOM Commander Gen. H. Norman Schwarzkopf had already accepted Instant Thunder.

Against Serbia, we muddled through a Vietnam-like period of gradualism, apparently achieving parallel effects somewhere late in the campaign when political frustration with NATO's lack of progress led to a phase more directly controlled by theater military commanders. Regardless, we entered the conflict with no clear plan of campaign—no clear strategy. All the lessons we learned and relearned in World War II, Vietnam, and DESERT STORM seemed forgotten. What we needed going in, as we began planning for the conflict, was a process for creating a strategy; an intellectual tool to help frame the plan of campaign.

Fortunately, such a process does exist, although—as ALLIED FORCE demonstrated—it may not be particularly well known. It is a succinct and logical construct that was originally designed to help create theater campaign plans for air component commanders, but many believe it has wider application. This process should be amenable to any form of component, joint, or combined force employment planning and its iterative use before and during a conflict may help avoid some of the intellectual pitfalls we have fallen into in the past.

The Process

The process emerged from the intense "lessons learned" efforts that followed the Gulf War. It created by officers at Air University's College of Aerospace Doctrine, Research and Education (CADRE).[8] Several, including Lt Col Maris "Buster" McCrabb and Lt Col Earl Lund, had been tasked to create a course to teach campaign planning principles, the Joint Doctrine Air Campaign Course (JDACC).

They perceived that the U.S. had a tangle of formal processes for planning at the strategic and tactical levels of war, none of which really assisted in thinking through the problems inherent in force employment at the operational level. The national planning community had become comfortable with deployment issues and the services had absorbed many lessons about tactical employment from Vietnam and lesser contingencies, but the operational level—the campaign level, the level at which most wars are won or lost—had largely been ignored. The officers at CADRE distilled their insights on operational art into five steps (also called "phases" or, more correctly, "stages"[9]):

1. **Operational Environment Research (OER)**
2. **Objective Determination**
3. **Center of Gravity (COG) Identification (or Analysis)**
4. **"Strategy" (or Course of Action) Development (or Identification)**
5. **Plan Development**

An early form of the process became part of joint doctrine in 1994 with issue of Joint Publication (JP) 3-56.1, Command and Control for Joint Air Operations (14 Nov 94). It describes the five "phase" joint Air Operations Planning Process. An improved version is presented in Air Force Doctrine Document (AFDD)-2, Organization and Employment of Aerospace Power (17 Feb 00).[10]

General Considerations

This is a thought process, not a checklist. The stages are intended to help guide those involved in planning campaigns past the intellectual pitfalls that normally lead to bad plans. They are not exhaustive and are not intended to anticipate every contingency inherent in a situation. Their use also does not guarantee good planning; "garbage-in, garbage-out" still applies. There are checklists—good ones—that can help flesh-out a plan created using the process. Good examples can be found in JP 5-00.2, Joint Task Force Planning Guidance and Procedures (13 Jan 99) and in the JDACC Air Campaign Planning Handbook (March 2000).[11]

As stated, the process was developed to aid in the application of aerospace power in a conventional Cold War-era conflict, but the thought process is relevant whether the means employed are space-borne or spear-armed infantry.

The process is iterative. This is one of its most valuable aspects. During planning and execution, new information will often force a re-assessment of the products of earlier stages, or force a complete reiteration of the process. This is normal and intellectually "healthy." Time permitting, at least the first four stages (the "concept formation" stages) should be run through several times. People permitting, it is useful for several groups to run through the concept formation stages independently and compare their ideas before final COA selection.

The order in which the stages are accomplished is not sacrosanct. The sequence presented in Air Force doctrine is intended to optimize the process in an absolute worst-case planning environment: very limited information and time available in an undeveloped theater or situation. Operational environment research includes prior knowledge brought to planning at its inception and thus logically begins the process. Objective determination, perhaps the most important stage, must come next, because the objectives guide work in all other stages (with the possible exception of COG analysis). COG analysis is really an extension and elaboration of OER—and may often be accomplished independently of the other stages—but has been placed after objective determination to emphasize the primacy of objectives in the process. Stages 4 and 5 are where sequence truly becomes important. "Strategies"—courses of action—cannot be selected intelligently without having accomplished the first three stages. It obviously follows that detailed plan development should not begin until the first four stages have been run through at least once and an intelligent course of action has been selected. One of the common mistakes leading to bad plans is to take products of other planning processes (like deliberate planning) and begin detailed ("Stage 5") work with them without having run through the "concept formation" stages of this process. Skipping directly to Stage 5 usually leads to "input-based" plans. That is, planners seem to say, "we have these forces; what can we do with them?" instead of saying, "we have this strategy (objectives, COGs, and COA); what forces do we need to accomplish it?" and then validating the products of other processes against that chosen strategy.

The process may be run sequentially or in parallel. There are often advantages to running the stages at different times or in having different groups run them in parallel. Often, different groups will run the stages at different times. For example, the "concept formation" stages may be run by a high-level group as part of CAP or in-theater campaign planning. This group may accomplish only a minimum of detailed "concept validation" planning (Stage 5).

Very often, detailed OER and COG analysis will already have been done for a particular nation or force by the national intelligence agencies or organizations such as the Joint Warfare Analysis Center. Even if the process is being run without outside help, it can be useful to combine aspects of OER and COG analysis. Similarly, objective and "strategy" development are often combined. Stage 5 is often accomplished as an entirely separate process, done in a different time and place by different people. In such cases, it is always valuable for the group doing the detailed planning to reiterate the first four stages and question the assumptions of the original "upper level" planners. Information and conditions often change, requiring such review. Even if the "upper level" did its job perfectly, a review gives the detailed planners confidence in the product.

Operational Environment Research

This stage is first because it includes information gathered before planning begins. Nonetheless, OER never ceases—it continues throughout all the other stages. In a sense, it surrounds and contains the other stages (See Figure 1). New intelligence will often drive a reassessment of other stages' products, or at least necessitate changes in the detailed planning done in Stage 5. Failure to continually re-assess can often be fatal to an otherwise sound plan.

The goal of this stage is to gain as thorough an understanding of the conflict environment and the minds of the participants as is possible in the time available. This is accomplished by gathering and analyzing information from as diverse a collection of sources as manning and time will allow.

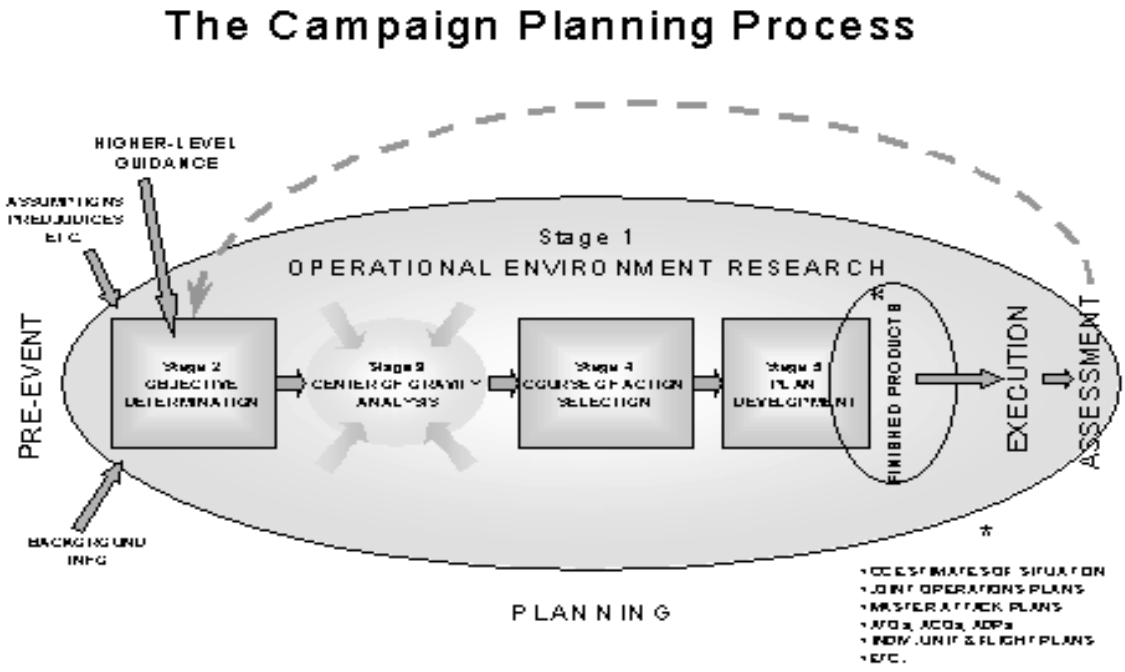

Figure 1

A great deal of intelligence preparation focuses on the "correlation of forces:" direct comparisons of types and numbers of equipment, numbers of troops, and so on. History shows that such factors are often among the least relevant to the outcome of a campaign or war. Planners eventually need detailed information on such things to flesh out the targeting process, but placing too much emphasis on this sort of information "up front" can be intellectually dangerous. It can lead to the false sense that the outcome of a conflict can be predicted by applying simplistic "scientific" rules.[12] In fact, outcomes are always much more dependent upon mind and will, and on other intangibles that cannot be quantified. One must seek information that gives insight into the worldview of the enemy and helps to understand the conflict from his perspective. Leave targeting to Stage 5.

John Boyd, of "OODA-loop" fame, believed that, "wars are begun, fought and ended for some moral purpose."[13] He believed that each nation or actor must be able to justify a conflict's expense (especially in lives) according to its own moral system, or see its morale and support undermined. The loss of justification often (though not always) leads to defeat. Moral elan often (though not always) imparts an advantage at every level of war.[14] Obviously, the moral system of a Moslem fundamentalist warlord is very different from that of a communist dictator, which is (hopefully) very different from that of an American president. In order to anticipate and exploit the way an adversary thinks we must understand his moral worldview, almost as a prerequisite for any real understanding of his thought patterns. The most important sources for this type of information are the adversary's religious, "classic,"[15] and popular literatures. Time, of course, may not permit extensive reading from these sources. This is why country experts are so valuable: they can often provide a distillation or synthesis of this kind of background material. Open sources often contain more valuable, exploitable information than do the great majority of classified sources. What the classified sources can impart is distilled analysis from people with deep experience in a particular field or foe.

Ethnocentrism and mirror imaging are some of the most dangerous pitfalls of the OER process. In Vietnam, we assumed the adversary's society worked somewhat like as ours did and that his moral and material priorities were essentially the same as ours. The architects of the Combined Bomber Offensive against Germany in World War 2 analyzed aspects of our own economy and found critical bottlenecks they assumed would be mirrored in the German economy. The industries they targeted, most famously ball bearings, proved far more resilient to attack than our analysts expected, in part because the Germans anticipated our moves against them.[16]

We must always examine our own normative assumptions and prejudices and attempt to look at the conflict from outside the lens they form. At the same time, we must seek information that helps us understand the conflict from the enemy's perspective. Only then will we be following Sun Tzu's ancient (but effective) prescription for success in "a hundred battles."[17]

Objective Determination

The objective is the first principle of war in joint doctrine and the determination of objectives is the most important part of the planning process. Joint Pub 3-0, Doctrine for Joint Operations, states that, "the purpose of the objective is to direct every military operation toward a clearly defined, decisive, and attainable objective."[18] The definition does not tell us what

objectives are, but that is simple: they are what we want to accomplish. How comes later, as we flesh our strategy into courses of action.

Despite its circular logic, the joint definition contains some important insights. The first is that an objective must be clearly defined. This has been a weak area for the United States and may always be in a nation where the civilian political process controls military action. There is often great political virtue in not defining things clearly, allowing room for negotiation and maneuver. Regardless of how politically attractive vague objectives clouded by rhetorical hedging may be, they lay the groundwork for disaster when lives are on the line, as people begin to die and treasure begins to disappear for no clear purpose.

Most often, failures in objective definition occur at the junction between national-level political goals and strategic military objectives. Either the political leadership fails to clearly define what it wants to achieve, or the military establishment fails to devise a strategy congruent with the political goals. As our involvement in Vietnam began to unfold, politically motivated presidential policies, at odds with the nature of war, combined with discord among the Joint Chiefs of Staff to yield incomprehensible objectives and a disjointed course of action.[19]

Vietnam was not an isolated instance, however. Most of the conflicts we have entered since World War 2 have been characterized by a failure of the objective determination process in some form. In Korea, strategic objectives wandered almost literally all over the map. We began the conflict determined to stop the North Korean offensive and drive it back to the original demarcation line. When this succeeded better than anticipated, the objective changed to freeing the entire peninsula. When the Chinese counterattack shattered UN forces, the objective changed again, this time to forcing a cease-fire and damaging the Chinese as much as possible without escalating the conflict into a world war.[20] We ended almost precisely where we would have had we never changed the objectives in the first place.

Such confusion is one major reason that objectives at all levels need to be tied together in logical sequence, with those at lower levels clearly supporting the entire network of those above. Every operation at the tactical level should be connected to the conflict's strategic objectives by a clear chain of logic. A disconnect in the chain represents a breakdown in the process and should force a reevaluation of those objectives that do not fit the hierarchy. If you cannot logically tie an objective to national and theater objectives, do not commit resources to it.

The principle of war's definition also states that an objective must be decisive. Its attainment must decide at least part of the outcome of the conflict at hand. By implication, we must be in a more favorable situation versus the enemy after its attainment. This seems obvious, but history is full of violations of this simple precept. Most of the objectives we set at various times in Vietnam, regardless of the level of war they applied to, failed to meet this test. Much of the "retaliatory" bombing we did during Operation Rolling Thunder had the stated purpose of "dissuading" the enemy from continued offensive action. HQ TAC proposed a similar policy in the Gulf War. In Vietnam, these objectives did not make the conflict environment more amenable to us. They failed to persuade the enemy and enhanced his strategic position because the damage caused by pursuing them had value in North Vietnam's psychological campaign against the US.

Joint doctrine maintains that objectives must also be attainable. A corollary is that, if attainable, they must also be relevant. Again, this would seem intuitively obvious, but it has been ignored time and again. In July of 1964, President Lyndon Johnson established a set of objectives for US policy in Vietnam. Among these were the following: "Reduce the frustration and defeatism of [South Vietnamese] leaders" and "contribute militarily to the success of the counterinsurgency effort in the Republic of Vietnam."[21]

In the case of the first, how would one know the objective had been obtained? It is possible that the complete conquest of North Vietnam would not "reduce the frustration." (The conquest of the south certainly didn't seem to satisfy northern leaders, after all). It's possible that the president's gift of a new pen to a southern leader might have "attained" the objective. There is no way of knowing whether this goal was attainable in any meaningful sense.

In the case of the second objective, the death of a single Vietcong would almost certainly "contribute militarily" to counterinsurgency, but in what way would such "attainment" be relevant to the overall political stability of South Vietnam?

All of this suggests a second corollary to attainability: attainment must be measurable in some meaningful way. Some of these measures may be simple to define: "Secure the unconditional and complete withdrawal of Iraqi forces in Kuwait" either happens or it doesn't. Something like, "assure the security and stability of the Persian Gulf region"[22] may not be so easy to put one's mind around. Such an objective may require clarification, and the process of determining measures of effectiveness may help point that out. An objective probably needs to be better defined if a way to measure its accomplishment cannot be identified.

Operational level planners may try to absolve themselves of responsibility for sound objective building. They often say, "objectives will be handed down to us. We will simply act upon them, or derive our own from them." This attitude is precisely why the objective determination process failed in Vietnam. Those who should have understood the need for solid higher-level objectives failed to press national leadership to obtain them, to derive them themselves, or to point out to the National Command Authorities (NCA) that their definition of the conflict clashed with creation of clear, logical, decisive, and attainable objectives.

In the most successful recent example of planning, Col John Warden and his staff in Checkmate did not wait for objectives to be handed down. They culled statements by President Bush and his senior advisors and derived a set of strategic objectives, which they then briefed up the chain to the NCA. They were accepted almost verbatim and became the nexus of Operation DESERT STORM.[23] This is a valuable example for campaign planners, who should make themselves perform such an exercise, even when (or perhaps especially when) objectives are handed down from "on high."

One final, overarching consideration: all objectives in a conflict must drive toward a clearly defined and attainable end state--some set of conditions that leaves the field of conflict better than it was before the contest began, or at least more amenable to our long-term political ends. Indeed, wars might be better run if they were "reverse engineered;" if leaders entered a

conflict with an end state in mind and planners "back filled" the necessary prior objectives, tasks, and targets to reach it.

End state planning has been a weak area for the United States, as Saddam Hussein's survival and ten years of Northern and Southern Watch attest. When the fighting abruptly ended in DESERT STORM, we had very little idea of what end state we were actually aiming to achieve. In the European Theater of Operations following World War 2, it took the better part of two years to think through the consequences of the existing end state and assemble the Marshall Plan. It can be argued that our failure to think through the probable end states in Europe, especially the likely behavior of our "ally" the Soviet Union, made the transition to the Cold War much harder and more frightening than it need otherwise have been.[24]

In contrast, Gen Douglas MacArthur's "proconsulate" in Japan was perhaps the most humane transition from military occupation to peacetime republican civil government ever seen. Years of experience in the Philippines gave MacArthur intimate knowledge of the kinds of problems he would encounter in Japan. He put this good OER to use in end state planning for Japan.[25]

The end state we left in Iraq suggests that we have lost the art, but that does not excuse planners and commanders from considering this most important aspect of objective determination (as joint doctrine mandates)[26] and from insisting that their civilian masters do so as well. All objectives in a campaign or conflict must logically support attainment of a clearly defined end state.

Center of Gravity Identification (Analysis)

We can probably credit Col John Warden with reviving Clausewitz' idea of the center of gravity. His Instant Thunder plan made heavy use of one model of the concept (his famous "five rings") and the authors of the five-stage process derived their use of it from Warden's example. Both the Checkmate and JDACC staffs realized that planners and commanders needed a way to focus use of resources and increase the effectiveness of their efforts. They sought, through the COG concept, a point or points where their efforts would have the best chance of being decisive against an enemy.

Clausewitz described the COG as, "a hub of all power and movement, upon which everything depends." He saw it as a belligerent's "dominant characteristic," by implication the ultimate source of his power and thus the thing he would try hardest to protect.[27] This idea accords with the current joint definition: "Those characteristics, capabilities, or localities from which a military force derives its freedom of action, physical strength, or will to fight."[28]

Since Clausewitz wrote, a COG concept at odds with his has arisen, which conceives of COGs as critical weaknesses or vulnerabilities. For instance, John Warden wrote in The Air Campaign:

> The term "center of gravity is quite useful in planning war operations, for it describes that point where the enemy is most vulnerable and the point where an attack will have the best chance of being decisive.[29]

Both the "Hub of power" and "Achilles Heel" views contain valuable insights, but making both analogous to a physical center of gravity has led to confusion. The idea that an adversary has one or more sources of strength or will, without which he cannot wage war, and "toward which all our energies should be directed,"[30] is sound. So is the idea that our most productive and economical targets are those where an enemy is critically vulnerable. The crux of the matter lies in the phrase, "critically vulnerable." To make sense of the issue, we should realize that our most lucrative points of effort must be both critical and vulnerable.

Dr Joe Strange of the Marine Corps War College has provided the best analysis to date of how the two concepts are related. He maintains that COGs themselves are sources and/or agents of moral or physical strength, power, or will to fight. They are not characteristics (as the joint definition states), but have inherent characteristics or abilities ("critical capabilities") that enable them to be sources of power. These characteristics depend upon certain essential conditions, resources, and means ("critical requirements") to be fully operative. Some of these critical requirements may be vulnerable to attack ("critical vulnerabilities"); attack them effectively and the COG will be decisively weakened.[31]

This concept is logical and elegant, but is sometimes cumbersome in application. It often requires several iterations at increasing levels of detail to yield useful results. Other models can yield useful insights with one run-through, but carry significant intellectual limitations.

The best known of these is Warden's Strategic Ring Model. In this model Col Warden likens contending parties to living systems, breaking them down into five essential functions common to all organisms, depicted as concentric rings.[32] In Warden's view, his five rings are the COGs—and the only COGs—regardless of the system under analysis.

The model has its advantages, among them its emphasis upon leadership and other aspects of the control mechanism as a central and necessary target set in all systems. But the model also has significant limitations. Chief of these is that it encourages a simplistic approach to COG analysis and eventual target selection. Planners using this model in exercises will often simply list customary target sets under the convenient five headings and consider their work done. They gain minimal insight into how the enemy system works.

Another major limitation is that the model does not describe how the "organism" or enemy system interacts with other systems. Common sense suggests that systems behave and adapt differently when exposed to external stimuli than when acting autonomously. One of the keys to understanding how an enemy will react to you in wartime is to examine how he forms relationships and handles external stress. The five rings are little help here.

Complexity theory--indeed the entire field of non-linear mathematics--may help provide insight where Warden's model fails to. This discipline offers the potential for better identification of so-called "lever points:" localized interactions among system components that lead to behaviors affecting an entire system, some of which may be controllable through action on the part of someone affecting the system from the outside.[33]

One advantage of COG analysis stemming from OER is that planners will often find their work done for them. Whole joint and national agencies exist (many of them not well known, for obvious reasons) to help provide this sort of analysis. Of course, it is always wise to examine the premises and assumptions upon which "off-the-shelf" analysis is based. Bad decisions can follow from bad analysis

A final caution: any truly useful analysis must include a detailed examination of one's own COGs as well as the enemy's. Part of this analysis is determining which elements of the enemy's system one must attack in order to enable one's own critical capabilities or defend one's own critical vulnerabilities. In the Gulf War, we spent much of the early part of the air campaign taking down the Iraqi air defense system in order to give our aircraft nearly free run of the theater. Similarly, we spent thousands of sorties suppressing Iraqi SCUD activity aimed at some of our critical vulnerabilities (casualty sensitivity, links to Israel).

"Strategy" (Course of Action) Development

In the simplest sense, this stage determines how one goes about achieving the "what" derived during Objective Determination. As used here, "strategy" refers to action taken to achieve one's objectives. It thus logically excludes the objectives themselves. This runs contrary to the traditional understanding of "strategy," however, and so this stage is probably misnamed, despite the current name being entrenched in joint and service doctrine. A "course of action," in the joint definition, encompasses ways and means, whereas "strategy" encompasses the ends as well.[34] "Course of action" is a better fit for what Stage 4 is intended to produce.

The first great intellectual hurdle that planners must vault is the examination of alternative COAs. Many times, a preferred COA will emerge as planning evolves, based upon the situation and/or the normative viewpoints or prejudices of the planners. Good planners must at least consider alternatives and their implications. If nothing else, this strengthens the intellectual justification for a preferred plan already derived. Sometimes the best plan or COA will not be intuitively obvious and planers must explicate and (to some extent) validate several COAs, offering them, equally weighted, to higher authority for decision.

Planners must also work through obvious branches and sequels to the COA or COAs they have chosen. A common human tendency is to see only the desired outcome of intended action. Unfortunately, military planners and commanders, making decisions that will expend precious lives and resources, do not have the luxury of assuming the outcome of their plans as blithely as we often do in our daily lives.

Nonetheless, many—often most—consequences of complex actions cannot be anticipated. Planners can often identify general trends in out-time behavior of a system, but complexity theory tells us that no system can be predictively modeled, however accurate one's picture of it may be.[35] Complexity theory also informs us that very small events can cause large, unpredictable system changes. Thus, a tactical event, with no perceptible immediate consequences, can have large strategic effects in the out-times.[36] The classic example is the 1942 Doolittle raid on Tokyo. Here an event with little tactical effectiveness caused Japan to pull significant resources away from its war in China to devote to homeland defense. More

importantly, the raid is widely believed to have pushed Japanese war planning down the path that led to defeat at Midway and thus helped significantly shorten the war in the Pacific.[37] Planners should attempt to anticipate when they can, but should not think they can do so with certainty.

This stage also requires dealing with a larger, overarching philosophical issue: the debate, revived in the last ten years or so, between those who favor "graduated," "flexible," or "incremental" courses of action and those who favor maximum use of available force in the shortest possible time to shock, dislocate, and exploit an enemy. The accumulated wisdom of military history teaches that the latter is the most effective way to impose one's will, and is the most economical in terms of lives and treasure. Military professionals periodically seem to forget this, though.

The gradualist approach is attractive to political leadership because it often works in resolving conflicts decided below the threshold of violence. Such conflicts are the bread and butter of politicians, who become adept in the ways of "slow and steady wins the course" and are thus generally averse to the "sucker punch" that knocks the enemy to his knees and takes his breath away. The effects of such blows tend to wear off quickly, in a politician's context of time, and engender in the enemy a desire for retribution. This reduces the statesman's options in treating with an adversary he may want to manipulate over a considerable period of time. A slow course of punishment and reward, of "carrot and stick," gives statesmen, diplomats, and politicians the promise of flexible progress they need.

However, the decisive, dislocating, immediately exploitable blow is the best weapon to use against an enemy who intends immediate physical harm. It denies him the ability, and hopefully thereby the will, to resist you and can create the opportunity for ordering the end state your way if exploited properly. Exploitation is the key. The dislocating blow itself is only half the battle. It is rendered essentially meaningless without appropriate exploitation. Germany's Kaiserschlacht in the spring of 1918 provides a good example of this. Gen Ludendorff's final attempt to break the Western Front open before arrival of America's armies was initially a brilliant success. Innovative German tactics rendered a hundred-mile-wide, million-man swath of Entente forces useless for weeks. But the German army of 1918 lacked the logistical flexibility and operational-level mobility to exploit the breach its Stosstruppen created and so the offensive bogged down without the decisive breakthrough Ludendorff had hoped for. German Stormtroopers created one of the most successful examples of dislocation in the history of land warfare, but they couldn't exploit it.

During World War 2, the combined island-hopping campaign in the Central Pacific offered a successful example of dislocation and exploitation. US naval surface and air forces dislocated heavily dug-in Japanese (in the sense of rendering them unable to act against US forces) by isolating them physically from supplies and command. Air forces helped keep them isolated, allowing surface land and amphibious forces to concentrate attacks only on those islands required to further the campaign or gain operational/strategic advantage over un-isolated Japanese forces. Pockets of dislocated Japanese troops survived for years, but they were rendered militarily irrelevant as the Americans pressed forward. Properly exploited dislocation is the highest expression of the warrior's art.

Plan Development

This final portion of the process is less a distinct conceptual stage than a catchall for the many issues planners must deal with in order to validate the products of the other stages. Validation is the key here: planners must prove that their concept of operations can be achieved with the resources available. In US military planning, this stage frequently becomes a separate process entirely.

When a plan emerges from the "other end" of Stage 5, it should identify force requirements, for fighting and support arms, and should resolve the movement and logistical issues that arise from getting them to the fight. It should identify the targets or target sets the campaign will aim at from an effects-based perspective: desired effects, targets, and measures of effectiveness. It should prioritize among those target sets and resolve sequencing and synchronization issues. It should determine the relative level of effort to devote to each target or set, as well as apportionment (if part of an air component plan and the Joint Force Commander insists upon using this anachronistic impediment to smooth operations[38]). It should identify (and resolve, if possible) intelligence requirements and shortfalls. It should develop all necessary subordinate component and ancillary plans, such as plans for information warfare and psychological operations. The five-stage process should be used independently to derive these. Finally, the overall plan should identify and lay out the campaign's phases. Phases work best when laid out sequentially. Each should be treated as a mini-campaign, with its own timeline and set of objectives. Attempts to build overlapping phases, or define them based on apportionment categories, as during DESERT STORM, have led to allocation chaos.[39]

Each one of these subjects is an art unto itself, worthy of extrapolation well beyond the scope of this article. Nonetheless, two major intellectual issues usually arise in plan development when airpower is employed and these must be addressed.

Col Phillip Meilinger has said, "airpower is targeting"[40] and many air planners have taken the message too much to heart. Too often, airpower's contribution has been driven by what it can affect, not by what it should affect. In war after war, contingency after contingency, planners have offered up similar lists of fixed targets and fielded military equipment that they know aircraft and missiles are good at blowing up. Airpower has acquitted itself very well in cases like DESERT STORM and (apparently) ALLIED FORCE, where the adversary possessed many such targets and controlled a modern (or semi-modern) coherent state that he had a large stake in preserving. Airpower has not—will not—work as well against less fixed or "coherent" enemies, as years of "bombing communist trees" during Vietnam's ROLLING THUNDER, or equally-futile years of sending cruise missiles to do infantry's work in our ongoing antiterrorist "bug hunt" demonstrate. Airpower is the dominant arm on the battlefield and is likely to remain so for the foreseeable future. It is also the dominant weapon against the state, as the state has been conceived since the Peace of Westphalia. Its utility has yet to be proven, however, in conflicts where the enemy is not a state actor and /or does not meet us on the field of battle.

If the five-stage process does nothing else, it emphasizes the primacy of objectives and the necessity for courses of action to logically support those objectives. Military planning most often fails when planners choose military means that do not match political ends. Air Force officers

often enter planning already predisposed to do this, carrying mental lists of what the Air Force is good at attacking and they almost invariably try to conform planning problems to fit those lists. This "target list syndrome" forms a large part of the normative lens through which Air Force officers perceive military action. The late enthusiasm for "emerging targets" seems simply to be making the problem worse. A target, emerging or otherwise, is only worthwhile if it is tied to the campaign's overall objectives. Air planners need to become innovators, inventing ways to use often-neglected aspects of airpower to affect enemy COGs that do not readily yield to attack (or isolation, or dislocation) from above. Such targets include highly dispersed and clandestine international terrorist organizations; irregular or infantry adversaries who have "gone to ground" in urban or other closed terrain; and the "hearts and minds" of less-developed peoples whose governments we oppose and who may be culturally hostile to us, but toward whom we bear no ill-will.

An area of innovation planners should explore is the use of airpower in "an overall campaign strategy that will subject enemy forces to psychologically effective attack."[41] Airpower has a dubious history of demoralizing civilian populations, but this has always been a morally and militarily dubious task. It has been remarkably effective when used properly, however, at demoralizing forces in the field, and where this can be accomplished, it may have utility even in conflicts where those forces are hidden and/or irregular.

To maximize the psychological effects of airpower, planners must try to keep the enemy under constant aerial attack (and even constant presence can be beneficial). Airpower should also be used to deny the enemy food and water when possible. Planners should include use of weapons that have the greatest psychological impact. Carpet bombing can have significant utility against troops in the field, even if it actually destroys very little. B-52s seem particularly effective at this, and much of their utility stems from the happy accident of their having been "sold" in the press as terror weapons for years. They seem to be fulfilling this role reliably even today.[42] Finally, airpower should also be used to convince an enemy that if he shoots, moves, or radiates, he will die.[43] The fundamental premise here is that psychological warfare should not be considered in isolation. The entire gamut of psychological and information operations should be used in conjunction with force application for maximum synergistic effect, and force application should be tailored to have maximum psychological impact.

Conclusion

The United States has confidently enjoyed military supremacy now for many years. We have no peer competitors and will not likely have any for years to come. Perhaps the conflict we are now in, though, will belie our easy confidence. The case of Rome may be illuminating: a peerless empire with the most dominant military machine built to that time that was eventually overrun by barbarians who were centuries behind it in civil and military technology. Our current military superiority does not guarantee our safety, as the events of September 11th show plainly. We must be very careful that we win the war we're in and use all the tools—including planning tools—available to us as intelligently as we can.

The way we approached the war in Kosovo was a prescription for disaster and an object lesson in how not to plan and run a campaign, particularly one employing airpower as its principal tool.

That we got lucky and/or good at the end should not blind us to the danger that Kosovo could become a template for military action to future interventionist-minded politicians. Incremental escalation, micro-management of the tactical and operational levels of war, and the political "carrot and stick" approach—all characteristics of our "strategy" in Vietnam—have a natural appeal to some politicians. We spent twenty years convincing the political establishment in this country that we lost Vietnam because we took this approach to war. We seem to have proven the point decisively in the way we prosecuted DESERT STORM. ALLIED FORCE may have erased that progress. We in the military may have "shot ourselves in the foot" by seeming to be able to do the impossible. Unless we can remember the timeless lessons taught by WWII, Vietnam, and the Gulf War—and learn some lessons from conflicts like Russia's wars in Chechnya and Afghanistan—we cannot count on winning. The process that guides Air Force campaign planning may be useful in helping us in the military better prepare ourselves and our national leadership for future conflicts. In Kosovo, we got lucky. Fortune may not favor us as strongly in the conflict at hand.

Notes

1. The war was never popular with Britain's mercantile and financial concerns, since it hurt very lucrative trade with the U.S. This helped create pressure in Parliament to accept a settlement. Our stand at Baltimore also helped change British perceptions of the war's progress. Our victory at New Orleans came after the Treaty of Ghent was signed.
2. For an excellent treatise on the origin of the plan, see Richard T. Reynolds, Heart of the Storm, the Genesis of the Air Campaign Plan Against Iraq, (Maxwell AFB AL, Air University Press , 1995).
3. OPLAN 1002-90, April 1990, file 19, Gulf War Airpower Survey Collection, US Air Force Historical Research Agency (HRA), Maxwell AFB AL (Secret). All information extracted is unclassified.
4. Tactical Air Command (TAC) and U.S. Air Forces Europe (USAFE) had semi-officially adopted the Army's AirLand Battle doctrine (from FM 100-5 Operations, May 86) as their own. This doctrine was designed to counter an anticipated Soviet ground offensive in central Europe, offsetting substantial Soviet numerical advantage on the ground with airpower, which would isolate Soviet troops in contact from following echelons with interdiction and help stop the forward echelon with Close Air Support and "close" interdiction.
5. "CENTCOM Air Campaign Plan," HQ TAC/XP, 11 Aug 90 (currently Secret); all information extracted is unclassified. (Author's personal copy of declassified overhead slides obtained from the Gulf War Air Power Survey files of the USAF HRA, Maxwell AFB AL), slide 11.
6. Ibid., slide 8.
7. DESERT STORM Joint Force Air Component Commander (JFACC), Gen John P. Horner, thus described air's role in OPLAN 1002-90, in a remark penciled in the margin of a briefing slide in April of 1990. Col Edward C. Mann III, Thunder and Lightening, Desert Storm and the Airpower Debates, (Maxwell AFB AL, Air Univ. Press1995), p28. Horner was initially hostile to Instant Thunder, believing that it represented unwonted interference from "intellectuals" outside the theater, detached from the action:

"How can a person in an ivory tower, far from the front. . .write such a [plan]?" See Reynolds, Heart of the Storm, 43.

8. Lt Col Howard interview, 15 May 00.
9. First known as "phases" by their authors, and thus entrenched in Joint doctrine (JP 3-56.1, Chapter III, "Planning for Joint Air Operations"). Later use favors "stages," which is how the process is presented in Air Force doctrine (AFDD 2, Organization and Employment of Aerospace Power, 17 Feb 00).
10. There is a discrepancy between these two sources in the ordering of the stages. JP 3-56.1 places "strategy identification" before "COG identification." The order is reversed—correctly so—in Air Force doctrine. This reflects a refined understanding of the process: one must understand both one's own objectives and the adversary's strengths and critical vulnerabilities (products of COG analysis) to intelligently select "strategies" (courses of action). In the updated version, the steps of the process are rightly called "stages" to avoid confusion with the "phases" of a campaign.
11. Available through the Joint Doctrine Air Campaign Course webpage, http://www.cadre.maxwell.af.mil/warfarestudies/jdacc/docs/handbook2000.pdf .
12. From Frederick W. Lanchester's "attrition laws" (cf F. W. Lanchester, Aircraft in Warfare: The Dawn of the Fourth Arm, London, Constable & Co., 1916) to the recent work of determinists like Trevor Dupuy (Trevor N. Dupuy, Numbers and Predictions in War: Using History to Evaluate Combat Factors and Predict the Outcomes of Battles, Fairfax VA, Hero Books, 1985 rev ed.) and James Dunnigan (James F. Dunnigan, How to Make War: A Comprehensive Guide to Modern Warfare for the Post-Cold War Era, 3rd ed., New York NY, Morrow, 1993), this idea—however specious—has been hard to get rid of.
13. Dr Grant Hammond, The Essential Boyd (unpublished, available at http://www.belisarius.com/modern_business_strategy/hammond/essential_boyd.htm), 6.
14. John Boyd, Discourse on Winning and Losing, (unpublished slide presentation, Air University Library document number M-U 3 9349 00588 3497, Maxwell AFB, AL, 1987), slides 290-295.
15. By "classic," I mean that small core of works that uniquely defines a culture apart from those that define its major religious system. This usually means a selection of the works of its greatest authors. For example, one could not understand the "soul" of the English-speaking world without some knowledge of Shakespeare and his influence.
16. Barry D. Watts, Foundations of US Air Doctrine: The Problem of Friction in War (Maxwell AFB AL, Air University Press, 1984), Chap. 6, Part I.
17. Sun Tzu, The Art of War, (Samuel B Griffith, trans, Oxford, Clarendon Press, 1963), 14.
18. Joint Pub 3-0, Doctrine for Joint Operations, 1 Feb 95, A-1.
19. For the most insightful treatment yet of the origins of the Vietnam War, see H.R. McMaster, Dereliction of Duty: Lyndon Johnson, Robert MacNamara, the Joint Chiefs of Staff, and the Lies that Led to Vietnam. (New York NY, HarperCollins, 1997).
20. See Robert F. Futrell, Ideas, Concepts, Doctrine, (Maxwell AFB AL, Air Univ. Press, 1989) Vol 1, 293-296, for a good discussion of this.
21. McMaster, Dereliction of Duty, 115.
22. Both from Bush, George H. W., President of the U.S., Address to the nation, 6 August 1990.
23. Reynolds, Heart of the Storm, 29.

24. Admittedly, Roosevelt felt he had good reason—the shift to war in the Pacific—to be sanguine about Russia in Eastern Europe. See Winston S. Churchill, Triumph and Tragedy (the Second World War, Vol 6), (New York NY, Houghton-Mifflin, 1953), Book II, Chap 8, "Western Strategic Divergences," pp 455-470, for a good discussion.
25. See an excellent discussion in William Manchester, American Caesar (New York NY, Dell, 1982), Chap VIII, "Last Post," pp 536-646.
26. Joint Pub 3-0, III-2.
27. Carl von Clausewitz, On War, (Howard, Paret, eds., Princeton NJ, Princeton Univ. Press, 1976), 595-6.
28. Joint Pub 1-02, www.dtic.mil/doctrine/jel/doddict/data/, under "centers of gravity."
29. Warden, Air Campaign, 9.
30. Clausewitz, On War, 596.
31. Dr. Joe Strange, Centers of Gravity & Critical Vulnerabilities: Building on the Clausewitzian Foundation So That We Can All Speak the Same Language, (Perspectives on Warfighting No. 4 (2 ed.), Quantico VA, Marine Corps University, 1996), op cit.
32. Working from "outside" in, these rings are, 1) the fighting or defense mechanism (by analogy, an organism's immune system, or perhaps fists/teeth/claws); 2) the population (analogous to an organism's cells); 3) infrastructure (bones, blood vessels); 4) organic essentials (oxygen, food); and 5) leadership (the brain and nervous system). This last ring is the most important, since it controls all the others. Col John A. Warden III, "The Enemy as a System," (Airpower Journal, Air University Press, Maxwell AFB AL, Spring 1995).
33. For a good discussion of lever points, see "Complexity's Business Model," Scientific American, January 2001, 43.
34. "1. A plan that would accomplish, or is related to the accomplishment of a mission. 2. The scheme adopted to accomplish a task or mission." Joint Pub 5-0, GL-5.
35. See Robert Jervis, "Complex Systems: The Role of Interactions" in Complexity, Global Politics, and National Security, ed. David S. Alberts and Thomas J. Czerwinski (Wash DC, National Defense University, 1997), 45-71.
36. Interestingly, Clausewitz anticipated many of the insights of complexity theory and their implications for war in his discussion of "friction" in On War. For a very interesting discussion of this, see Barry D. Watts, Clausewitzian Friction and Future War, McNair Paper 52 (Wash DC, National War College Press, 1996), op cit.
37. See Barry D. Watts and Dr. Thomas Keany, Gulf War Airpower Survey, Volume II, Part 2, "Effects and Effectiveness" (Wash. DC, USGPO, 1993).
38. Apportionment is the "assignment of the total expected effort by percentage and/or priority that should be devoted to the various air operations and/or geographic areas." [JP 3-56.1, IV-7.] It is usually expressed as a daily percentage of an ATO's effort devoted to force application categories (e.g., 30% devoted to strategic attack, 25% to offensive counterair, etc.). It is recommended by the JFACC and decided by the JFC. Its largest drawback is that it conveys weight of effort, not effectiveness. It implies that all platforms and sorties are equal (which they are not), ignores the synergy gained by attacking across multiple "categories" of airpower, and implies that the apportionment categories equal objectives. All of these lead to potentially dangerous misconceptions about the rightful uses of airpower and represent a legacy of ground force mistrust of the air component.

39. See the Air Campaign Planning Handbook, 35-40, for an expanded discussion.
40. Col Phillip A. Meilinger, Ten Propositions Regarding Airpower, (Maxwell AFB AL, Air Force History and Museums Program, 1995), 20.
41. Stephen T. Hosmer, Psychological Effects of U.S. Air Operations in Four Wars, 1941-1991: Lessons for U.S. Commanders (Santa Monica CA, RANDCorp., 1996), 189.
42. David Rohde, "Sight of a B-52 Makes Northern Alliance Troops Shout With Joy," New York Times, 1 Nov 01.
43. Hosmer, Psychological Effects of U.S. Air Operations, Chap. 12. This book should be a mandatory reference for all air planners, JFACCs, and Joint Force Commanders.
