



Targeting Organizations

Centralized or Decentralized?

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Contents

<i>Chapter</i>		<i>Page</i>
	DISCLAIMER	<i>ii</i>
	ABSTRACT	<i>v</i>
	ABOUT THE AUTHOR	<i>vii</i>
1	INTRODUCTION	1
2	CENTRALIZATION OR DECENTRALIZATION?	3
3	TARGETING AND ORGANIZATIONAL STRUCTURE	9
4	THE EVOLUTION OF TARGETING	17
5	FINDINGS, OBSERVATIONS, AND RECOMMENDATIONS	37

Tables

1	Centralization and Decentralization Characteristics	6
2	Organization and Target Matrix	14

Abstract

This study analyzes the evolution of targeting organizations to identify their strengths and evaluate their impact on future organizations. While both strategic and tactical targeting are discussed, the primary emphasis is on the former. On the eve of its entry to World War II, the Army Air Corps did not even have an intelligence organization. The air forces had to learn how to get past bureaucratic infighting to ensure dissemination of targeting information to all applicable agencies. As the war drew to a close, Air Force planners saw the necessity of unified effort and attempted to centralize the targeting function. The Korean War brought more problems to the surface for targeteers. Should the commander in chief's staff direct the targeting of air forces or should the air component commander handle it? The creation of the Joint Strategic Target Planning Staff in 1960 brought all strategic nuclear targeting under one roof and apparently worked well. Now the question is whether we should bring nonnuclear strategic targeting into a centralized organization. Desert Storm showed the potential for centralized targeting from the United States due to modern communications and cooperation among the services. Therefore, this study proposes creation of a centralized targeting organization that will prepare for rapid execution of strategic aerial warfare against any number of potential adversaries.

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Chapter 1

Introduction

Saddam Hussein's bold move into Kuwait in August 1990 caught most of the world by surprise. Although various US intelligence organizations had indications of the Iraqi buildup and some of the senior planners and intelligence analysts saw this concentration of military might as a "genuine harbinger of trouble,"¹ the actual invasion found US Central Command (CENTCOM) virtually unprepared to respond. Had Saddam decided to press the attack into Saudi Arabia, would we have been able to slow him down? Did we know what targets in his country were vital to his military effectiveness? How much notice must we be given in order to thoroughly examine an adversary and identify those particular targets whose destruction will have the greatest impact? And who should have the responsibility of choosing those targets?

The US military establishment has wrestled with the questions of target selection on numerous occasions. Prior to the Combined Bomber Offensive (CBO) of World War II, competing groups of civilians and military experts sent conflicting recommendations to the military commanders.² The conflict in Korea saw the Navy disassociate itself from the Air Force planners because the Navy felt it could do a better job of targeting.³ The Vietnam War showed us a president and his closest advisors who selected the targets for destruction. During the Persian Gulf War, senior Air Force planners at the Pentagon sent a liaison officer to Riyadh to get an independent view of the operations. CENTCOM commanders dubbed him "the Pentagon spy" and refused to cooperate with him.

The central question to this study—Who should develop the target list? Other key questions: Is it better to let each unified commander produce a list of the targets within that particular theater? Or should a group at the Air Staff, the Joint Chiefs of Staff (JCS), or possibly the Department of Defense (DOD) level prepare target lists for all commands? Should a distinction be made about who selects tactical versus strategic targets? Should B-52 targeting be conducted by one agency while another does F-16 targeting?

In order to gain the most benefit from airpower, there needs to be a systematic method of determining which targets, if destroyed, will force the enemy to capitulate most quickly. That is the purpose of targeting—a process that designates targets and applies weapons as dictated and constrained by doctrine, strategy, force structure, and capabilities.

In searching for answers, certain distinctions must be made. Is there a difference between targets types? What separates tactical from strategic targets? What about weapons—should they be broken into similar divisions? Is there a set of circumstances that favors a centralized organization over a decentralized one? What functions call for centralization?

Could a decentralized organization produce equivalent results? And, finally, should there be a relationship between organizational structure and target type?

In an attempt to resolve the question of organizational or targeting links, the advantages and disadvantages of certain organizational structures need to be examined. After discussing these aspects of organizational theory, target types and the targeting function must be defined. Then, the history of various targeting organizations will show how the US military has battled over the targeting issue for many years.⁴ Finally, is there sufficient reason to consolidate worldwide strategic targeting in a centralized organization that would be responsible for the creation and maintenance of target lists for all potential enemies of the United States?

Answering the targeting questions will be no easy task. The evolution of targeting organizations was a painful experience during the Air Force's formative years, and further changes will run into resistance at many levels. As the Italian airpower theorist Giulio Douhet recognized back in the 1920s, "the choice of enemy targets . . . is the most delicate operation in aerial warfare."⁵

Notes

1. Editors of *US News & World Report*, *Triumph without Victory: The Unreported History of the Persian Gulf War* (New York: Times Books, 1992), 28-31.

2. Alfred C. Mierzejewski, *Collapse of the German War Economy, 1944-1945: Allied Air Power and the German National Railway* (Chapel Hill, N.C.: University of North Carolina Press, 1988), 61-85. The Enemy Objectives Unit (EOU) violently opposed an attack on transportation proposed by Deputy Supreme Commander Arthur Tedder, claiming attacks on oil would bring about collapse of the German economy sooner.

3. Robert Frank Futrell, *The United States Air Force in Korea, 1950-1953* (Washington, D.C.: Office of Air Force History, 1983), 52-54; and Tom Mathews, "The Secret History of the War," *Newsweek*, 18 March 1991, 30.

4. Maj Richard L. Eilers, "JSTPS 2000," research paper (Maxwell AFB, Ala.: Air Command and Staff College, 1986), 3.

5. Giulio Douhet, *The Command of the Air*; trans. Dino Ferrari (New York: Coward-McCann, 1942), 59.

Chapter 2

Centralization or Decentralization?

The targeting process may be conducted at any level—from the fighting units in-theater to a central organization, far removed from the battlefield. There are certain advantages, as well as disadvantages, to delegating the targeting function to the unit level. The same can be said for centralizing this process. But before going into the differences between centralization and decentralization and the variables that impact the organizational structure question, two terms require definition.

When discussing the qualities of a good organization, many people confuse the terms *efficiency* and *effectiveness*. Efficiency deals with the best return per unit of input. An efficient process produces more output per unit of input than an inefficient process. The object is to maximize output, minimize input, or both. On the other hand, effectiveness deals with producing the right product. If the process achieves the goals established by the organization, it is effective. The two terms are not synonymous. An efficient process may not be effective if the final product is not what the organization desires, regardless of the ratio of input to output.¹ Clearing up a misunderstanding of these terms is important because “the arguments advanced for centralization are generally based on efficiency. In contrast, the arguments for decentralization deal with effectiveness.”²

When Congress passed the DOD Reorganization Act of 1958, it empowered the secretary of defense to create new agencies or entities in the name of both efficiency and effectiveness. “Whenever the Secretary of Defense determines it will be advantageous to the government in terms of effectiveness, economy or efficiency, he shall provide for the carrying out of any supply or service activity common to more than one military department by a single agency or such other organizational entities as he deems appropriate.”³ The basic goals of this reorganization were to improve support for combat forces, to improve and streamline administrative procedures while reducing time lags in the decision-making process, and to reduce undesirable duplication among similar agencies in different services.⁴ These goals appear to be suitable for a good targeting organization. But will they be best attained through centralization or decentralization? Before making a decision of this magnitude, the advantages and disadvantages of each must be examined.

Centralization offers many advantages to an organization. They include economies of scale, consolidation of expertise, maximum conformity and integration, consolidation of leadership, potential for better decisions, and standardization of output.⁵ One of the most obvious advantages of centralization is economy of scale. The argument is for reduced cost by consolidating many lower functions at a higher level. If all targeting is accomplished at

one agency, the lower levels may be cut back or totally eliminated. While functions can be brought together at a higher level, so can the expertise of individual people. Digesting multisource information and gleaning any applicable targeting data require an experienced analyst. Instead of thinly spreading these talented analysts among the various commands, it probably makes more sense to bring the expertise into one agency. With all personnel in one location, an organization may achieve maximum conformity of working standards and ensure smooth integration from all parts of the workforce. All the decisions are made at one point, ensuring no confusion as to objectives. Since all the decisions are made at the one point, the leadership of the organization can exert strong control. And provided the leader has extensive experience in the operation of the organization, the potential for better decisions exists. These decisions have a direct impact on the end product. Decentralized agencies tend to customize their product based upon the changing desires of the users. By placing all targeting under one organization, the output would be uniform. A standardized format could be developed by taking into account the inputs from all the users to develop a product acceptable to everyone. It is important not to concentrate on a standardized output without first listening to the customers. "If the clients are not consulted prior to the implementation of some standardized procedure or product, the organization may find itself in a situation of producing something no one will [use]."⁶

While these advantages of centralization are valid, we must not forget there are always some negative aspects that need to be examined. Consolidation of numerous subordinate functions into one large organization presents the possibility of swamping certain individuals with too much information from too many sources. By bringing all the targeting functions into one organization, our centralized agency would be responsible for analyzing intelligence data to determine targets in all countries of the world. Information overload is a distinct possibility.

Besides dealing with tremendous amounts of information, a centralized organization might lose the flexibility offered by smaller agencies. If a certain user has a new requirement, the centralized organ needs to coordinate any proposed changes with all users of the end product. This need to coordinate among various clients may give the different users the impression the centralized organization is dictating what the product will be instead of providing what they need. The customers may see the service organization as too authoritarian to suit their purposes. Instead of asking what the users want, a centralized agency may get in the habit of telling them what they will get.

As decision making is forced to the top levels of a centralized structure, innovation and initiative are squelched down the corporate ladder. There is very little incentive for middle- and lower-level managers to try new approaches, since there is little room for movement within the executive ranks. Why try a new approach when there are no rewards to be given if it succeeds? Putting too much emphasis on centralization can also dampen the workers' drive for improvement and taking responsibility. In 1962 a Sub-

committee of the House Armed Services Committee reported “the imposition and operation of an overcentralized system will eventually also result in breeding mediocrity of its members. . . . It will attract those who prefer to rely on others to do their thinking and deciding for them.”⁷ One final disadvantage of centralization is that it can lead to large staffs and staff layering. As the decision-making power is consolidated, the one making the decisions may require more and more support to screen incoming data and ensure only the most pertinent information goes through.

While there are many positive and negative aspects of centralization, one must also consider the advantages and disadvantages of decentralization. Advantages of decentralization include faster, more responsive decisions, greater flexibility, more initiative at lower levels, reduced coordination efforts, reduced administration, and redundant capabilities.⁸ By moving decision making down the structure, response time is cut as the person making the decision is closer to the situation. The organization can react more quickly in this arrangement than if it had to route all decisions through a central location. In addition to more rapid decisions, decentralization can lead to greater flexibility in dealing with problems. A small unit is able to adapt to unexpected circumstances with more ease than a large, cumbersome organization. Flexibility is often the by-product of innovation. As responsibility and functions are dispersed throughout the agency, individuals can express an amount of initiative rarely seen in centralized structures. Given the opportunity to “strut their stuff,” some employees will take risks and make valuable, new contributions in the process. More autonomy leads to a reduction in the coordination game. Since not every aspect of a decentralized organization must be standardized, the costs of ensuring that all subunits are performing identically are eliminated. Also eliminated is much of the administrative work at the headquarters. With each dispersed portion of the whole responsible for its own operations, those at headquarters do not have to deal with the day-to-day minutiae. Several of the smaller agencies—when decentralized—might perform identical functions but with a focus on certain areas. If for some reason one of the units failed to operate, the others could pick up the slack. This redundancy could avert a catastrophic failure, which might occur if there was only one unit performing a critical function. Decentralization offers many advantages, but there are some drawbacks as well. Included among these are duplication of effort, localized use of expertise, difficulty in standardizing change, and lack of uniformity in decisions or output.⁹ If two agencies perform similar functions, but in separate locations, this duplication of effort is wasteful. The resources and manpower required to maintain these duplicate operations can be a drain on the parent organization. Separate operating locations demand the careful disbursement of expertise and specialized equipment. If there are but two experts on a certain procedure and more than that number of operations requiring their services, how are they to be assigned? Some units will not function as well as those that get the expertise. When changes are necessary throughout

a decentralized organization, it is difficult to ensure all subunits react the same way. Detailed instructions go to subordinate managers, who must all interpret the instructions similarly. The possibility for confusion exists. If changes are difficult to coordinate and some agencies have experts while others do not, the potential for a lack of uniformity in decision making or end products is quite high. The following table summarizes the advantages and disadvantages of both centralization and decentralization.

Table 1
Centralization and Decentralization Characteristics

Centralization	Decentralization
<p>Advantages:</p> <ul style="list-style-type: none"> Economy of scale Consolidation of expertise Maximizes conformity and integration Strong leadership Better decisions Standardized output <p>Disadvantages:</p> <ul style="list-style-type: none"> Information overload Reduces flexibility Lack of innovation Breeds mediocrity Large staffs 	<p>Advantages:</p> <ul style="list-style-type: none"> Quicker, better quality decisions Greater flexibility Encourages initiative Reduces coordination Reduces administration Redundant capabilities <p>Disadvantages:</p> <ul style="list-style-type: none"> Duplication of effort Localization of expertise Difficulty of standardized change Lack of uniformity

All these pluses and minuses need to be considered before any decision is made concerning the appropriate structure for any given organization. There are many variables that dictate how much weight should be given to certain advantages or disadvantages when deciding the issue. The purpose and goals of the organization are foremost. A simple product may be produced at various dispersed locations, but a highly complex process needs to be centralized. Large organizations have different needs than smaller ones. Time pressures and the criticality of standardized output must be factored in.

With all these factors to consider, is there a preferred structure for targeting functions? Should there be a difference between tactical and strategic

targeting? Before we can evaluate the merits of centralization versus decentralization in the targeting process, we must study the targeting function to see if there is a relationship between targeting and organizational structure.

Notes

1. Lt Col Joseph Scoppa Jr., "Toward Realistic Decentralization" (paper presented at Auburn University, Auburn, Ala., and Air War College, Maxwell AFB, Ala., April 1972), 56.
2. James Hannan and Louis Fried, "Should You Decentralize?" *Computer Decisions*, February 1977, 41, quoted in Stephen H. Lawrence, "Centralization and Decentralization: The Communications Connection," Program on Information Resources research report (Harvard University, June 1982), 8.
3. *Department of Defense Reorganization Act of 1958*, Public Law 58-599, 72 Stat. 514, 85th Cong., 2d sess. (6 August 1958), 202(c)(6), quoted in Maj Ellis C. Vander Pyl Jr., "The Single Agency in the Department of Defense," research report (Maxwell AFB, Ala.: Air Command and Staff College [ACSC], June 1967), 1.
4. Vander Pyl, 53-54.
5. Air Force Logistics Command, "Managing Change in Organizations: A View of Centralization within the Department of Defense," 1 May 1981, 5-6; and Lawrence, 11-12.
6. Lawrence, 13.
7. House Armed Services Committee, *Report of Special Subcommittee on Defense Matters*, no. 69, quoted in "Overcentralization at the Pentagon: A Warning and Remedy," *NAVY* (September 1962), 8, quoted in Maj James R. Landreth, "The Effects of Centralization on the Decision Environment," research report (Maxwell AFB, Ala.: ACSC, June 1967), 87.
8. Air Force Logistics Command, 7-8; and Landreth, 29.
9. Landreth, 30.

Chapter 3

Targeting and Organizational Structure

From its inception, the United States Army Air Service (later, the Army Air Corps, and, presently the Air Force) traditionally built flying units from aircraft with similar capabilities. As technology evolved and aircraft became more specialized, Air Force planners assigned certain air assets to strategic or tactical commands based on their ability to perform specific missions. That line was distinctly clear as the Strategic Air Command (SAC) assumed the bombing role and had very little to do with the fighter-oriented Tactical Air Command (TAC).

But these lines were not as distinct as many assumed. Strategic bombers (B-29s and B-52s) played a critical part in successfully stopping the North Korean advance on Pusan.¹ They also played a critical part in breaking the siege of Khe Sanh by attacking enemy supply lines and forces—inherently tactical missions.² Likewise, F-111s attacked strategic leadership bunkers as well as individual tanks during Operation Desert Storm.³ The important point is that the weapon system used to conduct the attack is irrelevant. A weapon system is neither inherently strategic nor tactical—the mission and the target determine that designation.

The impact of target destruction on the conflict as a whole determines whether the target is strategic or tactical. An immediate impact on the outcome of the battlefield situation indicates a tactical target. A much longer-lasting and more widespread result signifies a strategic target. Tactical targets are those “whose destruction will affect surface operations directly and immediately, though limited in scope and time.”⁴ Examples of tactical targets include enemy troop, supply, artillery, and armor concentrations; oil, fuel, and ammunition dumps in the combat area; forward enemy airfields; railheads, rail bridges, lines, and yards leading into the combat area; and highways and highway bridges.

On the other hand, the destruction of strategic targets, while also directly affecting surface operations, takes more time to be felt on the battlefield. Although the results are not as immediate as the destruction of tactical targets, the impact is “more encompassing and enduring”—affecting the entire war, not just a particular battle.⁵ Examples of strategic targets include factories producing oil, rubber, aircraft, steel, armor, and munitions; entire transportation systems; power and electric industries; and the population’s morale—the vitals of the enemy’s war effort.

Targeting

This division of target types is necessary because they have different characteristics, and these characteristics impact the targeting process. Tactical

targets tend to change depending on the ebb and flow of the battle. As the scene of the fighting changes, so does the location of troop concentrations, supply depots, roads, and rails into the combat area. These targets cannot be preplanned; they must be identified with the changing situation on the battlefield. In targeting terms, the probability of target perishability is high, meaning there is a strong likelihood that the value of the target will significantly decrease over time.⁶ The commanders involved in the battle are best suited to identify and plan the attack against these fleeting tactical targets. Response time is often critical in dealing with them.

Strategic targets, on the other hand, tend to be easier to find. While large concentrations of enemy reserves, mobile missile launchers, and ballistic missile submarines may prove difficult to locate, a majority of strategic targets are not going anywhere. The factories, the marshaling yards, and the power plants are fixed installations. Since these targets can be identified before a conflict begins, this allows “pre-selection made with due consideration of the overall strategy of the war plan. Initial selections in this case are made on a level where such plans are available”—at the JCS level or even higher.⁷ Strategic attack “can only assume significance if it is so designed and directed that the damage wrought to the enemy’s war industries is felt directly by the military forces that he has or can put in the field against us.”⁸

Categorizing targets as either strategic or tactical is but one small aspect of the targeting process. The necessity of accurate target selection is unquestionably one of the most critical functions an air force must conduct prior to launching an effective air campaign. Equally important is the timing of when this target selection can be made. “In the field of strategic intelligence, and particularly for selection of targets . . . at the very start of hostilities, there is an imperative need for complete and accurate information.”⁹

In October 1948 at Maxwell AFB, Alabama, an Air Command and Staff School student wrote of the vital nature of target selection. He said if we determine the value of the individual inputs to a strategic air campaign by costs in terms of time, money, and resources or the amount of effort required, we might decide that many factors are more important than target selection. But if we instead weigh the contribution to the ultimate goal—capitulation of the enemy [brought about by] air action against the vital points of its national structure—we see that target selection . . . takes a position of extreme importance. Target selection is a vital aspect to determining whether the vast national treasure put into our air force will bring substantial dividends, whether the effort by all the aircraft industry workers and incalculable natural resources will pay off or merely be wasted on harassment of the enemy, and whether the risk of American lives can be held to a minimum.¹⁰

In order to deal effectively with the delicate process of targeting, American military planners have tried to develop a systematic way of collecting intelligence, selecting targets, and identifying the best weapons to destroy the chosen targets. Douhet did not think it was possible to formulate a

regimented process to accomplish this process, writing that “no hard and fast rules can be laid down on this aspect of aerial warfare.” He said there were too many circumstances—material, moral, and psychological—which were of real importance but too difficult to estimate to provide even the most general outline for target selection. Douhet recognized the value of insight, concluding, “[i]t is just here, in grasping the imponderables, in choosing enemy targets, that future commanders of Independent Air Forces will show their ability.”¹¹ Contrary to Douhet’s premise, we have tried to grasp the imponderables and develop a systematic method of target planning.

The targeting process, as described in Air Force Pamphlet (AFPAM) 200-17, *An Introduction to Air Force Targeting*, “involves a sequence of steps by which target intelligence and target materials are produced (through the fusion and analysis of multiple sources of intelligence) and used to support operational decision-making and force employment.”¹² Some of the steps referred to above may include developing targeting strategies and concepts, locating and identifying targets, developing target lists, prioritizing targets, determining the most suitable weapon to damage a particular target, and producing maps, tables, and other targeting materials.¹³

This concept of target identification and classification rests firmly on the foundation of intelligence. For without the necessary information, identifying what the potential targets are and where they are located would be impossible, making any air force impotent in a war. AFPAM 200-17 states that intelligence on enemy offensive and defensive capabilities, posture, and intentions is required, as well as information on enemy installations and facilities. Other critical data concerns time and target perishability constraints.¹⁴ The necessary intelligence comes from all sources. Whether collected by the National Security Agency (NSA), Central Intelligence Agency (CIA), Defense Intelligence Agency (DIA), service intelligence commands, or any other source, pertinent data must be made available to the targeting process in a timely manner. As pointed out by Lt Gen Charles A. Horner, the joint force air component commander during the Gulf War, “[t]he close integration of national, regional and local collection capabilities and analysis is essential to the battlefield management decision-making process.”¹⁵

It is up to target analysts to collate the data and determine the value of the collected information. If the analysis indicates a particular installation from the intelligence database might impact a present or future conflict, it may be put on a list of possible targets. These targets are not placed on the list by whim; the analysts follow strict guidance as to what constitutes a possible target. Nor are all targets of equal importance. Attacking one type of target may not produce the same impact on the war as attacking another. “Consequently, determining which targets are the key targets to be struck is one of the most important functions in targeting.”¹⁶ The targeteer must prioritize targets on the list. The targeteer’s job does not end with the production of a prioritized list of targets, no matter how accurate that list. Not all weapons employ the same damage mechanism, and, there-

fore, do not damage a given structure to the same degree. The targeteer must try to find the best match between available weapons and the target—a process called *weaponing*. Air Force Manual (AFMAN) 11-1, *US Air Force Glossary of Standard Terms*, defines the word *weaponing* as “the process of determining the quantity of a specific type of weapon required to achieve a specific level of damage to a given target, considering target vulnerability, weapon effects, munition delivery errors, damage criteria, probability of kill, weapon reliability, etc.”¹⁷ *Weaponing* is not something that can be accomplished at a moment’s notice. “*Weaponing*, like the rest of the targeting process, is most reliable when there is enough time for a systematic analysis of the target components, weapons effectiveness, etc.”¹⁸ In crisis situations, a raw target list may be sent to the field, placing the burden of *weaponing* on the user. During the initial days of Operation Desert Shield, the Pentagon helped to produce a rough-cut target list, but it was up to Generals Horner and Buster Glosson to refine the list and “figure out which weapon or delivery system was appropriate for each.”¹⁹ The end products of this process include “validated target nominations (in order of priority)” as well as recommendations as to weapon selection.²⁰

The targeting process, then, begins with intelligence. Simply put, intelligence experts comb through the mountains of information available on a given country. This information may come from open sources such as brochures on the country, commercially available maps, and everyday literature. Other sources might include blueprints of factories, interviews with people from that country, and clandestine operations. The targeting organization is not responsible for collecting the intelligence but analyzing it for pertinent information. Once the analysis identifies a certain target, it needs to be catalogued and prioritized. The targeting organization can then calculate the weapons and aiming points that would produce the damage level necessary to render the target ineffective. “Each target set should have aimpoints appropriate to each weapon type being considered so that each weapon, if selected, will maximize its damage ability.”²¹ The list of potential targets and weapons combinations helps a commander decide what will be hit and by what weapon.

Now that the targeting process is clear, we must determine who is best qualified to perform that function. Should each command have its own targeting experts or should there be one centralized targeting agency for all targets?

Structure of Targeting Organizations

As the battle lines ebb and flow, tactical targets appear but possibly for only a short period of time. Enemy troop concentrations, bridges in the immediate battle area, and enemy supply buildups all require prompt action by forces in the immediate vicinity. Target identification and attack

must occur quickly while the opportunity presents itself. Such situations require quick, responsive targeting cells located near the action. The ground forces, working in close coordination with the air forces, can designate those targets that, if destroyed, will have an immediate impact on the battlefield situation. It does not make sense for some group, far removed from the situation, to try to select which targets demand attack. Those fighting at the front should determine the tactical targets. AFPAM 200-18, vol. 1, *Intelligence: Target Intelligence Handbook—Unclassified Targeting Principles*, sums it up well: “Generally, tactical operations are decentralized, requiring equipment, data bases, and trained personnel at several locations. Mobility, flexibility, durability, and low cost are desirable when operating in this mode.”²²

While tactical targets demand immediate action, many strategic targets, on the other hand, can be identified long before missions are flown. Most strategic targets are not going to move about like tactical targets. Enemy leadership centers, petroleum, oil, and lubricants industries, power-generation facilities, transportation centers, and the like are easily identified. These fixed targets “can be observed, identified, categorized, analyzed, and included in studies and on lists in preparation for any potential conflict.”²³ “Since time and information are always critically short on the battlefield, peacetime is the best time to acquire and organize the detailed knowledge of potential enemies and battlefields.”²⁴ Another reason to centralize strategic targeting is the criticality of the product. Focusing on the wrong targets can result in wasted national treasure and the loss of additional Americans lives. Former Secretary of Defense Robert S. McNamara remarked on centralization in relation to the importance of the outcome, “There is nothing innately desirable about centralization. But the fact remains that when national security decisions affect broad interests they must be made from a central point, not from subordinate points each specially concerned with one part of the forest—and not even by a committee made up of representatives of the different parts of the forest. For the nature of committees is to compromise their special interests, which is not the same as making the decision from the point of view of the national interest.”²⁵

In view of the above discussion, it can be concluded that there is a definite relationship between organizational structure and target type. Strategic targeting should be centralized and tactical targeting should be decentralized. Table 2 shows how various factors fall into one of these pairings or the other. The criticality of strategic targeting, in addition to the target’s fixed nature and time insensitivity, points to centralization. By performing this targeting in a centralized agency, employing all-source information and a collective group of experts, the resulting process should not only be effective but efficient as well. On the other hand, the fleeting, situational nature of tactical targets calls for localized, prompt action. Efficiency can be sacrificed due to the time urgency; effectiveness is mandatory. A decentralized organization can provide the flexibility demanded by tactical targeting.

Table 2
Organization and Target Matrix

	Centralized	Decentralized
Strategic Targets	Efficient/Effective Fixed/Stable Fairly Consistent Preplanned Outcome Critical	
Tactical Targets		Effective Mobile/Fleeting Situational Ad Hoc Flexibility

During the short history of aerial warfare, the question of whether tactical targeting should take place near the battlefield or in a centralized location (far removed from the action) was never raised. While a major battle took place between the ground commander and his aerial counterpart as to whom should direct the air activity over the battlefield, the issue is closed today—the theater air commander should and does maintain the responsibility for tactical targeting. The real problem has centered on strategic targeting. Do centralized organizations perform better than decentralized ones? How do we determine the relative success of organizations?

One could look at the final war outcome and draw some conclusions about the targeting, but how much weight goes to air targeting versus land operations or naval action? Tracking the impact of bombing on certain industries does not make the determination of organizational success any easier because complete destruction of the wrong industry has little impact on war termination. Since intelligence is the key to targeting, access to information is the gauge used in this study to measure the success of a targeting organization. An agency cannot make an informed decision if denied crucial data. Therefore, timely dissemination of intelligence to all subunits requiring that data is a sign of a successful targeting organization. An examination of various targeting agencies provides a historical basis for completing the evaluation of the relationship between organizational structure and the targeting function.

Notes

1. Robert Frank Futrell, *The United States Air Force in Korea, 1950-1953* (Washington, D.C.: Office of Air Force History, 1983), 114-46.
2. John Schlight, *The War in South Vietnam: The Years of the Offensive, 1965-1968* (Washington, D.C.: Office of Air Force History, 1988), 276-87.
3. *Conduct of the Persian Gulf Conflict: An Interim Report to Congress* (Washington, D.C.: Department of Defense, July 1991), 6-1-6-4.
4. Col John H. deRussy, "Selecting Target Systems and Targets," *Air University Quarterly Review*, spring 1947, 71.
5. Ibid.
6. Air Force Pamphlet (AFPAM) 200-17, *An Introduction to Air Force Targeting*, 11 October 1978, 4-4.
7. DeRussy, 72.
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Chapter 4

The Evolution of Targeting

Although both the British and American air forces were strong proponents of strategic bombing in the 1930s, only the British expended the requisite energy to prepare for war by way of developing a potential target base. In 1936, with the creation of an Air Targets Subcommittee within the Industrial Intelligence Centre, Britain went about prioritizing possible industrial targets in Germany should the rising tensions on the Continent erupt into war.¹ Back in the United States, targeting was discussed, but that was about all.

Air Corps Tactical School

Although the US Army Air Corps Tactical School (ACTS) advocated the bombing of vital industrial targets, there was very little in the way of official writings on targeting theory prior to World War II.² In October 1939, Maj Muir S. Fairchild, an instructor at ACTS, dealt with the problem of target selection in one of his lectures. He was considering what would be the most decisive target for bombers. Would it be the enemy military forces? Possibly a nonmilitary target? What about the national infrastructure? Reasonably enough, Fairchild concluded that the answer would differ from country to country.³ The concept of targeting was a topic of discussion, but the specific details were left to individual study, for only a study of particular cases would produce useful answers.

Although the military planners recognized the importance of target selection soon after World War I, they did little to refine their ideas and develop a systematic method of targeting until they were thrust into World War II. For the first time, an attempt was made to study targets and target systems in order to identify “those whose destruction would do the most to reduce the military power of the enemy.”⁴ Considering that no organization or precedent existed, the targeting process took shape very quickly.

World War II—European Theater

The air forces lacked the necessary intelligence organization to develop a comprehensive targeting plan. In anticipation of its possible entry into World War II, the Army Air Corps created the Air War Plans Division (AWPD) in June 1941 to build a plan to defeat Germany. This four-man division determined the number of aircraft necessary to bring about the destruction of Germany and produced the first set of targeting priorities in August 1941 in the form of AWPD/1.⁵ One of the planners commented that “there were no commonly

acceptable formulae for such things as: (1) the methods to be employed in the air offensive, (2) the specific objectives to be sought, (3) the targets to be attacked.”⁶ Despite the lack of any systematic target analysis, AWP/1 recommended attacks against the German electrical power, transportation, and oil systems.⁷ This target list was based on the teachings at ACTS, emphasizing the use of daylight, high-altitude, precision bombing.

Looking back at the air forces’ targeting performance, Gen Henry H. “Hap” Arnold—who served as chief, US Army Air Corps, from 1938 to 1941 and then as commanding general (CG), US Army Air Forces (USAAF), until 1945—noted there was “the lack of a proper Air Intelligence organization.” He added “our target intelligence, the ultimate determinant, the compass on which all the priorities of our strategic bombing campaign against Germany would depend, was set up only after we were actually at war.”⁸

Upon the United States’s entry to the war, a number of American organizations came into being for the purposes of intelligence and target analysis. Although the British had a fairly well-developed intelligence network, the US air forces literally had none. As the Americans began arriving in England, they had to rely heavily upon the British for facilities and information. The Army Air Corps did not even have an intelligence organization; they had to call on the Army for intelligence matters.⁹

To diminish the reliance on Army and British sources for intelligence, the Air Corps created the position of assistant chief of air staff-intelligence (AC/AS A-2) in 1942. AC/AS A-2 had an analysis division, which included a European branch but still relied on information gathered by other units. Similar A-2 units were formed at every subordinate command level. Because the AC/AS A-2 was so far removed from the theater of operations, it had very little influence on the targeting question.¹⁰

An organization that made a significant impact was the Research and Analysis Branch of the Office of Strategic Services (OSS). In the spring of 1942, OSS established a branch office in London called the Economic Warfare Division (EWD). In April, EWD created the Enemy Objectives Unit (EOU) with the task of providing targeting information to Eighth Air Force. The EOU was a semi-independent agency with a strictly advisory role. Since EOU consisted mostly of academics who were given military rank for the duration of the war, they only had limited access to classified information. Despite these restrictions, EOU desired to show their full-time military counterparts their abilities. Instead of gaining the confidence of other intelligence agencies, some authors claim the EOU alienated many because of their egotistical nature and love for bureaucratic politics.¹¹ Due to the EOU’s advisory role, their contributions, while significant, were usually informal in nature.¹²

One final organization that played an important part in the American targeting policies of the European theater was the Committee of Operations Analysts (COA). Created on 9 December 1942 by General Arnold because he was not completely satisfied with the analysis done by his AWP/1, the COA was a group of prominent lawyers, academicians, and businessmen both in

and out of uniform along with a few regular officers. Their task was to “provide a comprehensive analysis of the German war economy in time to guide the proposed combined bomber offensive.”¹³ They specifically looked for bottlenecks in the war-making capability of the Axis and Axis-controlled countries.¹⁴ Since the US strategic bombing force was still in its infancy and could not conduct a strategic campaign against a variety of targets or target systems, these advisors had to look for the one or two vital target systems that would produce the greatest impact on the war in Europe. Relying primarily on open sources, it produced and delivered its report on 8 March 1943 and then focused its attention on Japan.

With all these agencies working on intelligence and targeting plans, priorities, and objectives to accomplish the same goal—the defeat of Germany—one would think that cooperation was a given, but this certainly was not the case. “The combination of novelty, fear, and dynamism meant that the selection of targets during the war was done haphazardly. Allied air strategists learned as they went along while operating in a highly competitive bureaucratic environment.”¹⁵ The competition among the numerous intelligence agencies was fierce. Similar to statisticians who can twist the data to show whatever results they want, some of these organizations tasked with analyzing intelligence information would frequently “develop an interest in the way it will be used. They become loyal to a particular strategy, seek information that confirms their choice, and attempt to exclude or deprecate information that challenges their position.”¹⁶ Instead of sharing pertinent data among themselves, these organizations would withhold the data if it did not support their arguments.

All of these organizations had a problem; when they were created (AWPD in 1941; EOU, COA, and AC/AS A-2 in 1942), each had its own image of what constituted success and when it was needed. The types of targets chosen for destruction greatly depended on the overall objectives and projected length of the war. As Graham T. Allison points out in his book, *Essence of Decision*, “each analyst attempts to emphasize what is relevant and important, and different conceptual lenses lead analysts to different judgments.”¹⁷ Even though they all had an input, as a member of EOU said, each “voice was but one of many in the shaping of bombing policy.”¹⁸

And these voices were not in tune; each was trying to be heard above the rest. In December 1942, the Subcommittee of Force and Probabilities was formed on the recommendation of the COA. The members of COA felt the planning factors used by the planners of the AWPD were overly optimistic, based on peacetime exercises by highly trained crews. New, revised calculations of the force needed to destroy a given target successfully would contribute an element of reality to their study.¹⁹ Air Force planners felt they were the ones who should make the planning and targeting decisions, claiming “the civilian analysts and intelligence personnel operated out of their proper province in making such a decision.”²⁰ Maj Haywood S. Hansell of the AWPD asserted that “military operations analysts—who had

already evaluated the [air] force's capability to destroy each target system—should have made the final targeting decision.”²¹

Fortunately guidance was forthcoming, for President Franklin D. Roosevelt and Prime Minister Winston S. Churchill met with the combined chiefs of staff at Casablanca in January 1943. One of the outcomes of the Casablanca Conference was the mission of strategic bombardment. The resulting directive tasked the Allied air forces to work out an operational plan with the objective to accomplish “the progressive destruction and dislocation of the German military, industrial, and economic systems and the undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened.”²² Due to the vague nature of the directive and lack of any projected war termination time frame, both the Royal Air Force (RAF) and USAAF retained their freedom of action to conduct the campaign as each saw fit.

The directive had beneficial aspects. It finally gave some indication as to the overall goal of the air forces. Using this guidance, the COA focused its analysis and worked towards a final report in the spring of 1943. In the meantime, USAAF would attack the objectives proposed by the Casablanca Conference. These priority targets were German submarine construction yards, German aircraft industry, transportation, oil plants, and other targets of war industry.²³

The strategic bombing directive was not accepted with open arms. “It was soon agreed within the loose-knit target team in London—representatives of the air forces and of the British Air and Economic Warfare ministries and EOU—that . . . changes were required to make this directive fit our aims and our capabilities.”²⁴ Changes came shortly in the form of the COA's final report on 8 March 1943. The resulting targets were not very different from those originally drawn up in AWPD/1 (and its update, AWPD/42), but the priorities changed. The German aircraft industry, with primary focus on fighter aircraft, moved to the top of the list due to the realization that effective German air defenses would prevent the bombers from accomplishing much of anything. Submarine pens and construction yards moved down to seventh priority because it was easier to hunt them down at sea than kill them in their relatively impervious, reinforced concrete shelters. Added as the number two target by the COA analysis were ball bearings. Most of the remaining objectives were energy (oil and electricity), manufacturing, and industry related.²⁵

To ensure smooth integration of COA's targeting recommendations with the Casablanca directive, on 10 June 1943 General Arnold issued a chief of air staff letter, clearing the way for the CBO. “To set priorities and provide week-by-week guidance in the concentrated attack on the German air force . . . and on ball bearings, . . . the famous Jockey Committee was formed in late June [1943].”²⁶ This committee, the first of the target system working committees, included representatives from British and American air intelligence working groups, as well as from the operational commands.

Cooperation between British intelligence organizations and American air forces surfaced early in the preparation to carry out the CBO. On a mission to Eighth Air Force in July 1943, an Air Staff intelligence officer reported he was “impressed by the very close liaison between A.I.3(c), A-5 of the Eighth Air Force, and A-2 of the VIII Bomber Command.” A.I.3(c) was a branch under the director of intelligence (Operations) of the Air Ministry responsible for the preparation, publication, and distribution of all Air Ministry target material issued to both the British and American air forces in both the United Kingdom and the Mediterranean. The intelligence officer also wrote that the head of A.I.3(c) “has evidenced complete cooperation and a desire to comply if possible with all needs and requests of the Eighth Air Force.”²⁷

Attempts to establish a logical intelligence/targeting structure were not just taking place in England. On 14 October 1943, the Northwest African Air Forces (NWAAF) created the Target Evaluation and Analysis Unit of the Operational Intelligence Branch to conduct such a mission. This unit’s functions were to collect, organize, and evaluate all-source intelligence on theater-specific targets, target systems, target categories, and target areas. They were also to establish and maintain a library and files of target information, prepare programs for the collection and production of target material, and receive and coordinate all demands for target material from subordinate units. Finally, the unit was responsible for the collection of target studies and target information in existence at higher and lateral headquarters.²⁸ The last of these functions indicated the awareness by members of the NWAAF of the necessity to share target intelligence. Although this air force operated in a different theater than the commands in England, its members realized they could reduce duplication and increase efficiency by maintaining close contact with their counterparts.

Just two weeks after the NWAAF created their targeting unit, the assistant chief of staff of Fifteenth Air Force commented on the procedures VIII Bomber Command used for determining targets for strategic bombardment and the desire for Fifteenth Air Force to be involved in the process. The CG, VIII Bomber Command, selected the target for bombardment; but his decision was based on the target priority list, the current status of the proposed target, weather, current operational readiness, and operational plans.²⁹ The list of prioritized targets came from a committee (the Jockey Committee) composed of representatives from the Air Ministry, RAF units, Eighth Air Force, Ninth Air Force, and VIII Bomber Command. These units operating from the United Kingdom were not the only ones targeting Germany. Fifteenth Air Force, flying out of Africa and later from Italy, recognized the importance of participating on the committee. It requested and received permission to join the committee.³⁰

Preparations for the cross-channel invasion upset the equilibrium in the intelligence-targeting community in London. In April 1944, RAF’s Bomber Command and the United States Strategic Air Forces (USSTAF) composed of Eighth and Fifteenth Air Forces—came under the command

of Gen Dwight D. Eisenhower's Supreme Headquarters Allied Expeditionary Forces (SHAEF). Eisenhower's deputy, Air Chief Marshal Arthur Tedder, with support from Air Chief Marshal Trafford Leigh-Mallory and Lt Gen Louis F. Brereton (commander of Ninth Air Force), advocated full employment of the strategic, as well as tactical, aircraft to take part in a tactical rail interdiction campaign directed against the French rail system in order to isolate northwest France for impending invasion. Gen Carl A. "Tooe" Spaatz, with all his subordinate USSTAF commanders and the EOU, demanded to continue striking oil and the Luftwaffe with most of their effort, giving a small portion to preparation of the landing area. The two sides argued vehemently as to the best target for the strategic bomber force. The EOU "launched a bureaucratic guerrilla campaign against the transportation plan. The result was a compromise that provided for attacks on both transportation and oil."³¹ General Spaatz essentially defused the situation and convinced Eisenhower in May 1944 he had enough assets to attack both rail and oil targets.³² Ultra intercepts later that month revealed general petroleum shortages throughout the German war machine and convinced "all concerned that the air offensive had uncovered a weak spot in the German economy and led to exploitation of this weakness to the fullest extent."³³ The ability to change quickly among targeting priorities enabled the Allies to exploit this critical development.

Even after the Normandy invasion, the need for coordinated intelligence efforts in the selection of target systems continued to dictate the creation of specific agencies. Directed in August 1944 to establish a committee to ensure all intelligence requirements in the European theater of operations were identified and prioritized, Brig Gen T. J. Betts proposed the following functions for the new Combined Intelligence Objectives Subcommittee: (1) "to receive and coordinate all requests . . . for intelligence of military significance," (2) "to submit these requests to SHAEF in the form of targets dossiers, assign priorities, and provide any specialist personnel required for investigation on the spot," and (3) "to disseminate the resulting intelligence to the department concerned."³⁴ The quest for efficient use of scarce resources kept the Allies searching for ways to economize their efforts and reduce duplication. Converting intelligence about the enemy's military and civilian situation into targeting data required critical and systematic analysis. Not only was information needed on new or potential targets but continued intelligence of targets previously attacked was necessary.

The functions of the Mediterranean Allied Air Forces' (MAAF) Target Analysis Section included "a close study of the enemy's reaction to attacks in order to determine the extent of repair, camouflage, dispersal, etc. [resulting in] a recommended sequence of target priorities forwarded to USSTAF for inclusion in target priority lists for Strategic Air Forces in the Mediterranean [MASAF]."³⁵ Representatives of the MAAF Target Analysis Section and Fifteenth Air Force Target Section formed the MAAF Strategic Targets Committee, permitting coordinated planning and, to some extent, eliminating the duplication of work. The MAAF Target Analysis Section

periodically prepared comprehensive target intelligence collection plans, directing air target intelligence missions, and focusing the attention and activities of all collecting agencies on information that was required at a particular time. These actions helped ensure unity of effort when a critical product was needed.³⁶

In order to ensure intelligence data was being shared by different organizations, a number of agencies consolidated towards the end of the war. On 10 October 1944, “the intelligence personnel of VIII Fighter Command was integrated into the Intelligence Section of [Eighth Air Force] Headquarters, the functions of which have been consolidated and added to the functions of the Director of Intelligence.”³⁷ In May 1945, Headquarters Eighth Air Force published a report on cooperative efforts at war’s end. This report pointed out that the Combined Strategic Targets Committee was responsible for coordinating intelligence and controlling duplication among the numerous Allied intelligence agencies. “Their weekly reports constitute the final synthesis of the latest and best intelligence available.”³⁸

All this activity coordinating intelligence and selecting the proper targets for destruction did not occur only in the war with Germany. Whereas strategic intelligence on Germany existed when we entered the war, although in the hands of England, no such consolidated source of intelligence on Japan was to be found.

World War II—Japanese Theater

Strategic aerial warfare took a different approach in the Pacific than it did in Europe. While the theater was divided between General MacArthur and Adm Chester W. Nimitz, the bomber force was assigned to neither. Instead, “Twentieth Air Force was born on 4 April 1944. It was a separate strategic bombing command, reporting to the JCS.”³⁹

Twentieth Air Force target planners looked at the strategic vulnerability of Japan and lost their initial enthusiasm for attacking Japanese iron and steel manufacturing. They decided it would be best to concentrate on aircraft plants as their comrades in England were doing. General Arnold again called on the COA to give a second opinion on Japanese targets.⁴⁰

Some of the other agencies involved in independent target analyses and preparation of targeting materials were the Army Air Forces, Military Intelligence Service, Division of Naval Intelligence, OSS, Foreign Economic Administration, and Office of Scientific Research and Development. Realizing that “none of the principal agencies has had available all sources of intelligence and operational information, and not all the personnel of those agencies have been adequately trained in the doctrine and techniques of target analysis,” the JCS directed a study to “make recommendations for the improvement and integration of the analysis of strategic air targets in the war against Japan.”⁴¹

The resulting report (JCS 1020), released on 24 August 1944, recommended a joint target group to “be responsible for all headquarters target analysis functions, provide headquarters data and information on selected targets . . . , rely on existing agencies for the collection of basic data, and relieve other agencies of target analysis functions as it absorbs personnel from them.”⁴² Forming a joint target group could result in a significant economy of targeting personnel as well as an established procedure for the analysis of strategic targets, thus reducing the confusion and lack of unity of purpose. In addition, a consolidated target group could ensure all intelligence data is available to those who need it. Officially established on 11 September 1944,⁴³ the Joint Target Analysis Group (renamed the Joint Target Group just 33 days later), Air Intelligence Division, Assistant Chief of Staff (AC/AS), established certain guidelines:

Adequate target staff procedures for the control and support of strategic air power include:

- a. Systematic selection of those targets which will injure most seriously the enemy’s war-making ability.
- b. Continuous assessment of air attack damage, and of enemy recuperation therefrom, to ensure that attacks upon the target systems selected are sustained or repeated until the desired degree of destruction is attained.
- c. Modification and adaptation of a. and b. above in the light of current intelligence reflecting the developing war situation.
- d. Provision of headquarters data and information on selected targets adequate in detail, form, and quantity for those agencies having responsibility for the planning and execution of operations.⁴⁴

Firmly believing both the quality and quantity of strategic intelligence materials would directly affect the success of the bombing program—and thus the cost and length of the war against Japan—the Joint Target Group hoped to “effect economy, reduce duplication, and promote efficiency in the pre- and postattack analysis of air targets in the war against Japan.” It also planned to “consolidate and coordinate under one head the best available talent on the evaluating, working, and producing levels to be responsible for target analysis and target material.”⁴⁵ All intelligence reports and materials associated in any respect to Japanese air targets would be made available to this group. In order to carry out its charter, the Joint Target Group would

- assemble and analyze all available intelligence concerning Japanese air targets;
- prepare material for use of planning agencies, commands and combat units of the services engaged in the air war against Japan;
- recommend target priorities;
- distribute target materials;
- recommend collection of information to proper agencies;
- prepare special studies for planning agencies; and
- maintain field liaison with using agencies.⁴⁶

To accomplish its functions, the Joint Target Group was organized around four major sections—the Economic Vulnerability Section, the Physical Vulnerability Section, the Evaluation Section, and the Production Section—each with its own responsibilities.

The Economic Vulnerability Section analyzed and collated all applicable incoming target information, prepared studies of both the Japanese war economy and results of attacks on Japanese targets, prepared basic target material for production and distribution by the Production Section, and made recommendations as to further intelligence requirements. The Physical Vulnerability Section determined the vulnerability of Japanese targets to destruction; recommended the best weapons, fuzing, and weapons mix for specific targets; determined the number of weapons and sorties to attain desired damage; analyzed bomb damage assessments for improving effectiveness of attacks; prepared basic target material; and made recommendations as to further intelligence requirements. The Evaluation Section evaluated reports and target materials submitted by Economic and Physical Vulnerability Sections, recommended target priorities, prepared special studies and reports for War and Navy Department planning agencies as requested, and maintained liaison with other planning agencies. The Production Section standardized the appearance of target materials, determined production requirements of and produced all target materials, distributed target materials to appropriate agencies, and maintained direct liaison with using agencies.⁴⁷

Even with a centralized agency responsible for strategic targeting, the process did not function smoothly. Although the COA recommended B-29 attacks on merchant shipping, aircraft plants, urban industrial areas, steel production, antifriction bearings, and electronics industries,⁴⁸ the Joint Target Group decided “there were no strategic bottlenecks in the Japanese industrial and economic systems.”⁴⁹ It might be said that the Joint Target Group fell into one of the characteristic drawbacks of a bureaucratic organization: uncertainty avoidance.⁵⁰ Learning that Japan’s cities were highly flammable and that a substantial part of her war production took place in small factories dispersed throughout urban areas, the Joint Target Group could avoid the problem of detailed targeting by adapting a different bombing technique. Major Hansell, former commander of XXI Bomber Command, contends “the Joint Target Group simply embraced a new tactic [that of area incendiary raids] that was easier to perform and measure.”⁵¹

World War II was unique in that the Allied air forces attempted to gain victory through the direct application of strategic airpower at the heart of the enemy. Unfortunately, our bombing capability and the accompanying intelligence were not sufficiently mature to the extent necessary to bring about a swift and decisive victory. “Conceivably, we could have enjoyed greater success at a smaller cost had we better means to use our new capability—specifically, the ready target intelligence and the ability to use it properly.”⁵² As the war came to a close, there were two primary targeting groups responsible for improving and integrating the analysis of strategic target systems. In the European theater, the Allied Air Force had

the Combined Strategic Targets Committee, while the Joint Target Group continued to function in the Pacific. The end of the war and the activation of the joint US Strategic Bombing Survey (USSBS) led to the demise of these groups. Strongly emphasizing the importance of careful target selection and the need for adequate target intelligence, the USSBS concluded that any serious deficiency in this field at the beginning of any future war might prove disastrous.⁵³

Post-World War II

In response to the USSBS, the JCS directed the creation of a centralized, peacetime agency to ensure there would be no “serious deficiency” in the area of strategic targeting intelligence. Since the Air Staff was principally concerned with this intelligence, it was tasked with the primary responsibility for producing and maintaining air intelligence on the vulnerability of certain countries—including the United States—to air attack. In response to these instructions, the Air Targets Division in the Directorate of Intelligence was established. This division held the primary responsibility for the preparation of target studies for the JCS and the Air Staff, to include

- strategic target system and individual target recommendations,
- weaponeering calculations,
- damage predictions,
- tactical target studies recommendations, and
- coordination through the Directorate of Intelligence on the preparation of air objective folders.⁵⁴

The purpose of this organization was to use all sources of intelligence in conjunction with a consolidated pool of the best analysts to determine the most critical targets or target systems for all countries of the world. Once these targets were identified, weaponeering experts would decide which weapons and employment options (height of burst, yield, aim point) could best damage or destroy those targets selected for any given war plan. All the necessary information for each target-target system would be placed in one location to ensure ease of updating the target materials should additional intelligence be discovered. Current target materials for each war plan would be kept at the executing command.

The selection of strategic targets would demand a tremendous amount of work for a complete analysis of the industrial and economic systems of a country. But once the target data was created, it would not need daily selection of new targets. Prior to a war, we would decide exactly which target systems and targets would produce the desired outcome with the least amount of effort on our part. The final decision as to the most critical one or two systems to be selected for destruction could not be made until the onset of the war due to the possibility of changes relative to time and circumstances.⁵⁵ The advantage of conducting this analytical work for each

country prior to war is that the targets reach the responsible commander already sorted as to priority, and only operational considerations need be reviewed in planning the actual missions.

Before the Air Targets Division began its task, reorganization at the end of 1945 created the Strategic Vulnerability Branch (SVB) within the Air Intelligence Division, AC/AS. SVB's mission was to make a "pre-analysis of the vulnerability of the U.S.S.R. [and other countries] to strategic air attack and to carry that analysis to the point where the right bombs could be put on the right targets concomitant with the decision to wage the war without any intervening time period whatsoever."⁵⁶

To fulfill its mission, there were essentially three phases of the SVB's plan. The first phase was to build a database, called a bombing encyclopedia. Constructing this encyclopedia required pinpointing all potential bombing objectives throughout the world, gathering and coding specific target details on computer punch cards, and producing specific computer runs to create the required listings of the data. As this bombing encyclopedia took shape, the second phase of the SVB's mission could begin—devising and conducting a system of target analyses of the data by both geographic region and industry. The third phase was to produce the necessary materials on selected targets within each country.⁵⁷ These methods of centralizing the targeting function appeared to make sense in peacetime, but—as the Korean conflict would show—the heat of battle usually can disrupt the best plans.

Korean War

Within days of the North Korean invasion of South Korea on 25 June 1950, the Far East Air Forces (FEAF) commander, Lt Gen George E. Stratemeyer, experienced problems coordinating actions between his air forces and those of Naval Forces Far East (NavFE). He concluded that some form of centralized control was necessary to effectively employ the mass of Navy and Air Force aircraft. As the air component commander, he wanted operational control over all land-based and carrier-based aviation operating in the theater. In an attempt to prevent a vigorous objection by the Navy, General Stratemeyer "stated that operational control meant only the authority to designate the type of mission and to specify the targets to strike, within the capabilities of the forces involved."⁵⁸ Joint Strategic Plans and Operations Group drafted a directive stating "when both Navy Forces, Far East, and Far East Air Forces are assigned missions in Korea, coordination control, a Commander in Chief, Far East, prerogative, is delegated to Commanding General, Far East Air Forces."⁵⁹ Although this directive appeared to give General Stratemeyer what he wanted, coordination control was never defined.

Unfortunately for General Stratemeyer his difficulties with target selection were just beginning. On 8 July, the 22d and 92d Bombardment

Groups joined FEAF's 19th Bombardment Group and 31st Strategic Reconnaissance Squadron to form FEAF's Bomber Command.⁶⁰ As these additional strategic assets deployed to the theater, SAC's Directorate of Intelligence conducted a crash program to identify the strategic targets in North Korea. This program showed only five major industrial centers—Wonsan, Pyongyang, Hungnam, Chongjin, and Rashin.⁶¹ From these five industrialized areas, the JCS created a Target Attack Plan for North Korea. This plan showed 18 strategic targets “selected and approved . . . by the JCS, the Air Staff, Far East Command, and FEAF.”⁶²

Selection of the remaining targets in Korea was not nearly as smooth. Claiming “FEAF was the only agency with the professional ability to determine the best air targets and the best way of destroying them,”⁶³ General Stratemeyer argued that FEAF should plan the targeting of all air missions. General MacArthur did not listen to his air component commander, for the day after Bomber Command's first B-29 raid on North Korea (against marshaling yards in Wonsan on 13 July 1950), General Headquarters (GHQ) of the Far East Command established the GHQ Target Group.⁶⁴ This group—composed of a senior Army intelligence officer, one Air Force and Navy officer from the Joint Strategic Plans and Operations Group, and an Army officer from the Operations Group—was to advise the command on the day-to-day employment of naval and air force airpower, to recommend and prioritize target selections, to ensure coordination of available airpower, and to conduct continuous analysis of targets and priorities.⁶⁵ On 15 July 1950, a directive to all of Far East Command stated that “basic selection and priority of target areas will be accomplished by the General Headquarters target analysis group with all services participating.”⁶⁶ This directive seemingly put all air targeting—strategic and tactical, air force and navy—under this one four-man planning cell. With centralization of targeting and consolidation of intelligence, the air effort should have been superbly orchestrated.

Unfortunately, the Target Group proved unequal to the task. Not very well versed in the intricacies of target selection, some 20 percent of their 220 selected targets from 17 July to 2 August did not actually exist (due partly to faulty maps in some cases and incorrect map reading in others).⁶⁷ Navy fliers lost all confidence in the Target Group after this fiasco, FEAF targeteers felt they were theater experts for designating tactical targets, and SAC felt it was best qualified for directing strategic strikes. Even though the GHQ Target Group was put in charge of selecting targets for all air forces in-theater, nobody wanted to play by its rules. Instead of bringing all aspects of targeting together to ensure the most efficient and effective use of intelligence, the GHQ Target Group alienated all those who dealt with it.

An attempt to remedy the situation just added another level of review. Established on 22 July 1950, a senior GHQ Target Selection Committee—consisting of one Air Force and two Army major generals and a Navy representative to be named by NavFE—would scrutinize recommendations

passed to them by both the GHQ Target Group and FEAF Target Section and make a final decision on target selections.⁶⁸ Due to reorganizations, other responsibilities, and the inability to provide the necessary services, both the GHQ Target Selection Committee and GHQ Target Group failed to thrive, passing the responsibility of target identification back to the Air Force. With added representation from Fifth Air Force and FEAF Bomber Command, FEAF Target Section was renamed FEAF Formal Target Committee.⁶⁹

Putting target selection back in the hands of the Air Force did not bring an end to all the problems dealing with selecting and destroying objectives—this was only part of the equation. From the beginning of air operations in Korea, weaponeering was lacking. B-29 crews loaded their aircraft with fragmentation bombs and took off on a mission against enemy aircraft at Wonsan. The strike was diverted en route to attack Han River bridges at Seoul, where fragmentation bombs were useless.⁷⁰ “Probably the biggest failure for improper weapons utilization was the fault of intelligence for not providing adequate weapons recommendations. As a result the choice of weapons was often left to personnel not fully qualified to perform this function.”⁷¹ In an attempt to circumvent similar problems from reoccurring, B-29s would launch on bridge-cutting missions, loading with 500-pound general-purpose bombs—“admittedly not the best choice in armament but versatile enough to be used despite frequent last-minute changes in targets.”⁷² There had to be a systematic method of allocating the appropriate weapons. Although a little too late to do any good in Korea, FEAF’s deputy for intelligence established a vulnerability division on 17 July 1953 to provide effective and economical weapon recommendations.⁷³

Post-Korean War

Just as in World War II, major changes to correct problems with strategic target selection and weaponeering occurred after the hostilities ceased. During the conflict, numerous agencies and groups were created, adding to the confusion of exactly who was responsible for what function. This, in turn, caused increased duplication and a corresponding reduction in efficiency for the people involved.

The USAF’s deputy director for targets, Directorate of Intelligence, tried once again to establish who had the lead in this arena. “The mission of the Deputy Director for Targets is to determine on a worldwide basis the vulnerability of targets, target systems, areas, countries, and groups of countries to air attack and prepare target materials and studies as required.”⁷⁴ In carrying out this mission, the director of targets must analyze the strengths and resources of all countries and evaluate them in terms of vulnerability to air attack, predict the physical damage and weapons required to produce that damage for selected targets, and plan and direct the production of necessary air target materials.⁷⁵

Joint Strategic Target Planning Staff

While the Air Force was dealing with the concepts of target selection and weapon identification for air attacks, JCS had to worry about integrating plans for atomic weapon use by various commands. In the early years of atomic warfare, such integration was quite simple. Since SAC was the only command capable of delivering these weapons, it would be the central agent for targeting. As delivery capability, stockpiles, and number of commands planning nuclear strikes grew, so did the possibility of overlap targeting—resulting in targets being destroyed two or three times, while increasing the chances of fratricide.

During the 1950s, each unified and specified commander who had nuclear delivery capability—strategic bombers as well as land-based or carrier-based tactical bombers—was responsible for his own nuclear target list. Each of these commanders was supposed to list only those targets of unique importance to his particular theater. However, the possibility of duplication of particular targets existed because a target considered vital by one commander was often of interest to the commander of an adjacent theater. Theater commanders also had to contend with the SAC commander, who might list the same target as part of the general strategic offensive. Consequently, targets often showed up on two or more separate target lists. To illustrate target overlap, “at one time, 115 airfields and 40 industrial complexes in the Far Eastern theater had been targeted by two separate commanders, and 37 airfields and 7 industrial complexes by three.”⁷⁶ As a result of this overlap problem, in 1952 the JCS took action resulting in a series of worldwide coordination conferences designed to bring representatives from the various commands together to examine their target lists and to resolve any conflicts.⁷⁷

JCS's action led to the creation of the Joint Coordination Centers for Europe (JCC-E) and the Far East (JCC-FE). In peacetime the JCCs kept the overlap and coordination problems in check, while in wartime they were to “act as a tabulation and clearing house for all commands' atomic strikes within each broad area and keep the JCS informed.”⁷⁸

As the nuclear arsenal continued to grow, the ability of each of the war-fighting commanders to develop his nuclear war plans came into question. Wanting a larger piece of the nuclear targeting role, the Army called for the creation of a joint target selection and evaluation group in the summer of 1955. This group would replace the joint structure in the Air Force's Air Intelligence Directorate (although this directorate was part of the Air Force, members from all services were assigned). The Joint Staff concluded “the increasing complexity of target planning made a joint process unworkable” and recommended the unified and specified commanders retain their target selection authority.⁷⁹

The possibility of redundant targeting and inefficient use of these weapons of mass destruction continued to build as the nuclear arsenal grew. The successful underwater launch of a Polaris sea-launched ballistic missile

(SLBM) presented more targeting problems to the commanders. Wanting to consolidate all nuclear targeting functions under one command, the Air Force proposed a single strategic command—under the direction of SAC.⁸⁰ The Navy would not give control of its new weapon system to the Air Force. This debate led to the establishment of the Joint Strategic Target Planning Staff (JSTPS) in August 1960 by Secretary of Defense Thomas S. Gates.⁸¹

JSTPS's purpose was to develop and maintain, under JCS guidance, a consolidated strategic target list and a single war plan—the single integrated operational plan (SIOP)—for all strategic nuclear weapons in order to economize expenditure of weapons and ensure the targeting of vital installations. “Under this functional setup, the JSTPS provides for centrally directed operational planning under JCS policy control and direction to ensure the integration and efficient employment of the various forces.”⁸² In order to carry out this task, JSTPS originally had two divisions: one dealing with target identification and the other assigning specific weapons to destroy those targets (a third was added to conduct analysis of the plan, perform special studies, and coordinate computer requirements).

Since the first step in the construction of a target list is the analysis of intelligence data, it is critical that the various intelligence agencies—which provide the data—work together. While the CIA managed most US intelligence resources, it had to fight with the Air Force for access to critical assets such as the U-2 high-altitude reconnaissance aircraft and reconnaissance satellites launched in 1960. “All of these assets were far from perfect in providing completely accurate and timely information, and finished intelligence estimates based on them often contained, in their appendixes and footnotes, bureaucratic disputes over conclusions.”⁸³

In spite of occasional infighting among the various intelligence organs, National Command Authorities guidance and access to all-source intelligence eventually lead to the production of a target list. As information flows in from all civil and military sources, JSTPS target analysts evaluate the data in order to identify those installations that best fit national targeting criteria. Much of the data is already located in an extensive database called the automated installation file (AIF). Maintained by the DIA, the AIF contains detailed information on thousands of potential targets.⁸⁴ By following DOD guidance, the targeteers at JSTPS comb through the AIF, refining the database to exclude installations in friendly or neutral countries. “When all intelligence data are located, identified and evaluated, an accurate picture of the total target structure is compiled by target analysts. The listing and description of each target comprises the National Target Base (NTB).”⁸⁵

The resulting NTB is further honed to identify those targets whose destruction would help achieve stated national goals. These targets form the National Strategic Target List. The weapons applicers then work from this list to create the SIOP. Hopefully, “by planning for all the strategic [nuclear] weapon systems which would be used by the United States in case of general war, the JSTPS assures integrated operations.”⁸⁶

An added concern was the integration of various US commands with our allies. “Our NATO allies are represented in the JSTPS, where the NATO nuclear war plan is coordinated with the SIOP. Inputs to the JSTPS—JCS guidance, CINC committed nuclear forces, and detailed intelligence data—are melded into a plan that applies available force against the most critical strategic targets for varying levels of readiness and circumstances of hostility.”⁸⁷

Desert Shield/Desert Storm

Integrated operations were also the goal in the Gulf War. Immediately after Iraq’s troops invaded Kuwait, Gen H. Norman Schwarzkopf, the theater commander—“knowing neither the intentions of Saddam Hussein nor of President Bush—decided he needed a blueprint for an air campaign.”⁸⁸ He asked the Joint Staff for some assistance developing target materials and a list of targets.⁸⁹

A little known office in the Pentagon referred to only as Checkmate conducted a first cut at the initial planning for the air war.⁹⁰ This office, headed by Col John A. Warden III, produced the air campaign plan requested by General Schwarzkopf, but it was not accepted with open arms by everyone. “Since the plan came out of the Pentagon, it met resistance at Central Command (CENTCOM) headquarters in Riyadh. By some accounts, the greatest resistance came from Lieutenant General Horner, who thought the Pentagon existed to support his war plans, and not the reverse.”⁹¹

As commander of the air component, Central Command Air Forces (CENTAF), General Horner had his staff, air plan, and target list. Schwarzkopf’s CENTCOM staff also put together its version of an air plan. While all three staffs had access to the same intelligence at the onset of the war, the target lists were vastly different. The basic philosophy of Colonel Warden was not that of General Horner. Colonel Warden was a historian who looked to the strategic bombing campaigns of World War II for his inspiration. On the other hand, General Horner was a tried-and-true TAC warrior. He lived and breathed AirLand Battle and planned accordingly. The object was not to debate the merits of one plan over the other but to find some way or someone to bring the plans together into one executable operation.

General Horner found such a person in General Glosson who formed a special planning group with personnel from US Air Forces Europe, Tactical Air Command, Ninth Air Force, Fighter Weapons School, the Navy, the Marines, and the RAF with the purpose of merging the three target lists into one executable air campaign.

According to the Gulf War Air Power Survey (GWAPS) Summary Report, “at the outset, neither CENTCOM’s nor CENTAF’s intelligence staffs had adequate manpower to support an air war of the scope of Desert Storm.”⁹² While the services and coalition forces recognized the requirement for a single authority to coordinate the air campaign, “they had, to varying de-

grees, reservations about General Horner's authority to select the targets and prescribe the flight operations for the many elements of the coalition air forces."⁹³

Questions also arose as to which intelligence staff supported what group of planners. Both CENTCOM and CENTAF had intelligence staffs, but General Glosson's special planning group—called the Black Hole—worked well with neither.

Black Hole planners set themselves up as a special access organization, with little effort to inform intelligence personnel of their concept of operations. CENTAF intelligence went ahead with their own target planning and viewed initial requests from Black Hole planners as a nuisance. When intelligence personnel failed to respond expeditiously to their initial requests, the Black Hole regarded them as generally nonresponsive and looked elsewhere for support. Thus began an unfortunate rift between theater intelligence organizations and the Black Hole, a gap that widened as time went on.⁹⁴

A Navy officer assigned to work with CENTAF in the Black Hole during Desert Shield/Desert Storm noted that all too often "intelligence was available but did not get to everyone who needed it."⁹⁵ In the first months of Desert Storm, the Black Hole relied on Checkmate for targeting data. The information flow greatly increased as the result of one of General Glosson's early trips to Washington, when he met with then Vice Adm J. M. McConnell, JCS/J-2. Admiral McConnell promised to provide whatever intelligence support he could, speaking to General Glosson on a secure line several times a day and funneling information through Checkmate to the Black Hole.⁹⁶ "By the middle of Desert Shield, Checkmate had become an ad hoc fusion center for intelligence and operational information and maintained contact with national intelligence agencies and a number of specialized planning cells in Washington."⁹⁷

CENTCOM had five and one-half months to develop and refine the target list before hostilities began. It took most of this time to smooth out the differences between various organizations, which all had an input into the targeting process.

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Chapter 5

Findings, Observations, and Recommendations

The first attempts to target the enemy for aerial attack were clumsy at best. It took the United States most of World War II to discover a working formula for the targeting process. “This placed a premium on cooperation. But pooling information and insights proved very difficult under the prevailing atmosphere of interservice, inter-office, and inter-Allied conflict.”¹

During the war, “innovations in the [US Army] Air Forces . . . took place in the context of a force in which intelligence analysis was decentralized into several competing groups, but in which doctrine and operating concepts were centrally developed and directed.”² As the Allies became more familiar with targeting requirements, they “developed the ability to analyze the enemy to determine the targets the destruction of which would present him with the greatest difficulty in waging war.”³ Most of the infighting and back stabbing tapered off once all agencies involved with strategic targeting had representatives on the Combined Strategic Targets Committee. In contrast to the early days of World War II when each individual agency hoarded its intelligence greedily, these combined committees ensures that every subunit received all pertinent information as rapidly as possible. To some, this ability to adapt to the situation was “a wartime innovation as significant as the introduction of the tank in World War I.”⁴

Findings

Following the war, Air Force intelligence realized the country could find itself in a quick-reaction scenario, requiring immediate action. To be prepared, they tasked agencies to analyze all countries of the world and determine their vulnerabilities to air attack. All this information was to be kept in a massive database, ready for immediate retrieval and use in target selection. Unfortunately, world events interfered with the accomplishment of this mission.

The Korean War, one such interruption, highlighted the necessity of letting the experts do the targeting. SAC identified the initial strategic targets (with approval of the JCS, the Air Staff, and FEAF), while Fifth Air Force worked the tactical ones. Once Far East Command (US Army) put the targeting function back in the hands of the air component commander, the process ran smoothly. Coordination existed among the services to the extent that NavFE did its own targeting but shared its intelligence and daily strike plan with FEAF.

This differentiation in targeting responsibility reached its pinnacle with the creation of JSTPS. In an attempt to reduce duplicate coverage by nuclear

weapons-wielding commanders, JSTPS assumed responsibility for all targeting of strategic nuclear weapons, while theater commands did the targeting for their tactical nuclear weapons. Since JSTPS had access to all-source intelligence and brought the nuclear-targeting experts together in one organization, centralization of strategic nuclear targeting worked well.

Desert Shield/Desert Storm revealed that centralized targeting of a conventional war from the United States could also work well. "The ad hoc relationship between Washington and Riyadh challenged the axiom that intelligence developed in-theater is better and more timely than intelligence developed in the United States."⁵ The planners in Checkmate had access to more intelligence than the planners in Saudi Arabia. The speed of modern communications allowed rapid dissemination of information to theater organizations when they required it and helped ensure unity of effort.

Observations

Presently US Strategic Command/J5 is responsible for strategic nuclear targeting, but a single agency conducting strategic targeting for conventionally equipped forces does not exist. There is need for an agency responsible for analyzing all pertinent intelligence, creating and maintaining a targeting database, and calculating aim point and weapons combinations necessary to destroy those targets.

First, this centralized agency should act as a clearinghouse for intelligence. Since there are so many sources of this information, placing representatives from each in a central location will help ensure critical targeting data is not overlooked for some reason. Personnel familiar with the source and who would be better able to extract the useful from the useless would screen this information. There is no need to centralize all the collection sources because "some duplication is healthy for the intelligence community to maintain its unbiased perspective."⁶ The idea is to collect as much potential targeting information on potential enemies as possible. At the conclusion of World War II, the Pacific section of the *United States Strategic Bombing Survey* pointed out the lack of available intelligence at the outbreak of the war. "If a comparable lack of intelligence should exist at the start of a future national emergency [as occurred in the war with Japan], it might prove disastrous."⁷

We can avoid this potential disaster by combining the tremendous amount of intelligence data available in one location with the analytical expertise to examine it. Centralization would prevent decisions on strategic targeting from being thrust upon unqualified personnel. This action would ensure a uniformity of analysis and standardization of target material.

Preparation of these strategic target lists will require much effort initially but will not take much to maintain after that. Once identified, most strategic targets are static, and occasional updates can make additions and changes to the lists. We will not always have an ally to lean on for the necessary information on the enemy such as when we depended on the

British during World War II. Nor will we necessarily have the two and one-half years to collect the required data as in the case of Japan. All, or at least most, of the information on potential adversaries is available in the intelligence community. "The most precious resource available to any decision maker is valid and timely information, [for] without valid timely information, decision makers have no logical basis for choosing one course of action over another."⁸ Centralizing strategic targeting in one organization, closely linked to all sources of intelligence data, could be a step in ensuring we have timely access to the data.

Second, in addition to this access to all-source information, a centralized agency can pool the best talent to select the strategic targets in numerous countries, reducing the possibility that certain targets or target categories might not receive the attention they should. Putting one organization in charge of strategic target selection will also increase the efficiency of the process by eliminating duplication of effort at the various levels. This action could very well be the best use of scarce resources in a fiscally constrained environment.

The product of strategic targeting is of such critical importance that centralization is desired. The success of war may depend upon the effectiveness of strategic aerial operations, either on its own or in conjunction with ground and sea forces. Allowing a number of agencies to produce target lists does little to ensure this critical function is adequately performed at each place. The more critical the decision may be, the higher the level at which that decision should be made.

Recommendations

An organization similar to JSTPS, which would be separate from or linked with USSTRATCOM/J5 or its successor, is required. It would have access to all-source intelligence from DIA, CIA, NSA, and any other organization. There would be separate divisions responsible for leadership targets, military targets, and economic and industrial targets. These categories might be further broken down to focus on particular aspects of the larger division (i.e., petroleum, oil, and lubricants, power production, and transportation). Each division would be responsible for all targets of that type regardless of country. The idea is to develop a pool of experts for each of these target categories.

Once these target analysts determine where and what the characteristics of the targets are, weaponeering specialists will calculate the best weapon and aim point combinations to damage or destroy the target. There will need to be calculations for each weapon available to the various theater commanders, offering them a list of targets and a method of destroying them. "Weaponeering, like the rest of the targeting process, is most reliable when there is enough time for a systematic analysis of the target components, weapons effectiveness, etc."⁹ The agency will come up with

feasible weapon and target combinations, but it would be up to the local commander to decide how to actually take out the target.

This recommended centralized targeting organization should not be strictly a military unit. The problem with a purely military organization is turnover. By establishing this agency at the DOD level, it could incorporate both civilian and military experts at the highest echelon. The civilians would provide the “corporate knowledge” and ensure retention of critical skills. The military personnel would ensure this organization does not end up producing too much based on theoretical aspects and forget about the operational focus. They help conduct sensibility checks to make sure the product is useful to the operators.

This organization would have to establish a prioritized list of countries before proceeding with the preselection of targets. Once a country has been scrutinized, maintenance is relatively easy. The secret is not to let anything fall through the cracks. Since all unified and specified commanders coordinate their Contingency and Operations Plans through JCS, a centralized targeting organization at this level could ensure potential target lists are prepared and in accordance with national guidance.

Even if the wars of the future are more limited than they have been in the past, we must be prepared to threaten an enemy’s strategic centers. A centralized strategic-targeting agency could ensure ready access to strategic target lists, allowing us to strike at the heart of the enemy at a moment’s notice.

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