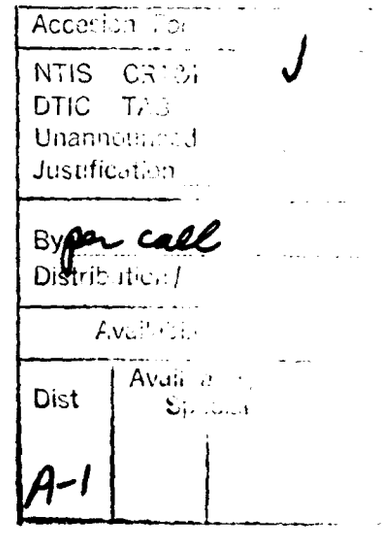
COMBAT SUPPORT DOCTRINE

AFM 1-10

FOREWORD

The geographic position of the United States once served to isolate and protect the American homeland from the devastation of foreign wars. Yet, this same geographical separation has created significant challenges in supporting United States forces around the world. Moreover, in an American economy that increasingly relies on international trade, national strategies must take into account the increased dependence of national power on foreign resources. The same is true for aerospace power. If aerospace power is to remain an effective instrument of national policy, Air Force leaders at every echelon need to understand the essential role combat support plays in the strategy and tactics of aerospace force employment. In essence, combat support is and must remain a command responsibility.



Statement "A" per telecon LTC Philip Meinlinger. Air Force Doctrine/XOXWD. The Pentagon. Washington, DC 20330-5057.

VHC 12/3/90

DEPARTMENT OF THE AIR FORCE
Headquarters US Air Force
Washington DC 20330-5000

AF MANUAL 1-10

1 April 1987

Aerospace Basic Doctrine

COMBAT SUPPORT DOCTRINE

This manual establishes doctrine for the combat support of aerospace forces and represents the official views of the United States Air Force. It applies equally to active military, reserve components, and civilians. Doctrine is derived from the study of war. It offers guidance to be used by Air Force leaders to: (1) learn from the past, (2) act in the present, and (3) influence the future. The doctrine in this manual is the foundation for all Air Force policies to organize, train, equip, and sustain aerospace forces for war. It describes the nature of combat support and its relationship to aerospace power. This manual also expands on the principles contained in Air Force Manual 1-1 and relates them to the support of combat operations.

No. of Printed Pages: 20
OPR: XOXID (Lt Col Robert C. Ehrhart)
Approved by: Lt Gen Harley A. Hughes
Distribution: F; X

Chapter 1

COMBAT PERSPECTIVE

1-1. INTRODUCTION

Every warrior has a combat perspective. Doctrine gives this perspective by providing a working knowledge of how all the elements of combat power relate to each other. Moreover, these relationships are at the heart of the most fundamental choices of national security and offer a coherent framework to think about war. What follows is Air Force doctrine on combat support and its relationship to aerospace power. Chapter 1 describes the role of combat support. Chapter 2 outlines the basic process necessary to support combat operations. Finally, Chapter 3 prescribes those principles guiding the performance of combat support activities.

1-2. AEROSPACE SYSTEMS

The Air Force is comprised of a variety of aerospace systems. The aerospace vehicle is the most visible part of a system. This vehicle can be an aircraft, a missile, or other aerospace platform. But a system is much more than a vehicle. A system also includes the organizations, people, materiel, real property, money, processes and information needed to employ an aerospace vehicle.

1-3. AEROSPACE FORCES AND POWER

To accomplish national security objectives, aerospace systems are formed into aerospace forces. These forces constitute warfighting potential in the form of complementary systems organized to meet the operational requirements of unified and specified commanders. All aerospace forces are capable of performing two basic activities: combat operations and combat support. Combat operations is the activity that deters and fights by deploying and employing aerospace forces. Combat support is the activity that creates and sustains warfighting capability by organizing, training, and equipping aerospace systems for deployment and employment. (See figure 1-1.)

Although combat operations is the focus for deterrence and warfighting, combat support contributes to both aspects of aerospace power. Together, combat operations and combat support produce aerospace power. Coupled with land and sea power, aerospace power serves to deter military attacks and prevent political coercion against the United States and its allies. If deterrence fails, aerospace power provides an essential portion of the national capacity to fight and win.

1-4. COMBAT SUPPORT

Combat support exists to meet combat operational needs. Without this support, combat operations are impossible. In the broadest sense, *combat support is the art and science of creating and sustaining combat capability*. Combat support is both a peacetime and wartime activity which exists at the forward edge of the battle area and extends throughout the combat theater all the way back to the national industrial base and its international sources of supply. Combat support originates with the acquisition of raw mate-

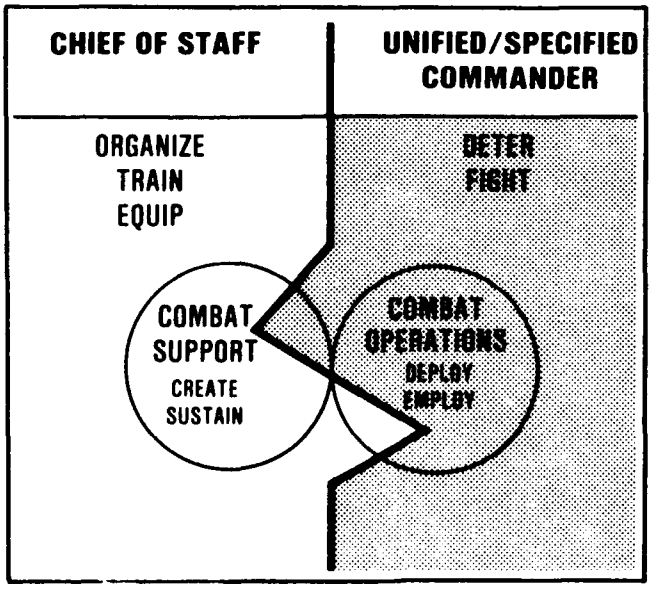


Figure 1-1. Combat Responsibilities.

rials, people, and information, transforms them into aerospace systems, and continues with the employment of these systems in war.

Combat support is, first and foremost, a Service responsibility requiring an organic capacity to support a uni-Service force employment; however, most combat environments have unique requirements that can best be met by multi-Service, joint, or combined operations. Ultimately, the combat support of aerospace forces depends on the military, political, and economic commitment of the nation and its allies to create and sustain warfighting capability.

1-5. COMBAT SUPPORT STRUCTURE

Common to all aerospace systems are the bases and their lines of communication (LOC). Bases are the sites from which operations are originated or supported (or both) while the LOCs are the routes for transmitting resources between bases. Bases are the critical junctures at which aerospace power is most dependent. For it is at the bases that resources are concentrated in order to manifest combat power. Therefore, the bases and the LOCs must survive to sustain combat operations. Aerospace bases fall into three broad groups: operational, support, and industrial. (See figure 1-2.)

Operational bases are where combat operations and combat support merge in order to launch, operate, and recover aerospace vehicles. These bases can be fixed or mobile and can have a large, complex combat support element or a very austere support structure. Examples include a space shuttle, a strategic nuclear bomber base, a forward fighter base, a cruise missile launch control center and transporter/erector/launcher, and an intercontinental ballistic missile launch control center and silo complex.

Although the operational bases directly support the employment of aerospace systems, they cannot remain self-sufficient indefinitely. They must be sus-

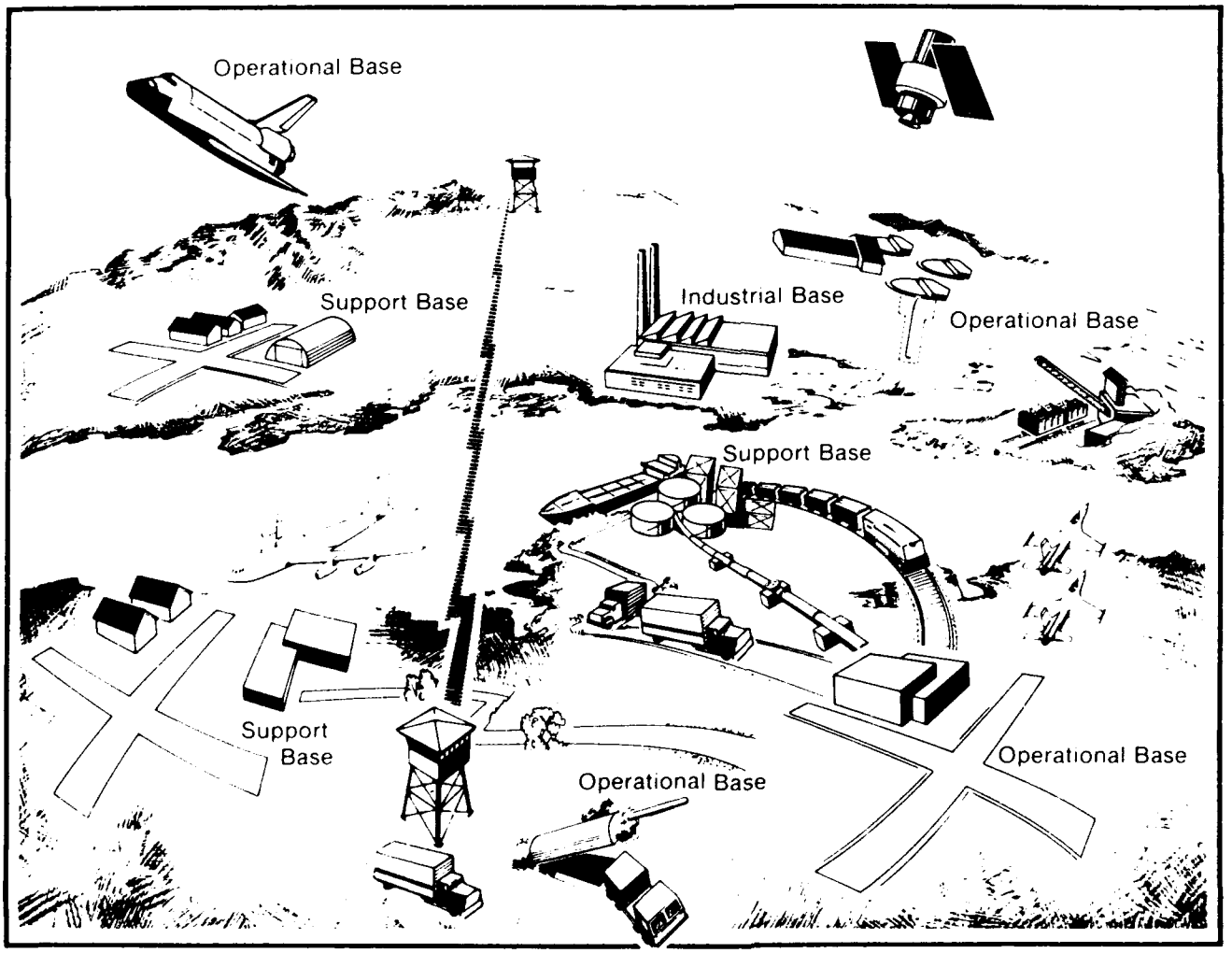


Figure 1-2. Combat Support Structure.

tained by the support or industrial bases via lines of communication. Moreover, the capacity of the LOCs—land, sea, air, or space—is largely dependent on other Services in addition to foreign military and civilian assets. In fact, most resources travel by surface between the various bases. Consequently, aerospace power relies on both land and sea power to maintain its full potential in battle.

Support bases represent the depth of the combat support activity. They provide manpower skills, facilities, materiel, services, and information not normally found at operational bases. Examples of support bases are air logistics centers, program offices and laboratories, major command headquarters, aerial ports and seaports, and technical training bases. Yet, just as the operational bases rely on the support bases for sustained combat support, the support bases depend on a global network of resources obtained from national and foreign industrial bases. These industrial bases represent the international economy that includes government and private research institutions, industrial plants, capital, transportation and communication systems, the civilian labor force, and raw materials.

Because an operational base for one aerospace system can be a support base for another system, the role (rather than the category) of a base is the significant factor. The warrior must know the role each base—operational, support, and industrial—plays in the employment of an aerospace system. More importantly, the warrior must understand the fundamental relationship between the combat support activity and the combat operations activity: the reality that combat operations ultimately depend on the combat support structure—the bases and lines of communication—to sustain aerospace forces in battle.

Chapter 2

COMBAT SUPPORT PROCESS

2-1. INTRODUCTION

Air Force combat support transforms international and national resources into combat capability. (See figure 2-1.) Combat support is structured to create and sustain combat capability in a variety of aerospace systems. The process of transforming resources into aerospace systems begins with the formulation of national security objectives—and their translation into Air Force combat operational needs—and continues with the employment of aerospace forces by the unified and specified commanders. What combat support does in transforming people, materiel, money, information, real property, and energy into a warfighting capability is the subject of the remainder of this chapter.

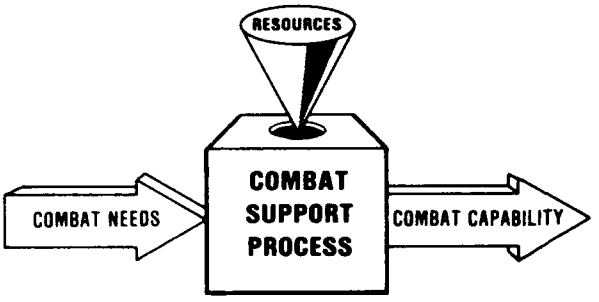


Figure 2-1. Combat Support.

2-2. COMBAT SUPPORT PROCESS

The combat support process is actually eight basic processes by which Air Force combat operational needs are met. The process includes (1) definition, (2) acquisition, (3) maturation, (4) distribution, (5) integration, (6) preservation, (7) restoration, and (8) disposition. This support process is exhaustive and iterative, but not necessarily sequential. All of the processes are highly interdependent and some take place concurrently. Each process varies in duration, intensity, and scope according to the unique characteristics of each aerospace system. In essence, the entire support process encompasses the Air Force life cycle of an aerospace system—its people, materiel, facilities, and information. (See figure 2-2.)

The support process begins, proceeds, and ends with the determination of combat operational needs. This determination can be active or reactive. It can be a reaction to an enemy threat or an action to cause a desired enemy response. Regardless, these operational needs or requirements for combat drive the whole process. Combat needs govern the formulation of Service objectives as the Air Force plans its force scheme during the *definition* process. These plans lead to the procurement of various aerospace systems through the *acquisition* process. Once acquired, the Air Force places these systems at various locations where they are operated, tested, exercised, and refined for combat as part of the *maturation* and integration processes. With the anticipation or actual outbreak of war, aerospace systems are integrated and moved via the *distribution* process (if not already positioned as part of an aerospace force) to their wartime operating sites. At these sites, aerospace forces may be joined by other allied or Service forces to complete the *integration* process. These forces are then made available—protected and sustained for combat operations—through the ongoing *preservation* and *restoration* processes. Finally, if an aerospace system proves ineffective in its combat role, it may be removed from the Air Force inventory or assigned a new role as part of the *disposition* process. Again, the entire support process is activated through the continuous identification and assessment of combat operational needs. A more detailed description of each process within the support life cycle follows.

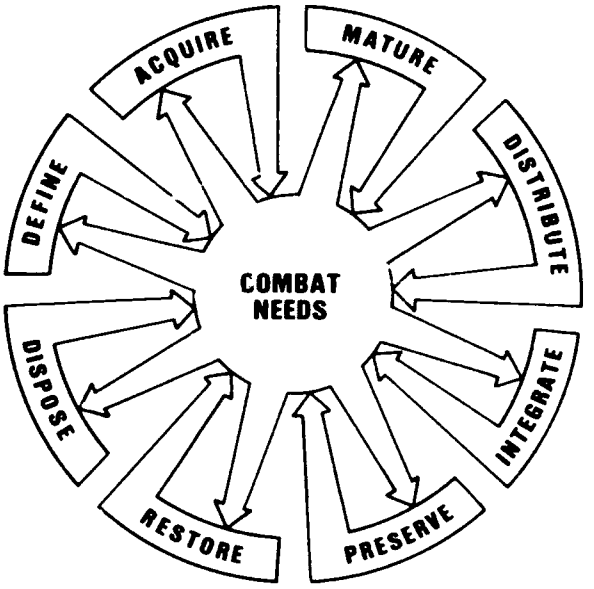


Figure 2-2. Combat Support Process.

2-3. DEFINITION PROCESS

The combat capability of tomorrow's Air Force reflects the quality of today's planning as expressed in the definition process. This process begins with the

formulation of Air Force aims within the context of national objectives, policies, and strategies. (See figure 2-3.) First, the Air Force determines the aerospace capabilities it must provide the unified and specified commanders to achieve sufficient combat power. This process is primarily an Air Force planning activity that balances national priorities against combat needs and translates them into a future scheme for aerospace forces. Based on doctrine, these plans determine the organization and composition of aerospace resources—the quantity and quality of people, materiel, facilities, and information. They specifically address force structure (the number and mix or aerospace systems) in terms of modernization, readiness, and sustainability. These plans include the general and conceptual long-range plans and the specific, near-term plans that detail budgetary programs. The whole process centers on the information as it relates to combat capability: what combat capability is and how to measure, acquire, and retain it.

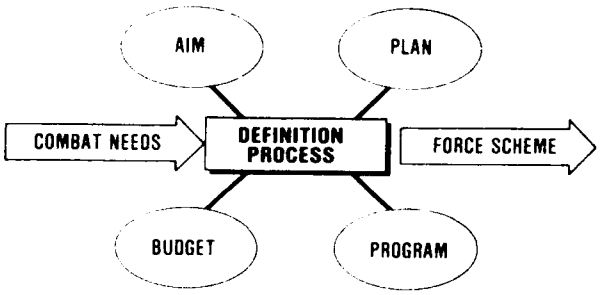


Figure 2-3. Definition Process.

The longer range plans attempt to prepare for a world in terms of future economic, political, and military environments. These plans provide a vision of tomorrow's Air Force with sufficient definition to allow a systematic development of force structure. This definition must reflect an understanding on how combat needs, as expressed by lower Air Force echelons as well as higher headquarters, will be integrated with those of the other Services and allies. Furthermore, long-range planning must undergo periodic refinement until placed into near-term plans and programs that identify specific aerospace systems. Moreover, these programs must take on greater detail as funds are budgeted and appropriations are approved for military procurement.

Again, the entire planning, programming, and budgeting process is based on defining combat capability as it applies to the aerospace environment of the future. The definition process is an ongoing activity that requires continuous adjustment to aims, plans, programs, and budgets as information changes with regard to the evolving threat, technology, and national priorities. In the final analysis, the ability of the Air Force to express combat capability in its force scheme will largely dictate the combat potential of prospective aerospace systems and their capacity to successfully deter or engage an enemy.

2-4. ACQUISITION PROCESS

The acquisition of resources for Air Force use is both a political and economic process. This process involves obtaining resources from the national and international economy and converting them into potential warfighting assets. (See figure 2-4.) These resources include people, materiel, real property, and information. All these resources are valuable national assets that can contribute to national power as part of the economic, political, cultural, and military sector. This fact, coupled with the size and visibility of the Department of Defense budget, encourages public officials to closely scrutinize and influence military procurement, thus giving acquisition its political dimension.

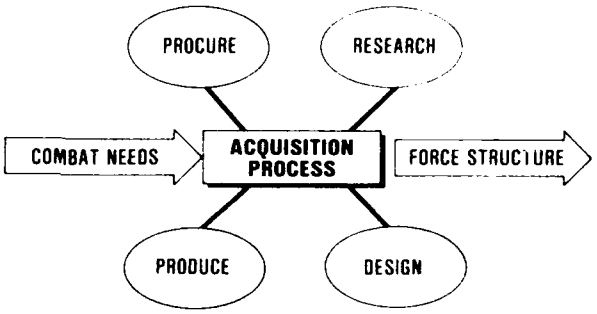


Figure 2-4. Acquisition Process.

The Air Force acquires people based on combat needs and fiscal limitations. The goal is to obtain people who have the required skills or ability to develop those skills. As for equipment and facilities, the Air Force cannot always procure items in the private economic sector than can meet the rigorous demands of combat. Therefore, the Air Force must sometimes manage the development and production of equipment and facilities so they are effective in the combat environment. This acquisition process begins with a concept to improve combat capability. Based on research information, this concept is then evaluated to ascertain its feasibility. If it is judged feasible, the concept can begin a design and development phase leading to a product. Once developed, this product is reviewed and tested to demonstrate its combat value. If the tests are successful, and if the new equipment or facility fits into the evolving force scheme (as determined by the definition process), a production decision follows. If not, an older system can be modified to improve its combat per-

formance or efficiency. Whether an existing system is modified or a new one is created, the process is essentially the same. Yet, acquisition is not confined to people, equipment, and real property. Obtaining information on friendly forces is equally vital. Information is a resource that must be acquired so it can augment the effectiveness of the other combat resources.

2-5. MATURATION PROCESS

A well-trained and tested aerospace force is more capable of prevailing in combat. The maturation process takes the military resources obtained from the acquisition process and prepares these resources for combat as part of an aerospace system or force. (See figure 2-5.)

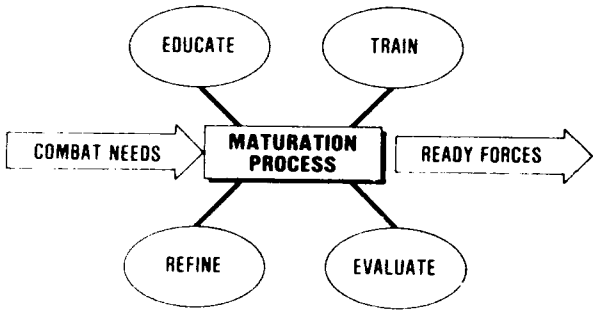


Figure 2-5. Maturation Process.

The maturation of people is an ongoing process that stretches across an entire Air Force career. This process is meant to instill the will—the warfighting spirit—and the skills of a warrior as people are trained, educated, and indoctrinated to perform at the unit, theater, and global levels. Most professional development occurs in the performance of regularly assigned duties and rarely approaches wartime conditions. Therefore, self-preparation, coupled with a formal and professional education, is needed to compensate for a lack of combat experience. The ability of an individual to grow professionally is also reflected in promotions. These promotions place the most proficient performers in assignments of greater authority and responsibility.

For equipment and real property the process includes operational use and evaluation to discover any system deficiencies in performance or supportability. These deficiencies can lead to equipment and facility modifications and reentry into the acquisition process. Or, procedures and techniques may be refined to enhance system design characteristics. Moreover, information must also mature and become both more precise and abundant in approximating the aerospace world. However, aerospace systems demonstrate their full capacity to generate combat power only when all their resources are integrated as part of a force.

2-6. DISTRIBUTION PROCESS

Positioning of resources is vital to combat operations and is an essential task of combat support. The distribution process encompasses those activities to find and transfer resources—people, materiel, facilities, and information—from one location to another for deterrent or warfighting purposes. These activities involve four basic tasks: demand, movement, storage, and issuance. (See figure 2-6.)

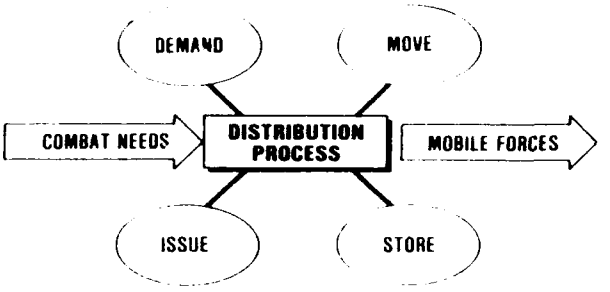


Figure 2-6. Distribution Process.

A specific combat need must be identified by a demand from either a provider or user: the type resource, the quantity, the destination, and the timing. Once this data is known, the distribution system can start to match a resource and its location with the requirement. After a source has been found, the resource is prepared for movement. People are assembled, equipped for job and personal needs, and provided preventive medical treatment, legal advice, and financial assistance (as part of the preservation process). In addition, people are scheduled, manifested and loaded on a carrier or are assigned an aerospace vehicle to move to an operational base. Similarly, equipment and facilities are packaged and marshaled for movement and then manifested, and loaded on a carrier—land, sea, air, or space vehicle. This movement activity may be repeated several times as an item moves from one location to another or changes modes of transportation. The same is true for information. It must be acquired, matched with a demand, and prepared for movement or transmission.

Prior to movement, while in transit, or upon arrival at their destination, resources must be marshaled, organized, and protected until they can be delivered to the user. The storage activity performs this role by holding and maintaining assets in a secure environment until called for by the user. Storage is not confined to people, materiel, and facilities, but also

serves an invaluable role in distributing information. During war, the communications systems can become saturated, necessitating protected storage for information awaiting transmission or retrieval by a user.

Issuance is the final activity of the distribution process. This task gives possession of a resource to a user. This activity involves handling, unpackaging, delivering, and transferring responsibility for an asset to a user. Issuance completes the distribution process that began with a combat need to deliver a resource to a specified location by a specified time. The whole process is iterative. It includes redistribution (or retrograde) of pre-positioned or newly positioned resources. Redistributing resources is normally done for the purposes of strategy, tactics, medical treatment, or equipment repair.

2-7. INTEGRATION PROCESS

For aerospace forces to achieve an economy of force, every combat element must be integrated to form a synchronized warfighting team. (See figure 2-7.) This integration includes organizational alignments to provide the Air Force sufficient access to national and allied resources—manpower, materiel, facilities, and information. In effect, organizations are needed to mobilize the resources of the nation and its allies for the primary purpose of warfighting. These resources encompass active military and reserve components, education and research institutions, industrial plants, communication and transportation systems, the civilian labor force, medical staffs and facilities, raw materials, and energy.

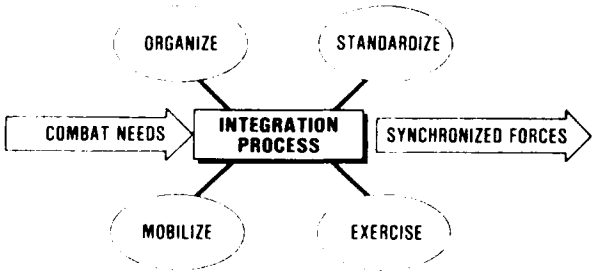


Figure 2-7. Integration Process.

The integration process must begin well in advance of the hostilities with the definition process and continues throughout the entire support process. Within the Air Force, the combat operations and combat support activities must first be synchronized to form a cohesive team. This synchronization includes both active and reserve components at every echelon of command. The Air Force must also be able to support and employ forces in concert with the other Services and allies in joint and combined operations. And these combined forces require integration with their national economies and with the host country where they are deployed. Effective integration demands joint and combined plans and agreements, acquisition programs leading to common aerospace systems, standardized procedures, and extensive exercises for both military and civilians inside and outside of allied governments.

2-8. PRESERVATION PROCESS

Aerospace forces must survive before they can prevail in combat. The preservation process involves those activities required to protect aerospace resources from nuclear, chemical, biological, electronic and conventional threats. This process includes active and passive defense, concealment, deception, and other activities necessary to secure vital combat resources. (See figure 2-8.) This protection begins with the definition process and proceeds throughout the acquisition and maturation processes as aerospace systems are planned, designed, and evaluated to endure the combat environment.

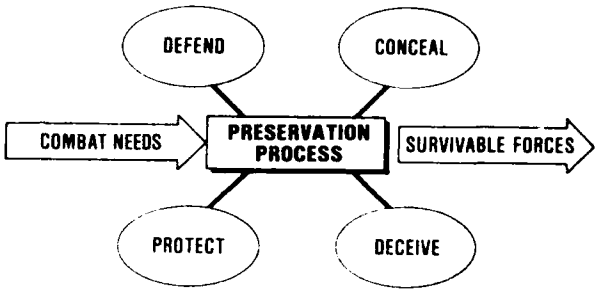


Figure 2-8. Preservation Process.

For people, the preservation process means protecting individuals against disease, injury, and stress as well as against combat threats. Safety discipline, preventive medicine, physical fitness, sanitation practices, and law enforcement combine to contribute to the well-being of people. Moreover, people are trained to work with security forces to defend themselves. They are provided protective clothing and their working and living locations are concealed and hardened.

Similarly, equipment and real property are dispersed, concealed, hardened, and defended from enemy attacks. Information also requires protection. Hardening, redundancy, and diversity may enable information systems to continue to function under attack, degrading gracefully rather than catastrophically, as a result of enemy action. Information must be kept from the enemy, yet made readily available for use by friendly aerospace forces. Misinformation

should also be used to confuse the enemy and protect vital resources. Again, the whole preservation process starts with plans and programs far in advance of armed conflict so systems will be designed and produced to survive in sufficient quantities to engage the enemy and prevail.

2-9. RESTORATION PROCESS

Ready forces can deteriorate unless they are periodically restored. Many factors such as age, intensity of use, design limitations, exposure to combat, and the adaptability of an aerospace system determine restoration requirements. Although the basic activity of restoring resources for combat availability is similar for equipment, facilities, and information, the human resources have unique needs. (See figure 2-9.)

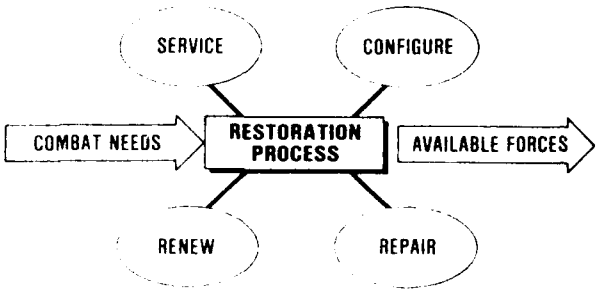


Figure 2-9. Restoration Process

People have basic needs which, if not satisfied, can lead to defeat in combat. These needs affect attitude—the motivation to win. Attitude is a fragile thing. It can quickly evaporate if a person is hungry, tired, scared, sick, or injured. Therefore, people cannot be left untreated if they are ill or injured. Their health depends on corrective medicine and dentistry. People also need food, rest, and recreation. They need to be emotionally, physically, and spiritually renewed, especially in combat. Yet, even during harsh wartime conditions, people can perform heroic feats if they are motivated by strong leadership and assured the Air Force will take care of their basic human needs.

Not as adaptable as people, equipment and facilities can fail to perform their function as a result of damage from enemy attack or deterioration from use and age. Therefore, they require fixing when they are broken or damaged, and refurbishing as they age. In war, the restoration process begins with generation—making systems immediately available for combat operations. These systems are continually inspected and problems are diagnosed. Once a remedy is chosen, the degraded or unusable equipment and facilities are repaired, upgraded, and tested to meet the combat operational requirement. In addition to being repaired, the system may be serviced. Servicing can include dispensing energy resources, performing sanitation activities, and replenishing life support systems. Whether an aerospace vehicle is expendable or not, it must be configured for employment. Configuring can involve adding or changing payloads, range extenders, imagery devices, munitions, and cargo adaptations. In short, the restoration process ensures vehicles, shelters, spare parts, support equipment, pavements, and utilities are all made available for combat.

Information is another perishable resource that continually needs renewal to remain current, especially in a warfighting environment. Information must not only be up to date, it must be digestible—easily reconfigured—to meet the format needs of multiple users. When information has been contaminated by enemy intrusion or friendly error, it must be repaired and serviced by removing misinformation and replacing it with correct data. Restoring information is as vital to combat effectiveness as keeping people, equipment, and facilities ready and available for battle.

2-10. DISPOSITION PROCESS

Effectiveness in war is the single criterion for determining resource disposition. This process recycles, transfers, retires, or divests elements of the force structure that are no longer required to meet combat needs in their current role. (See figure 2-10.) Identifying these elements, which include people, materiel, facilities, and information, is accomplished by continually reassessing the force structure's ability to meet current combat operational needs. Each component of the force structure must be examined to determine its contribution to satisfying these needs. When elements are no longer needed, they reach the end of their life cycle and must undergo disposition.

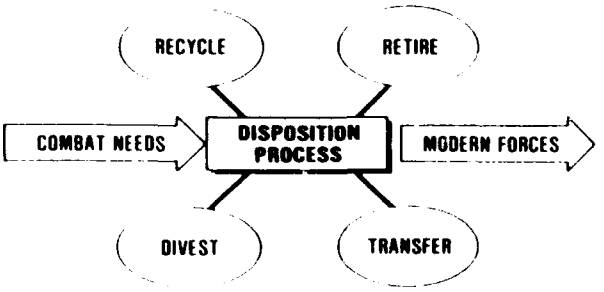


Figure 2-10. Disposition Process.

Disposition is more than disposing of a used resource. Each resource is a national asset from which

maximum use must be obtained. The inability of a resource to satisfy a combat need in its present role does not preclude significant utility in another role. Therefore, disposition must be prudently and rigorously carried out in order to extract the greatest benefit from each resource prior to its disposal.

The Air Force personnel posture can change in many ways. In wartime, combat causes serious debilitating injuries and deaths. The combat support system must return the permanently impaired to a civilian status and arrange for their continued care. The dead must be processed to prevent the spread of disease and must eventually receive honorable interment. Individuals who are no longer required to support an aerospace system can be separated or assigned to another system. Personnel may be retrained in a new skill, transferred from active to reserve forces, or retired. People who cannot or will not serve in the Air Force are discharged.

Materiel can also be disposed in a number of ways. Aerospace equipment that is no longer required in the total force mix may be converted to targets or drones, stored as strategic reserves for attrition fillers, sold to allied nations, retained for heritage programs and museum displays, converted to civilian use, or scrapped. Likewise, facilities no longer satisifying a need can be converted to other uses, renovated, or demolished.

Disposing information is essential for maintaining modern aerospace systems. Concepts, objectives, plans, policies, and procedures require continuous refinement as the force structure undergoes modernization. Some information such as specifications, software, technical manuals, and drawings may be transferred to allied nations when they acquire an Air Force system. Other information is retired to historical repositories to be retrieved or recycled when needed. Finally, when information has no potential future use, it must be removed and eliminated from the force structure.

Chapter 3

COMBAT SUPPORT PRINCIPLES

3-1. INTRODUCTION

Principles are the distilled experience of warriors. In this manual, they represent a set of statements explaining what makes combat support work best. These principles are not infallible, mutually exclusive, or universally applicable; yet, they offer sound guidance. They are a proven basis for deciding on a reasoned course of action. The eight principles of combat support are as follows:

OBJECTIVE	BALANCE
LEADERSHIP	CONTROL
EFFECTIVENESS	FLEXIBILITY
TRAUMA/ FRICTION	SYNCHRONIZATION

Mastery of these principles yields improved combat capability. Conversely, to neglect one or more of these principles may significantly reduce support to combat operations. The principles of *objective*, *leadership*, and *effectiveness* provide direction to the application of combat support. The principle of *trauma/friction* describes the external and internal influences that affect combat support. The remaining four principles—*balance*, *control*, *flexibility*, and *synchronization*—focus on the means of perfecting combat support.

3-2. OBJECTIVE

> *Know what you want to do before you do it and keep reminding everyone until it's done.*

A fundamental principle for success when planning or executing any aerospace operation is a clear and concise statement of the objective. For combat support personnel, the objective is to give commanders the greatest freedom possible to deploy and employ aerospace forces. When combat resources are made available to commanders at the time and place of their choosing, they are able to go on the offensive to surprise and exploit enemy weaknesses, disrupt enemy plans and operations, and defeat enemy forces.

Yet, the principle of objective is not confined to the battlefield, but rather, has its origin in the long-range planning process. Based on doctrine, the Air Force sets objectives on the type of force structure—the combination of aerospace systems—it needs for the future. These objectives must be broad, but precise enough to give direction and balance to a systemic evolution of force structure. The objectives should also be proactive by creating research and development projects that cause potential enemies to become reactive in building their own forces. These projects are most effective when continuity exists between planning, programming, and budgeting activities. Continuity requires "on demand" feedback and adjustment as plans, programs, and budgets are altered to conform to long-range planning priorities.

An objective of military strategy is to enhance deterrent and warfighting capability. Historically, the formation of alliances and military assistance programs has played a significant role in advancing this objective. Moreover, logistics has been an integral aspect of this grand strategy. For instance, the sale of an aerospace system to a foreign country permits cooperation between the United States and the purchasing nation. Cooperation occurs as both nations work together to integrate the new system into a country's force structure by planning and coordinating procurement, production, training, and spares support. These activities can reinforce the mutual dependencies of both nations and encourage political harmony. Therefore, logistics can contribute to national power as a political, economic, social, or military instrument.

The principle of objective is especially relevant to large, complex support organizations which allow means to dominate ends: procedures to overshadow objectives with the passage of time. For example, the objective for procuring and stocking spare parts is to maximize aerospace system availability in combat. A policy of procuring and stocking spares based primarily on costs does not improve combat capability if their number is insufficient or if they are the wrong—nonessential—parts needed for system generation. Therefore, when managing parts procurement, organizations require procedures that are linked directly to a combat objective and a criteria to determine when the two begin to diverge.

In fact, the principle of objective is applicable to every combat support activity at each level of command regardless of task—planning, organizing, directing, coordinating, or controlling. This principle is valid when supporting an entire theater of operations or merely managing a staff meeting. It may in-

volve a 15-minute installation of a time-compliance technical order or a 5-year facility construction program. Nonetheless, the principle of objective has three requisites: (1) stating the objective at the outset, (2) ensuring everyone understands the objective, and (3) never letting anyone lose sight of the objective.

3-3. LEADERSHIP

You are the single most important factor in achieving military victory.

In the most difficult of all human endeavors—preparing for and engaging in war—leadership offers the path to victory. Heroic battlefield leadership has been a hallmark of American fighting forces. But, in an age of nuclear weapons and highly mobile and lethal conventional forces, the leadership exercised in preparing aerospace forces for war may prove to be decisive. Yet, peacetime organizations can only remain dynamic and viable through personal leadership; groups are less capable of managing organizational change because group action demands consensus and avoids risk-taking. Thus, the imagination and creativity of the individual leader can bring vision to an organization and motivate people to accomplish extraordinary deeds.

Leaders are recognized and judged by their actions, not by their grade or position. Leaders are people who first choose to do "the right thing" and then ensure "things are done right." They are loyal to the Air Force and to their unit and they always put the good of the organization ahead of their own self-interests. Leaders accept the responsibility for all their decisions, especially when they go wrong, without offering any excuse for their mistakes. They have the courage, integrity, and candor to support the long-term national interests—"defend the Constitution of the United States against all enemies, foreign and domestic"—even to the detriment of their own organizations, if necessary. They encourage initiative and innovation and understand the last war will never be fought again. Therefore, they actively seek to identify and divest themselves and their organizations of the "dinosaurs" of the past. The breadth and depth of their competence in the military arts and sciences is ever increasing. They demand realistic combat training from and for their subordinates so they can deal with the certainties and uncertainties of war. They appreciate the relationship between morale, health, physical fitness, cohesion, and combat effectiveness. In short, they know how to reward and discipline the troops and when "to keep them out of the noon-day sun." Finally, leaders are relentless in their commitment to make the Air Force more combat capable.

3-4. EFFECTIVENESS

Do only those things that improve combat capability.

Because survival is at stake, cost cannot be the primary consideration in national security decisions. Air Force leaders must effectively articulate military needs, but other public officials should determine what the country can afford and the risks the country can assume. This civilian prerogative allows the Air Force community to concentrate on combat capability—what it is and how to develop, measure, and apply it. Yet, the Air Force must not make important the things it can measure, while neglecting the important things it cannot measure.

Although affordability is the purview of the civilian leadership, efficiency and productivity are not confined to the private economic sector. Efficiency is important to the extent it contributes to combat effectiveness; therefore, Air Force leaders must always extract the greatest return possible for every military dollar spent. They should recognize that the cost of a person or equipment is its life-cycle cost. Money spent early in the acquisition process on supportability yields the greatest cost-effectiveness. This cost avoidance not only leads to resource conservation, but, more importantly, enhances system availability that directly translates into aerospace power.

Improving the reliability, maintainability, transportability, and survivability of new and existing aerospace systems is the pivotal path to reducing the combat support structure—manpower, materiel and facilities—necessary to sustain combat operations. Therefore, the Air Force must give an unwavering emphasis to these vital areas throughout the acquisition process from requirements identification through concept development, design, production, and acceptance. This emphasis leads to enhanced combat capability by creating aerospace systems that consume less resources, which make them easier to move and maintain in war.

In order to perform effectively in war, peacetime operations must duplicate wartime activity. Combat may not allow time to adjust to different organizations and procedures. Yet these wartime procedures and organizations can be inefficient in peacetime due to low levels of activity and resource availability.

For example, having several aerospace industries producing the same system, subsystem, or component may be costly during peace, but this policy might be critical to effective industrial mobilization in war. Therefore, combat effectiveness must be the final arbiter in deciding policies for peacetime operations.

Commanders must be aggressive—not only in creating and sustaining combat resources--but in divesting the Air Force of all those concepts, doctrines, organizations, programs, policies, procedures, and aerospace systems that do not contribute to improved combat capability. In short, combat effectiveness is the standard for judging all combat support actions as they apply to aerospace forces.

3-5. TRAUMA/FRICTION

Understand: War is hell!

The intensity and destructiveness of modern warfare creates a punishing and uncertain environment for people and equipment through trauma (shock and damage to combat elements) and friction (the chaos resulting from the failure of events to follow plans), especially during the critical early stages of a war. Trauma from enemy assaults on the combat support structure is characterized by death, organizational disruption, destruction of critical materiel, and degraded communication between combat elements. Recovery from the trauma is complicated by the confusion and disorientation caused by the friction of war. Friction results from enemy ingenuity, organizational realignment, inadequate plans, malpositioned resources, poorly trained people, lack of cohesion, ineffective equipment, incorrect doctrine, and indecisive leadership occurring simultaneously. To withstand the combined effects of trauma and friction, the combat support structure must therefore be capable of transitioning rapidly from peacetime to wartime and operating in a self-sustained, independent mode as it adjusts to combat.

To achieve this capability, combat support activities must be accomplished the same way in peacetime as they are in wartime. As deployment or employment begins, attempting to reorganize disrupts the execution of combat support and jeopardizes successful combat operations. When peacetime and wartime combat support activities must be performed differently, realistic training which severely stresses the combat operations and combat support elements should be instituted. While this training cannot duplicate the trauma and friction of battle, it must be designed to press the combat support elements to the limits possible in a peacetime environment.

Among the many contributors to friction and trauma, three potential limitations are vulnerability, capacity, and visibility. Vulnerability increases stress on the support structure in wartime due to the interdependency of the many diverse combat elements. For example, destruction of information networks can inhibit the ability of the support structure to correctly position resources in a timely manner. Because the support structure becomes a target in wartime, various support functions can become disrupted. This disruption compounds the effect on capacity and visibility.

Capacity contributes to the stress of the combat support structure during war because it constrains the options of the commander. Since only a finite number of carriers, LOCs, and ports exists, wartime demands can exceed capacity. Demands which are beyond the capacity of the support structure to deliver resources can have a debilitating impact on an entire theater of operations. Therefore, resources must be more intensively managed to provide essential services. Attacks on the capacity of the support structure provide an enemy an opportunity to reduce the options of the commander. In turn, commanders must exert greater efforts to maintain even minimal levels of support.

During wartime operations, the visibility of resources is more difficult due to the uncertainty of information. With the loss of visibility comes the loss of knowledge. The entire combat support structure becomes shrouded in "fog" as visibility is diminished over the demand, movement, storage, and issue functions. Combat forces either cannot be supported or can be provided only marginal support due solely to combat demands not being visible to the people who must act on them. In essence, the hell of combat creates enormous combat support challenges never before experienced in peacetime.

3-6. BALANCE

Get the right thing in the right amount to the right place at the right time.

One of the great challenges of combat support is effective resource allocation. Within a theater of operations, the goal is to attain a balance between the principles of mass and economy of force in order to apply sufficient aerospace power to reach a military objective while conserving resources for future use. To accomplish this balance, commanders use maneuver and timing/tempo to selectively employ their warfighting capability to exploit enemy weaknesses and avoid their strengths. A balance between re-

source use and resource conservation allows the combat support structure to meet the operational combat needs of the commander.

The principle of balance is, perhaps, most obvious in the distribution process, especially as it relates to a major intertheater force deployment. To have balance, a distribution network is regulated and integrated to allow a continuous and controlled flow of forces and supplies into and within the theater of operations. Efficiency is enhanced to the degree that interface requirements between modes of transportation, ports, and storage facilities have been planned and implemented. Continuous flow is improved by minimizing handling, the number of transfer points, and the number and variety of carriers. Saturation can be avoided and balance achieved by ensuring the distribution system "pushes" or "pulls" people, materiel, and information at a rate that can be accommodated at every point along the network from origin to destination.

Another example of the need for balance is in the planning, programming, and budgeting processes. As the Armed Services acquire military capability, they seek a balance between force structure, modernization, readiness, and sustainability. Having modern aerospace vehicles is of limited value if these vehicles are not supported by skilled technicians, munitions, support equipment, spare parts, fuel, or survivable operational bases. Conversely, stockpiles of support materiel are not a substitute for adequate numbers of modern aerospace vehicles. Deterrence is based on warfighting capacity. This capacity is demonstrated by a balanced Air Force organizational structure having sufficient numbers of modern aerospace systems that are ready and sustainable in combat.

Air Force resources also require a balance between quality and quantity. More does not mean better. Greater quantities of resources do not necessarily lead to improved combat capability. The organization and quality of manpower, materiel, facilities, and information is equally as important. The aim is to get the most capability out of the existing force structure. However, quality is not a substitute for quantity. History demonstrates that high levels of attrition will occur in a protracted conflict between advanced industrial nations. Therefore, a force structure that relies exclusively on quality cannot prevail in the long run. Force "multipliers" become force "dividers" as they are lost to combat. An aerospace force with greater lethality (per vehicle) cannot overcome a numerically superior force of less lethality (per vehicle) unless force ratios are maintained within acceptable limits. In short, both quantity and quality are important to all combat resources when engaged with an enemy who is capable of waging attrition warfare.

The promotion and assignment policies for people must reflect a balance between operations and combat support. Experience and talent must be distributed among operations and support elements to ensure the highest combat capability. Failure to promote and assign people according to combat needs results in leadership and management deficiencies among critical combat elements that degrade their warfighting capability. For example, joint, combined, and headquarters assignments should be encouraged and rewarded in order to give a theater or global warfighting orientation to a broad spectrum of Air Force members. Again, balance is the key to personnel policies as they relate to combat capability.

A major system acquisition is another area where balance is essential to attaining combat goals. In this instance, the balance is between performance, cost, schedule, and supportability. A major acquisition program often takes 10 to 15 years to complete. In that time, a program office can downplay the importance of supportability as it fights for fiscal survival by striving to stay within the budget and on schedule while achieving the vehicular performance specifications demanded by the employment environment. Nevertheless, extraordinary vehicle performance—as measured by lethality, speed, range, and maneuverability—cannot compensate for inadequate system survivability, mobility, reliability and maintainability. A "grounded" aerospace vehicle, no matter how effective in the air or space, cannot contribute to combat capability unless it can be made available to the commander. Moreover, the time to demand the highest supportability is during the initial acquisition of a vehicle, not when operating out of an aerospace base during a war. Balance is a vital ingredient to every combat support process and the Air Force can best prepare aerospace forces for combat by giving emphasis to all the support processes.

3-7. CONTROL

Never lose contact with your resources.

An objective of all commanders is to keep control of their forces and supplies so they can plan and execute their operations at will. Knowing where combat resources are is as important as having them phys-

ically present. Information gives the commander this knowledge. Whoever controls information can control the organization; however, data is not to be confused with information. Data can bewilder commanders and render them ineffective, especially in the "heat of battle." Data only becomes information when it is timely, relevant, accurate, concise, simple, and digestible.

Commanders only require information they can use to direct the organization. Therefore, commanders must request selective data that is arranged and presented to give them an abbreviated real-world view. In short, they need information that deals with systems, not fragmented items, to coordinate actions and assess results. To achieve this end, commanders must establish communications networks that are responsive, secure, and robust, yet capable of creating deception. If aerospace operations are to be successful, commanders must demand security to deny the enemy information on the combat support activities that precede their combat operations.

While commanders recognize the need for centralized planning and control, they also understand the importance of not burdening subordinate organizations with excessive reporting requirements. Therefore, they delegate to lower echelon commanders and combat support personnel the authority to execute and manage their own activities. The need for decentralization of authority increases the further removed the commander is from the activity. And, unless a commander has the same or more information, decisionmaking becomes the prerogative of the on-scene authority. Finally, the commander must fully appreciate how information is processed by people and equipment, initiating procedures to discover false, inconsistent, and erroneous reporting. In the end, the best information system is the one allowing commanders to retain control of the organization without forecasting their intentions to the enemy.

3-8. FLEXIBILITY

Create aerospace forces that can operate in any combat environment.

The next war may not resemble past wars. Technological advances can overpower tradition and create new and unanticipated environments for combat operations. Therefore, a flexible combat support structure is elastic, modular, and simple. It is capable of rapidly expanding and contracting to meet the demand for people, materiel, facilities, and information wherever the requirement exists. Moreover, plans, organizations, and equipment are designed to be taken apart and quickly reassembled to form new capabilities in a changing combat environment. Finally, support flexibility demands simplicity at the operational base, in the depot, and at the factory.

Flexibility is also achieved through cooperative, long- and short-term civil and military enterprises. The interoperability, standardization, and commonality between people, equipment, and procedures allow other Services and allies to share scarce resources. This cooperative process begins with joint and combined acquisition programs and continues with combined, joint, and multi-Service exercises to develop and refine operations and support procedures.

Mobility is the flexibility to distribute resources worldwide and into space for use in combat operations. Mobility may be strategic or tactical. Strategic mobility allows the transfer of resources between theaters and across extended lines of communication. It is accomplished by spacelift, sealift, airlift, and pre-positioning. Tactical mobility permits intratheater distribution activities. It represents the final movement leg of the distribution process from theater ports to the operating sites. Tactical mobility also provides the emergency element of the distribution system by offering a capability to redistribute assets quickly under crisis conditions. Finally, mobility—both strategic and tactical—must have real-time information to identify and locate resources for immediate combat use.

Survivability and supportability are enhanced by the complementary nature of mobility and vehicular autonomy. As aerospace vehicles become more self-sufficient—requiring fewer support personnel and less support equipment—they become more mobile and better able to move from one theater to another or, more importantly, able to disperse routinely in order to survive within a theater. The ultimate goal is to create aerospace systems that can perform the employment missions with minimal combat support once the acquisition process is complete.

For the Air Force to develop into self-sufficient aerospace systems, the evolution must begin, first, by producing aerospace vehicles that are more reliable and maintainable. These vehicles must break less frequently, be less susceptible to combat damage, require fewer support personnel and equipment, and need only minimum servicing or reconfiguring before each mission. In addition, people must be

trained to work with more vehicles or more parts of a single vehicle. Equipment should also be developed to replace people, but only when equipment can be more combat-effective. Finally, organizations should be structured with economies of scale to offer the greatest adaptability to a variety of combat situations. In summary, the key to creating flexible aerospace forces is to merge the four basic tasks of the Chief of Staff—organizing, training, equipping, and sustaining—into an integrated activity.

3-9. SYNCHRONIZATION

> *Remember: Combat power equals the combination of combat operations and combat support.*

Combat support is the foundation of aerospace power: the creation and sustainment of combat capability which permits aerospace forces to be employed tactically to accomplish the objective of strategy. Combat power can achieve its full potential when combat operations and combat support come together in unison. Strategy cannot deter or harm the enemy unless it can be executed tactically. And tactics cannot succeed without modern, ready, and sustainable aerospace systems. Therefore, the strategy and tactics of combat operations depend on combat support. In essence, combat operations and combat support are inseparable in the application of aerospace power. (See figure 3-1.)

Figure 3-1. Synchronization.

Because cohesive units perform better in combat, unit integrity must be retained to the maximum extent feasible when a unit deploys. Command is most effective when the operations and support elements of a unit have synchronized their working relationships prior to deployment. Requiring commanders who are deploying to an operational base to form a new unit and become immediately supportive of combat operations is both unrealistic and potentially disastrous in war.

While each Service has some organic capability to sustain itself, every Service relies heavily on several common distribution elements. This dependency demands extraordinary coordination from many diverse functions and organizations. For instance, procurement, transportation, supply, personnel, and information functions must be integrated to find, acquire, store, move, and track resources from one location to another. Organizations, such as the Defense Logistics Agency, General Services Administration, and the Defense Fuels Supply Organization must synchronize their activities with the transportation operating agencies—Military Traffic Management Command, Military Sealift Command, and Military Airlift Command—not to mention host-nation communication and transportation functions. The magnitude and complexities of a major force deployment and resupply stretches each distribution element to its limit. Without interagency synchronization, forces and supplies will not arrive at their destination in the quantities and time needed.

The Air Force cannot expect to sustain itself for very long in combat without learning to work as a component of a national or international team capable of sharing resources. Having the ability to quickly mobilize resources that are outside the Air Force organic support structure is critical to combat sustainment. First, the Air Force must have plans and organizations that can make the transition from peacetime to wartime operations a familiar process. This transition becomes familiar only with periodic exercise. In short, mobilization—partial or full—of the industrial base and reserve components demands continuous management attention to remain an effective national security option.

Finally, synchronization is built through effective training and leadership. It is generated by a sense of common identity and shared purpose. Training is the peacetime investment made in people to yield wartime capability. Training prepares and sustains the warfighting spirit of both the combat operations and the combat support warrior. All Air Force training must focus on establishing and maintaining teamwork and the capability of a force to win. The will and skill of the warrior must be developed and continuously reinforced. A true warfighting spirit evolves with training, and is sustained by leadership, which reinforces unit cohesion and pride. Together, they can renew an appreciation for basic military values such as, discipline, cooperation, and professionalism.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

LARRY D. WELCH, General, USAF
Chief of Staff

NORMAND G. LEZY, Colonel, USAF
Director of Administration

*U.S. GOVERNMENT PRINTING OFFICE:1989-240-979;81391