

WHITE PAPER

AIR FORCE ORGANIZATIONAL PRINCIPLES

The Air Force (AF) operates as part of a joint, inter-agency team by providing air and space power. Defined through operating concepts, these capabilities help accomplish the missions directed by the National Military Strategy (NMS): defending the U.S. homeland and territory from direct attack; operating in and from four forward regions to assure allies and friends, dissuade competitors, and deter/counter aggression and coercion; surging globally to defeat adversaries in two overlapping military campaigns; and preserving for the President the option to call for a decisive defeat in one military campaign. The Air Force is organized, trained and equipped to integrate with other services, agencies, allies and coalition partners to meet these mission requirements. Our combat unit is the Air and Space Expeditionary Task Force (AETF). We operate globally from strategically located main operating bases in the United States and overseas, as well as from forward-operating sites and cooperative security locations. We fight as a Total Force and need Agile Combat Support (ACS) for success. Our core competencies--Developing Airmen, Warfighting-to-Technology, and Integrating Operations--ensure AF relevance today and tomorrow. This paper outlines expeditionary principles that will shape our Future Total Force.

Our Air And Space Expeditionary Air Force

The AETF--tailorable, scalable, and task-organized to provide those capabilities required for the mission--will remain the Air Force's warfighting unit. Commanded by the Commander, Air Force Forces (COMAFFOR), units are deployed as expeditionary squadrons, groups, or wings and presented to the Joint Force Commander (JFC) as an AETF. The Numbered Air Force (NAF) is the senior warfighting echelon of the Air Force. Squadrons are the building blocks for AETFs. We organize and train our AETFs using the Air and Space Expeditionary Force (AEF) framework, dividing our combat and ACS forces into ten AEFs. From these, we man and equip AETFs. Each AEF will be on a 20-month cycle of training, employment, and reconstitution. This 20-month cycle is the best way to provide Regional Combatant Commanders (RCCs) with capable, ready forces.

We must modernize our forces in a way that produces equally capable AEFs. Equally capable AEFs enhance readiness, provide consistent support to RCCs, and create predictable deployments. To balance capability among AEFs, we must optimize flying unit size, crew to aircraft ratios, and basing structure wherever practicable. For instance, as new aircraft come on line, we do not expect to see a

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one-for-one replacement. These advanced aircraft will have increased combat capability and higher sortie utilization rates, enabling us to increase integrated Total Force crew ratios and improve combat performance. Target crew ratios must support training when units are home and 24-hour combat operations—the new crew ratios must work for both. The table below lists optimal squadron sizes and crew ratios for combat units. Within these aggregates we will make AC/RC mix decisions based on combat capability and readiness. There may be exceptions to these guidelines for units with special mission requirements (including training), ARC units, and overseas units, or to accommodate the draw down of legacy platforms.

<i>Aircraft</i>	<i>Type</i>	<i>Crew Ratio AD / Blend</i>	
<i>Fighter (24 PAA)</i>	A-10	1.5	
	OA-10	2.0	
	F-15C	1.25	
	F-15E	1.25	
<i>Block 32 and lower</i>	F-16	1.25	
<i>Block 40 and higher</i>	F-16	1.5	
	F/A-22	1.5 / 2.0	
	F-35	1.5 / 1.75	
<i>Bomber (12 PAA)</i>	B-1	1.3	
	<i>(B-2, 8 PAA)</i>	B-2	1.3
		B-52	1.4
<i>Large Transport (12 PAA)</i>	C-5	3.6	
	C-17	5.0 (3/2)	
<i>C-130 Transport -- 16 PAA</i>	C-130 E/H	2.0/2.5	
	C-130J	2.5	
<i>KC-10 Tanker – 12 or 15 PAA</i>	KC-10	3.5 (2/1.5)	
<i>Tanker – 16 PAA</i>	KC-135	2.0	
	KC-X	3.0 (2/1)	

We must also size our wing-level organization to enhance AEF readiness. We will explore options to make air wings larger, but expeditionary requirements, access to training airspace, infrastructure, and staff needed to support 24-hour operations indicate three squadrons is the right size in most cases. We will look to consolidate bomber forces to take advantage of common requirements

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and geographical force protection while supporting the Global Strike operating concepts and RCC needs. Mobility wings will vary in size based on facility infrastructure and the requirement for dispersed aerial ports to support joint mobility. As we optimize unit size, we will strive to keep formal training units separate from combat organizations. Training units should be distinct, independent, fully resourced entities, so training is not routinely impacted by deployments.

Training transformation, a key component to improving AETF capability, will focus on joint readiness and accommodate the unique training requirements of ARC units. Distributed Mission Operations will enhance combat integration by allowing geographically separate units the opportunity to train together. Training will also be a factor in our basing strategy. Organizations that routinely fight together should have the opportunity to train together. Finally, we will look for opportunities in our strategic basing to foster joint training.

It takes ten AEFs to keep our continental U.S. (CONUS) and outside the CONUS (OCONUS) forces balanced and ready. This force size also preserves a surge capability beyond the two AEFs normally deployed at any given time. For example, the Air Force deployed forces from eight AEFs during Operation IRAQI FREEDOM. In addition, it will maintain the 20-month cycle that ensures sustained, non-tiered readiness. To sustain total force readiness, we must balance personnel and infrastructure between CONUS and overseas basing and between accompanied and remote overseas tours. The right balance will alleviate PERSTEMPO while supporting deployed operations. In addition it will enable home station training for non-deployed units; provide essential support for dependents, retirees and other base users; and avoid out-of-cycle AEF deployments and unplanned ARC support to routine deployments. In areas where a continuing presence is needed, permanently assigned forces will assure, dissuade, and deter. These forces should be sized to respond unaided to small-scale contingencies.

Bases

The Air Force fights primarily from bases and our basing strategy contributes to the defense-in-depth called for in the NMS. We maintain strategically located main operating bases in the United States and overseas, as well as forward-operating sites and cooperative security locations. Our basing strategy contributes to the agility and flexibility of airpower, allowing us to respond to the uncertain and complex international security environment.

CONUS bases are critical for training, deploying, and employing our forces. They are also vital to homeland defense, providing sites for the full spectrum of counter air missions and mobilizing first responders. These bases must be sited to provide combat airpower over critical sites, provide a

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rapid mobility response, and support missile warning and defense. Positioning of CONUS bases will also consider support to civilian agencies responsible for consequence management and military support missions related to the war on terrorism. Dual use (state/federal) assets will be a part of this consideration. These bases will have a reachback capability to provide tasking, processing, exploitation, and dissemination for our C4ISR assets. Our missile defense will mature and we will acquire other advanced counter air capabilities like the F/A-22 and the airborne laser. We also must be able to apply force with intercontinental missiles and future systems. We must ensure our basing strategy accommodates these anticipated force structure improvements.

CONUS basing is the springboard for projecting and sustaining joint military power worldwide. For expeditionary operations, individual bases must have the capacity to surge during deployments. Though potentially unused in peacetime, this capacity will be needed during contingencies. Similarly, our bases need a collective surge capacity to accommodate natural disaster movements such as hurricane evacuations and man-made disruptions such as runway repairs. Mobility operations require at least two robust air mobility wings on each coast, an additional mobility-capable base per coast, and mobility infrastructure in Hawaii, Alaska, and Guam.

Our airlift mobility bases must have robust inter-modal transportation infrastructure to mobilize joint, interagency forces and be geographically separated to reduce the likelihood of a single point of failure due to environmental or infrastructure problems. Airlift bases located near or with primary users can enhance joint training and responsiveness. One specific requirement is to maintain the capability in the National Capital Region to provide responsive airlift support to POTUS, special airlift missions, and visiting foreign heads of state. Our tanker bases must support global deployments, Homeland Defense (HLD), joint and AF training, and nuclear mission requirements. Consequently, their locations should take into consideration Great Circle routes for air bridge operations, HLD orbits, and nuclear deterrence missions. Finally, our mobility bases must be 24-hour and all-weather capable with adequate runways, taxiways, parking, cargo ramps, and fuel to support wide-body aircraft. Other mobility airfield considerations include access to nearby training facilities such as drop zones, assault landing zones, air refueling tracks, and low-level training routes.

Considerations for bomber and fighter bases are different. Bomber bases should be located nearer the geographic center of the CONUS for strategic-level force protection. Given the relatively small bomber force, basing should be consolidated to leverage common support requirements. Where it makes sense, we should collocate MDSs to reduce cost and duplication. These consolidations should balance operational risk and cost. Bomber and fighter basing must be responsive to all RCCs, particularly in terms of our global strike capability. Fighter bases must have adequate weapons storage

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facilities and be close to ranges and training areas. We will also consolidate fighter units where it makes sense. This consideration will enable us to “rainbow” mixed units of active duty and ARC forces.

Our overseas bases provide enroute mobility for joint power projection. The Air Force has developed a “lens” concept for power projection and mobility. The lens areas are one typical mobility sortie distant from the east and west coast of the CONUS along the anticipated paths to global flashpoints. Ensuring access to, and maintenance of, these bases is vital to power projection and sustaining forward operating locations. The right mobility basing also leverages our critical air refueling capability. The remainder of our overseas basing will use provisional bases, forward operating locations, and forward support locations. A number of these may develop into airbases or become hubs supporting significant joint combat operations. In these cases, securing, opening and providing initial airfield and airbase operations is critical. As our strategy evolves, we will retain and protect unique bases to preserve access to tough-to-reconstitute infrastructure. Some bases are geographically significant for HLD, access to ranges, global mobility, and C4ISR. Space operations require locations to support unimpeded access to space. We must preserve sufficient facilities that enable development against threatening missile systems. These facilities include early warning radars, space launch systems, interceptor silos, space operations centers, airborne laser facilities, battle management command posts, control and communications sites and test infrastructure.

Technical training and educational facilities are critical as well. People are at the heart of our core competencies and, ultimately, are the source of our combat capability. To develop Airmen we must have a responsive education and training system that produces career-focused, professional Airmen instilled with an expeditionary ethos. Education and training must be requirements-based to deliberately vector the skills, knowledge, and experience of our troops. This requires a world-class infrastructure for training and education.

Ranges and airspace are part of our unique infrastructure. As our capabilities improve, test and training requirements for volume, scheduling, proximity to bases and attributes of the air space will evolve. Maneuvering airspace will be increasingly important for faster aircraft, future hypersonic vehicles, and for testing more sophisticated weapons with longer range, including directed-energy and space systems. UAVs present special basing challenges and their operations require close coordination with the FAA. Along with the airspace, we must have sufficient electromagnetic bandwidth to take advantage of new technologies for weapons and command and control (C2). Our range infrastructure must also support satellite testing, ground testing, threat assessment, and tactics development for space

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operations. We must keep our ranges and airspace relevant to our missions and develop a basing constellation that uses them efficiently.

The Air Force embraces innovative ideas to rapidly transform Technology-to-Warfighting. In a process that uses operating concepts to define and articulate AF requirements in terms of combat capabilities, we quickly move technology from the lab to the warfighter using rapid prototyping, experimentation, design, and testing. The Air Force must be able to direct the research related to air and space vehicles and materials, sensors, air and space propulsion, directed energy and air munitions. Next, the Air Force should have a major, if not controlling leadership role in research related to human systems effectiveness, information, and C2. The Air Force must continue to play a prominent role in this nation's design, development, and testing of air and space armaments, and manned and unmanned air and space weapons systems. Lastly, the Air Force must lead this nation's design, development and testing of the C4ISR network required to achieve predictive battlespace awareness and full spectrum C2 of this nation's air and space force. To be effective the Air Force needs depots, research and development facilities, a government wind tunnel and engine testing facility, and government lab facilities. This infrastructure will extend our advantage in aerospace medicine; air vehicles; C4ISR; directed energy weapons, smart weapons, satellites, launch vehicles and ICBMs. The Air Force will maintain a robust organic depot infrastructure with advanced facilities and equipment, operated by a highly qualified work force. We will also foster partnerships with the commercial sector, to ensure optimal depot maintenance capabilities.

Maintenance for our air, space, and armament systems is a core AF requirement. We will posture AF infrastructure to accommodate the arrival of future systems and technologies and the draw down of legacy systems. We require government-managed depot and supply management capabilities, plus maintenance capabilities, sufficiently sized and properly structured at all levels to provide a solid foundation for reliable, flexible, efficient, and timely support. Investment in maintenance modernization will ensure essential, enduring support for current and future systems. Materiel management activities must evolve to a network centric supply and distribution system working through a properly sized and structured Regional Support Squadron and a fully integrated AF supply system. This will allow for dynamic inventory positioning and build a responsive supply network focused on spares and equipment support using both organic and contract logistics. Fully integrating AF item management activity and logistics systems will ensure efficient and effective combat support.

If located nearby, technology-to-warfighting installations can benefit from federally funded research and development centers. It has taken decades to develop, educate, and populate our technology centers, labs and surrounding industrial partners--they are national resources. When we

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close or consolidate a center, we often lose key technical people and lessons learned. As we consider relocating or consolidating these facilities we must keep in mind that intellectual capital, as a critical resource, needs to be nurtured and managed. Often, these facilities work best when located near world-class civilian technical / industrial expertise and infrastructure.

Bases are expensive to maintain, so we must optimize the overall effectiveness and efficiency of our base loading. Where practical, we will load bases with compatible equipment and similar missions, or work with other services, agencies or organizations to share costs and services. Joint basing is worthwhile when it provides tangible added military value or provides the same or better military value at tangibly less expense. Candidates for joint use include administrative headquarters; supply and storage facilities; industrial operations; technical centers; intelligence units; education and training; and medical functions. In the Air Force, we use the concept of one base-one boss to hold our wing commanders accountable for the care of their Airmen both at home and while deployed. One example of this principle is ensuring active duty primary care providers are available for our active duty members and those family members who enroll with AF facilities. When the Air Force explores joint or dual use of facilities, this accountability must be preserved in both principle and practice. Additionally, we may gain efficiencies by collocating development and acquisition activities with test and evaluation facilities (or operational units), especially when a strong overlap between developmental and operational infrastructure exists. We may also have the opportunity to consolidate legacy force structure with an eye towards retiring those systems. Our ability to collocate combat and mobility missions will depend on many factors, including organization size, PAA, access to ranges, and the compatibility of weapons systems. As we alter basing, we must ensure that we do not load a base to the point where we cannot conduct deployment and surge operations, evacuate quickly for natural disasters, or accommodate routine repair activities. As we consolidate, we must eliminate unneeded geographically separated units and operating locations. Technological advances and changing threats have reduced the requirement for some of these locations, and because of the dedicated support necessary for these sites, the per-unit cost is frequently very high.

Encroachment and the environment are important considerations in our basing strategy. Environmental impact can be both positive and negative. We require access to ground water, the electromagnetic spectrum, and clear areas surrounding air and space operations. Overloading a base may jeopardize the availability of these resources. Urbanization, sprawl, and encroachment may further limit military operations by crowding off base clear and safety zones. Noise restrictions can limit base operations, range usage, maintenance activities and flying hours. As we look to increase aircraft utilization with our modern forces such restrictions could degrade readiness. Basing decisions

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must consider encroachment as an important determinant of military value, particularly for bases with existing encroachment constraints.

We recruit Airmen, but retain families. As our basing strategy matures, we must consider quality-of-life issues. We need to develop bases that are also quality family “home bases.” Adequate housing, educational opportunities, childcare, crime rates, jobs, access to medical care and cost of living are all important factors. Bases should provide stability for active duty families and access to services for retirees who have honorably served. When broadened to the full constellation of active and ARC bases in the “catchment area,” a robust home base concept should be part of a regional basing approach to prevent “breaking the base” when tasked for major AEF commitments.

Leveraging the Total Force

The Air Force is a Total Force. We cannot do our mission without a fully integrated team of active duty Airmen, Guardsmen, Reservists, civilians and contractors. The Guard and Reserve conduct 89 percent of Operation NOBLE EAGLE missions, guarding our homeland in the wake of September 11th. Seamless Total Force integration should become the rule. Reserve components of the Total Force provide the Air Force with a larger talent pool and bring with them capabilities acquired and honed in civilian jobs. The Total Force retains the expertise of Airmen who leave active service. Because reserve personnel move less often, they provide stability and continuity to our units.

Adjusting the Total Force mix will better maintain our effectiveness and reduce some of the demands on stressed career fields and systems. We will continue to use innovative organizations to get the most out of our combat and combat support systems in the Total Force AEF. We will also explore increasing civilian and contractor participation in base support functions and look at innovative options that allow civilians and contractors to be even more involved in our expeditionary operations. Examples of Future Total Force organizations include associate, active associate, sponsored reserve, operationally integrated and blended units. The resulting synergy will capitalize on the unique cultures and recruiting pools of each component and optimize the contributions they bring to the fight. We will need to adjust our basing structure to take full advantage of these new organizations. To take full advantage of the Total Force we must structure Guard and Reserve missions and commitments to make mobilization more predictable, improving the sustainability of the all-volunteer force.

As with the active force, modernization will reduce the amount of aircraft in the Guard and Reserve. The ARC will continue to have a substantial share of the Air Force flying mission but we can expect to consolidate squadrons into larger units, reducing the Guard and Reserve base footprint. Retaining too many legacy platforms in the ARC will decrease their relevance and contribution to

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future air and space operations We must invest our reserve components in new missions, including ISR, unmanned systems, space, information operations and emerging homeland defense missions. When it does not adversely affect military value, jointly using facilities with other service's reserve components may help reduce fixed basing costs while retaining access to preferred recruiting demographics.

Several factors affect the strategy for basing reserve components. Bases must be near population centers to facilitate recruiting. This applies to active forces as well as civilians and contractors. However, bases must be sufficiently dispersed to reduce competition among units for talented volunteers. Some ARC units benefit from being located on or adjacent to active duty installations. This can create synergy through sharing efficiencies and encourage cross flow between units. Other ARC units are best located on or near civilian airfields. These dispersed locations provide a force dispersal advantage for homeland defense and an alternate facility for emergencies. The Total Force basing strategy must find the proper balance between the preferred demographics for ARC recruiting and retention and the unit's operational responsibilities to support AEFs.

Agile Combat Support

Our AEFs need right-sized ACS forces. These forces create, protect, project, and sustain combat operations. Expeditionary Combat Support (ECS) is the deployed capability to sustain operations. It is the subset of ACS that responds quickly, is highly mobile, technologically superior, and fully integrated with operations. Our ACS force sizing must account for deployments so the home wing can continue its training and base support missions. Our deploying ECS component must be tailorable, mobile and self-supporting. Combat units will deploy into a variety of bases--from permanent presence overseas sites to bare-base expeditionary locations. Our ECS forces must be balanced so each AEF can support the spectrum of requirements. ECS forces must be prepared to deploy independent of an AF combat unit. This means our total ACS capability will be more than that needed to support ten AEFs. To improve our capability to respond quickly with ECS, the Air Force will further refine Contingency Response Group (CRG) capabilities. CRGs provide rapid a response to secure and protect airfields, open airbases, perform initial airfield operations and ensure a smooth transition for follow-on forces. Our expeditionary operating concepts outline a transition beginning with the airfield stand-up (or seizure, if in a non-permissive environment) to initial operations, and eventually (if required) sustained operations. In this construct the CRG is responsible for operations beginning with, and immediately subsequent to, airfield stand-up. As soon as practical, responsibility for initial operations will be handed off to AEF mission support forces, RED HORSE, and Combat

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Communications forces. If sustained operations are required, AEF mission support forces will eventually assume responsibility for all functions. Like combat forces, ACS requirements drive special basing considerations. We will look to develop constellations of bases that can provide support to one another as portions of a wing's normal ACS contingent is deployed. We will also consider ACS training and deployment requirements as we refine our basing structure. Because ACS forces are often the first to deploy, our basing must provide the training and test ranges for CRGs and other ACS forces to maintain a high state of readiness. We will also consider locating combat and support forces near one another when it enhances readiness. Finally, we must optimize the Total Force mix in ACS so we can respond to a crisis without mobilizing reserve components.

Summary

The Air Force is one member of a team charged with protecting the security and interests of the United States and its allies. The most effective way to execute our mission is to organize, train and equip for maximum flexibility, responsiveness, and lethality. To do this we must balance capabilities across our AEFs, devise basing strategies and unit organizations that support our operating concepts, promote an effective agile combat support infrastructure, and find the right Total Force mix. These foundations will allow the Air Force to accomplish its mission of securing the Nation's future.