

**At AFA's symposium, USAF leaders laid out six critical capabilities that will make aerospace power "decisive."**

# The Core Competencies of the Force

By Robert S. Dudney, Executive Editor

## General Fogleman

The Air Force has a new strategic blueprint, one that is grounded in six core competencies and the explicit conviction that aerospace power will be "decisive" in future operations, Gen. Ronald R. Fogleman, Air Force Chief of Staff, told AFA's Los Angeles symposium.

In his words, "Only air- and space-power provide the nation the ability to find and hit strategic centers of gravity directly, as well as the ability to operate at operational and tactical levels of war."

At the heart of the new vision—called "Global Engagement"—lies the "reality" that it soon will be possible "to find, fix, or track and target anything that moves on the surface of the Earth," said the General. The new architecture supersedes "Global Reach, Global Power," the white paper drawn up in 1990.

Making the vision possible, the Chief said at the October event, will be six core capabilities, comprising air and space superiority, global attack, rapid global mobility, precision engagement, information superiority, and agile com-

## Six at the Core

A core competency comprises professional knowledge, specific airpower expertise, and technological prowess. USAF has six core competencies:

**Air and Space Superiority:** control over what moves through air and space.

**Global Attack:** ability to attack rapidly anywhere on the globe at any time.

**Rapid Global Mobility:** ability to move rapidly to any spot on the globe.

**Precision Engagement:** ability to apply selective force against specific targets and achieve discrete and discriminant effects.

**Information Superiority:** power to gain, exploit, defend, and attack information.

**Agile Combat Support:** provision of strong combat support and fewer and leaner logistics forces.



General Fogleman



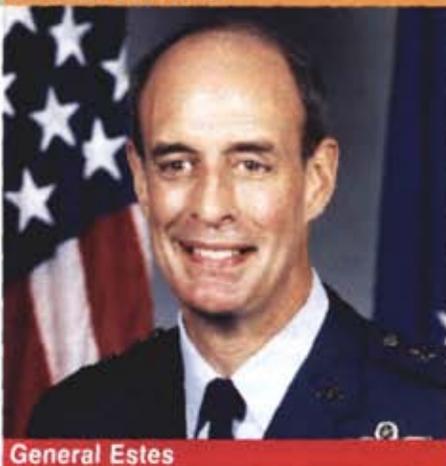
Under Secretary de Leon



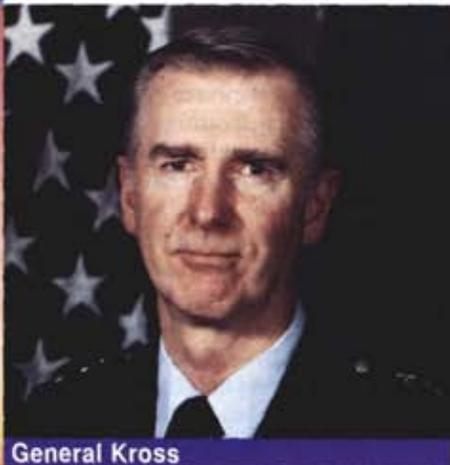
General Hawley



General Casciano



General Estes



General Kross



bat support. Specific capabilities might change, he said, but not “the vision of air- and spacepower as the decisive force for the twenty-first century.”

General Fogleman emphasized that USAF will act as part of a joint force. He added, though, that speed, range, precision, and lethality will make aerospace power a singular contributor to American defense.

General Fogleman’s comments were his first concerning the result of an 18-month-long review of Air Force plans and capabilities. Shortly before the Los Angeles symposium, senior USAF officials met at the US Air Force Academy to set a new service course.

Out of that Corona conference came an agreement to present three new or greatly revised core competencies.

**Air and space superiority.** Until now, “air superiority” and “space superiority” were separate concepts, but they now have been blended. At Corona, said General Fogleman, Air Force leaders decided it was vital to combine the two, the better to reflect “the transition [of the Air Force] to an air and space force and the need to control the entire vertical dimension—the domain of air- and spacepower.”

The Chief went on to say that Air Force leaders see control of the combined air-space environment as the prime requirement for future military success, guaranteeing freedom from attack as well as freedom to attack. “Simply put, air and space superiority is the key to winning wars with the fewest losses,” said the Chief of Staff.

**Global attack.** This new item has two distinct aspects, said the General. The first, seen at the strategic level of war, reflects “the ability of the Air Force to find and attack targets anywhere on the globe.” The other aspect, General Fogleman said, concerns the expeditionary nature of today’s Air Force, exemplified by US-based air expeditionary forces.

With the US reducing its number of fixed overseas bases, said the General, this characteristic of the evolving Air Force “will be key to rapidly providing tailored air and space capabilities” to theater commanders.

**Agile combat support.** Another new item, this core competency highlights the need for USAF units to move rapidly and be able to conduct sustained

combat operations after arriving. It comprises dozens of groundbased tasks and reaches outside pure logistics to include Security Police, engineering, and other critical combat-support functions.

According to General Fogleman, Air Force leaders adopted this new item at Corona “with the view of making our forces more expeditionary in nature.” The Chief of Staff added, “We must never allow ourselves to get in the embarrassing position of having to rely on a contractor . . . to put combat forces in the field.”

The other three core competencies had already been announced and were reaffirmed at Corona.

The Air Force officials restated the need for information superiority, claiming it has assumed critical importance. Here, USAF has built impressive offensive and defensive information capabilities, said the Chief, and will rely more and more on its ability to use and protect information. The Air Force leaders also restated the need for rapid global mobility in light of burgeoning United States combat, peacekeeping, and humanitarian activity and for precision engagement—the ability to apply selective force against specific targets to achieve decisive effects—to sharpen the “blunt instrument” of military power.

### Under Secretary de Leon

When it needs to establish an armed overseas presence, and fast, Washington will turn more and more to the Air Force, whose expeditionary air units are as effective as aircraft carriers, Under Secretary of the Air Force Rudy de Leon told symposium attendees.

“Conventional deterrence has been traditionally thought of as, ‘Where are we going to move the carrier?’” he said. “Now, it is being shown . . . to include, ‘Where are we going to deploy the air expeditionary force?’”

The Air Force defines presence as “the posturing of military capability” to deter attack or influence adversaries or friends. The Navy has viewed presence primarily as a carrier mission, but over the past four years, the Air Force has developed the AEF option—fast-moving, self-contained packages of fighters and support aircraft backed up by bombers in the United States.

Four full-scale AEF deployments to

the Persian Gulf region left little doubt about the utility of the concept, Secretary de Leon said. “The Air Force has shown it can do the presence mission as well as the seabased component,” he said. “We can generate more sorties, and we are more efficient.”

Air Force leaders repeatedly have stated that USAF does not seek to supplant carriers, only complement them. The service most recently dispatched an AEF in September during the latest face-off with Iraq. It sent a package of 10 F-117 stealth fighters from New Mexico to Kuwait “in less than a weekend’s time,” Secretary de Leon said.

Such deployments are “previews” of the way airpower will be used in the future, he said, noting that AEFs generally do not inflame local sensitivities the way ground forces do. However, because the air units are deploying without Army support, they probably are more vulnerable—witness the terrorist bombing of the Khobar Towers complex in Saudi Arabia in June.

As a result, said Secretary de Leon, USAF will have to pay greater attention to force protection. “The air expeditionary force can put bombs on target in southern Iraq with great precision; you can’t take our Air Force on in the sky,” he said. “The challenge is to make sure that when we are home-based at a location, particularly overseas, the perimeter is secure and we know the threats that are out there.”

The Secretary maintained that the Air Force is now in a “unique time,” one in which the nation has put great emphasis on airpower and in which the Air Force has had the opportunity to develop many innovations and test them.

He said that Operations Deliberate Force—the short but intense 1995 bombing campaign against Bosnian Serbs—and Southern Watch—the long-running enforcement of the no-fly zone over southern Iraq—“have really allowed the Air Force to perfect many capabilities.” These include the use of stealth, Suppression of Enemy Air Defenses, and combined use of airborne reconnaissance and communications platforms, such as the U-2, RC-135 Rivet Joint, E-8 Joint Surveillance and Target Attack Radar System (Joint STARS) aircraft, and E-3 Airborne

Warning and Control System aircraft. With the use of these aircraft and a host of unmanned air vehicles (UAVs), the Air Force view of the battlefield is increasing in clarity and scope.

USAF today has “the right modernization program” to meet future needs, said Secretary de Leon. Such major systems as the C-17, Joint STARS, and the Joint Strike Fighter are on track.

Most important, he said, the Air Force fighter of the future, the F-22, is on schedule, moving toward first flight this spring. The Air Force has dealt effectively with the technical problems. “If you asked me the biggest issue facing us now on the F-22, it is to make it affordable,” said Secretary de Leon.

The Air Force established the Joint Estimate Process, an effort to scrub out costs and increase production efficiencies. “We have developed . . . an engineering marvel—low observability [with] a propulsion system that will cruise in excess of the speed of sound. Now our challenge is to [make] the F-22 affordable and [get it] into the field.”

### General Estes

The United States has begun preparing for a new era in both peaceful and hostile uses of space, reported Gen. Howell M. Estes III, commander in chief of US Space Command and North American Aerospace Defense Command and commander of Air Force Space Command.

“We are the world’s most successful spacefaring nation,” said General Estes, who quickly added, “We are also the world’s most space-dependent nation, thereby making us vulnerable to hostile groups or powers.” For the US, he said, interruption of spacebased intelligence or communications would be “crippling.”

As a result, he said, spacepower will soon become as indispensable as airpower. He reported that potential adversaries are seeking the means to threaten the American edge in space, and the US has to respond.

“This is not a surprising development,” said General Estes, “nor should it be either feared or welcomed. It is simply a fact. We have militarized space.”

The General said these developments have several important implications

for US Space Command and USAF’s space forces.

For one thing, he said, the command must develop ways to prevent an enemy’s use of space against the US. In future operations, US forces will not be able to maneuver and dominate a theater “if the enemy knows our every move,” warned the space commander.

US Space Command would have “to deny the enemy access to space and to our dispositions and plans” by developing methods of “space control and spacebased information warfare.”

A second task will be to thwart any attempts to disrupt space support of American forces. The General declared, “We must be able to [ensure] friendly access to space” and “if necessary, counter hostile terrestrial or space systems.”

Air Force Space Command would perform these missions for US Space Command, said General Estes. He noted that the development of such capabilities, not to mention their actual use, would have to gain explicit approval from civilian leaders, though it is the duty of the military to start working up real options now.

Assuming such threats can be eliminated or at least controlled, space systems will make major contributions to the United States. In future conflicts, the General said, “we will know exactly where to maneuver and at what strength, at what time, and with what composition to have the greatest impact on the enemy. We will be able to do this because we will know with a high degree of accuracy where the enemy is and what they plan to do.”

Space systems are poised to make a great leap in capability, said General Estes.

“We now have the ability to know and monitor the world situation on a daily basis,” he continued. “As each day passes, we will gain more and more capability. Soon it will be on an hourly basis, and eventually we will have the kinds of information I am talking about within minutes—or even seconds.”

Nevertheless, said the General, DoD must do a better job of supporting terrestrial operations worldwide. “We have to get the benefits provided by spacebased systems in the hands of the warfighter at the right time,” he said,

adding, “I will assure you that that is where my focus is.”

General Estes provided a snapshot of programs critical to Space Command’s emerging mission. Near-term programs include the Evolved Expendable Launch Vehicle, Spacebased Infrared system of warning satellites, Milstar communications satellites, and Global Broadcast System. In the longer term, said the General, DoD and the space establishment probably will need to pay attention to threats not only from ballistic missiles but also from cruise missiles.

### General Hawley

At Air Combat Command, the precision “revolution” rolls on, leading to increasingly accurate and powerful weapons for theater combat, according to the ACC commander, Gen. Richard E. Hawley.

“The next stage in this revolution is now upon us,” General Hawley declared to attendees at the AFA symposium.

He explained that USAF is starting to put into the field a new generation of systems that integrate air- and spacepower in heretofore unimagined ways. One result is bombs that exploit the power of satellite navigation to find their way to within a few feet of any target. The first of these, the Global Positioning System–Aided Munition, is now being integrated into B-2 bombers at Whiteman AFB, Mo. The GAM takes its bearings from the signals of GPS satellites.

To dramatize its power, General Hawley rolled video of an October 8 test at Nellis AFB, Nev., in which two GAM-equipped B-2s attacked an array of 16 targets on the Nellis Range Complex. The B-2s launched their weapons from an altitude of six miles and a horizontal distance from the target of six miles. Symposium attendees watched as, one by one, all 16 targets were struck and either destroyed or badly damaged.

General Hawley contrasted this with an Operation Desert Storm attack using standard ordnance that required the attacking aircraft to come close to the target. On January 19, 1991, an Air Force package raided a complex near Baghdad. It required 72 F-16s, supported by 18 other fighters. USAF lost two F-16s, and Iraq captured Capt. Mike Roberts and Maj. Jeff Tice.

Despite such incidents, critics of high-tech weapons have not gone away. "They argue that the old ways are much less expensive and just as effective, and they build spreadsheets to prove the point," said the General. "Too bad they can't roll off base into a hail of AAA fire. It can be very enlightening. Maybe they should talk to Mike Roberts and Jeff Tice."

Similarly, said the General, USAF is now "fighting doggedly" against critics to acquire the stealthy F-22 fighter, crucial to the air-superiority mission of the future.

"The pundits . . . say there is no threat and that we are buying technology for technology's sake. They say we simply can't afford it." He added, "The pundits are wrong."

He recalled that, after setbacks in Vietnam, USAF vowed never to be caught short again. "We fielded the F-15 . . . over howls of protest that it was too costly, that we were buying technology for technology's sake." Vindication came in the Persian Gulf air war.

"We can no more guess what kind of challenge our nation will face in the year 2020 [after the F-22 is in service] than those who fought to field the F-15 in 1975 could predict an operation called Desert Storm in 1991," said General Hawley.

He said that "there is a lot going on" in aerial reconnaissance. The Air Force continues to hone a traditional fighter reconnaissance capability, he said, noting that the Virginia ANG exercises a low-altitude, under-the-weather capability. However, he said, the really big effort focuses on unmanned aerial vehicles.

"That is where we . . . and this whole family of UAVs that is emerging, such as the Predator, Global Hawk, Dark-Star, and tactical UAVs for the Army and Marine Corps," are going, he said.

He noted that the first USAF unit of Predator aircraft has been operating out of Tazsar AB, Hungary, in support of the NATO peacekeeping force in Bosnia-Herzegovina. These UAVs provide electro-optical, infrared, and synthetic-aperture-radar reconnaissance and can range out to 500 miles, loiter for six to eight hours, and downlink information via the Joint Broadcast System to a theater commander in real time.

"That is the future of reconnaissance," he observed.

Air Force space assets also shape up as major contributors in surveillance and reconnaissance, with quick feedback. "We don't have the luxury of time in the reconnaissance business any more," said the General. "We've got to be able to be over the targets, we've got to get the information, and we have to get it into the hands of the user in near real time."

### General Kross

The C-17 Globemaster III transport finally is entering the Air Force but evidently not swiftly enough to prevent at least a temporary drop in airlift capacity after the turn of the century, said Gen. Walter Kross, commander of Air Mobility Command and commander in chief of US Transportation Command, to the AFA audience.

"Watch the numbers very carefully," he said. "Replacing 256 C-141s with 120 C-17s has some interesting arithmetic along the way and at the end."

Under the current plan, the Air Force will steadily retire older C-141s, the last of which will leave the active force in 2006. On January 1, 2000, General Kross noted, the Air Force will have in service only 52 C-17 advanced transports. As a result of the faster retirement of C-141s, Air Mobility Command will have 24 fewer strategic airlifters to carry out worldwide commitments.

In the words of the Air Mobility Command chief, "Fewer tails means less flexibility, means less responsiveness." The General said that the Air Force would have to try to make up for reduced capacity with greater efficiency.

The C-17 remains AMC's highest priority, according to General Kross. So far, the command has taken possession of and is operating 29 C-17s, or nearly a quarter of the total planned fleet. The new airlifters "are performing brilliantly," General Kross remarked.

Only a year ago, USAF was awaiting word on whether it would be permitted to proceed with the planned buy of 120 C-17s or would have to opt for a mix of C-17s and other aircraft. In the end, the Pentagon approved the full purchase. Later in the AFA symposium, Under Secretary Rudy de Leon declared an

end to the airlift debate. "We have, after many years of struggling, solved the airlift problem," he said, referring to the C-17 decision.

Also on the modernization front, General Kross noted that acquisition of new materiel-handling equipment is "critical."

"The backbone of our current MHE is the 40K loader, which is old and unreliable," he said. The Air Force wants to buy 318 of the new loaders to replace the older ones, but Congress failed to include funding for the procurement in the final 1997 Air Force budget. "We have got to have this program," said the General, because, collectively, the loaders are "the weakest link" in AMC's hardware inventory.

The current loaders average a mean time between failure of only 10 hours, said General Kross.

The command also has a requirement to replace 264 1960s-vintage, 25K loaders. AMC proposes to acquire an off-the-shelf candidate, one option being British and the other Australian.

"We at AMC need loaders because we have got to get the force providers to the fight," said the General. "Very simple. It might not be really interesting to many people, but we pay a lot of attention to it."

AMC is continuing to modernize its fleet of 602 KC-135 aerial tanker aircraft. They are among the oldest airplanes in the Air Force inventory. "Keeping them in a high state of readiness is one of our major challenges," noted the General.

He pointed out that the tankers are the leading edge of every Air Force operation and that the KC-135 provides some 90 percent of USAF's refueling capability.

"Right now, they are reliable," said the AMC commander, "but we are having some corrosion problems with them."

And that's just on the outside, noted General Kross. He pointed out that the "innards" of the entire fleet must at some point be upgraded, first with an improved radar, glass cockpit, and GPS receivers. After that, plans call for installing more advanced radios, antennas, and avionics to ensure that the aircraft operate effectively anywhere they are needed.

The General observed that AMC is a very busy command these days, and the public gets its money's worth. He pointed out that the command is stretched tight.

"Supporting any particular [theater commander in chief] to fight his war, for us, is not enough," he said. "We have got to be ready to support *two* nearly simultaneous regional contingencies. This is an important point: Even when mobilized, nearly all of our mobility forces support one major regional contingency, and then they reroll to a second major contingency."

He added, "If you leave with one fact, that ought to be the fact that you leave with."

### General Casciano

In the forthcoming battle of the infosphere, USAF faces three types of opponents—gunslingers, transnationals, and nations, according to Maj. Gen. John P. Casciano, assistant chief of staff, Intelligence, at Air Force headquarters in Washington, D. C.

By this, he means the lone computer hackers, tight-knit terrorist and other criminal groups, and regular defense establishments in foreign countries. In all cases, said the General, USAF has a simple objective: "Make sure that you can do unto others so they can't do unto you, and then take advantage of superior information capabilities."

The "infosphere" is the virtual world of linked computer networks and communications critical to modern militaries. General Fogleman calls it a fifth dimension of warfare, on a par with land, sea, air, and space.

General Casciano said USAF must be able to "attack," but he avoided detailed discussion of offensive information warfare (IW) in peacetime. "I don't see the US Air Force engaging in that," he said. "That is going to be a legal thicket that the national community is going to have to work through."

He focused his statements on defensive aspects of IW. Already, the Air Force is contending with attacks by computer hackers, whom the General referred to as "ankle biters."

"These are the gunslingers of the twenty-first century," he said. "They do attack. They use the same kinds of tools that we are [accustomed]

to using in the military. They do reconnaissance in cyberspace, surfing the net, collecting information. They will do intelligence preparation of the battlespace, so they can map our systems and our capabilities and our information. They use stealth tools, breaking into systems and leaving trapdoors for later exploitation. And they use precision attack."

In one recent case, he said, a hacker got on the Internet through a provider in Massachusetts and entered secure computer systems at Patrick AFB, Fla. The hacker then went to several sites on the West Coast, where he engaged in "password sniffing, probing, intel preparation of the battlespace." In another case, a hacker attacked an Air Force Academy system with an e-mail bomb, which drastically slowed Academy operations.

Other attackers are "transnational" groups of terrorists, narcotics traffickers, religious zealots, and criminals. Here, he said, "we are really moving into a multiplayer world where maybe you've got some different actors on the stage who can do you a lot of damage." He noted the example of an Italian leftist group that organized a shutdown of the Internet in Mexico and France.

Nation-states, too, are aware of the power of IW, the General said. About a dozen nations have active offensive or defensive programs, he reported, and NATO is talking about what it needs to do about IW. The US is engaged in bilateral discussions with several friends and allies about information warfare and command-and-control warfare.

The armed forces are deeply engaged, and for good reason. More than 90 percent of defense communications use commercial channels, said the General, and the military relies heavily on commercial databases.

He noted that many critical Air Force cybernetworks are at risk. These include medical, with its personnel and blood-supply records; maintenance, with its automated repair systems; transportation, with its cargo-control network; personnel and finance, with its pay data; munitions, with its stock records; and logistics, with its plans and parts control system.

Enemy information capabilities also threaten Air Force combat systems. According to General Casciano, IW attacks

could destroy an aircraft's hardware and software components; jam, upset, or burn out aircraft systems; corrupt its navigation capabilities; and pose a threat to onboard databases.

"Whether it is operational information, war-planning information, or intelligence information, we are very dependent on the microchip, on the Internet, [and] on global communications, [all of] which, by and large, are commercially driven," he said.

He continued, "We can talk about encrypting. We can talk about closing systems and all, but ultimately, what we've got to do is manage the risk that is out there. We cannot, at least within the current budget environment, build a completely closed system. It just would not work."

General Casciano said the Air Force has taken several important steps in recent years. In 1993, it opened the Air Force Information Warfare Center to develop concepts, build tools, and develop tactics and techniques to be used by combat commands.

In addition, the Air Force in 1995 formed the 609th Information Warfare Squadron at Shaw AFB, S. C., to develop ways to integrate IW into operations.

The General said the Air Force is learning how to build a "cyber fence" around its bases and forces, whether in garrison or deployed overseas, so that anything that comes in enters through network-security monitoring equipment able to detect and characterize an attack.

To raise the level of IW knowledge in its ranks, the Air Force is implementing two new courses this year. One, a three-day course to be given at Maxwell AFB, Ala., focuses on general officers and senior civilians. The second will be given to lower-ranking members. The Air Force expects about 1,000 students per year to go through the one-week course.

"We have done a pretty good job in planning to protect our fixed-base structures," said General Casciano. "We have not really made the leap into a deployed situation, which is where we are going to be vulnerable in a conflict."

He added, "We have to worry about force protection in a physical sense. We also have to worry about force protection in a cyber sense." ■