



The Space Cadre

The Air Force's goal is a "space-oriented culture of professionals" who will advance US power.

By Peter Grier

DECADES ago, Generals Billy Mitchell, Henry H. "Hap" Arnold, Curtis LeMay, and others did it for air operations. Now today's Air Force leaders are doing it for space.

"It" is the building of a cadre of military professionals to ensure long-term US domination of an entire medium.

USAF launched its "space cadre" effort three years ago, spurred on by the blue-ribbon Commission to Assess United States National Security Space Management and Organization. That panel, chaired by Donald H. Rumsfeld before he became Secretary of Defense, was highly critical of certain US space practices, including its handling of military space personnel.

USAF is putting the finishing touches on its Space Professional Strategy, according to top officers. The service has identified thousands of airmen who have the skills to be part of a space cadre.

It has almost completed a set of academic courses. The enterprise also has been linked with other USAF force development efforts.

On a scale of one to 10, with 10 being complete, cadre development stands at 8.75, reports Gen. Lance W. Lord, commander of Air Force Space Command, Peterson AFB, Colo., who added, "We've done, I think, a great job of getting started."

The goal is to establish a group that can spearhead advancement in the state of US space power and dramatically transform military and intelligence operations, say Air Force leaders.

Increased US military dependence on space systems may mean that reaching this goal is more important than ever.

“More and more, I believe our warfighting operations are dependent on our ability to collect information from space and to network our forces using space assets,” said Undersecretary of the Air Force Peter B. Teets, the Pentagon’s point man for all things regarding military space.

Excellence has characterized the Air Force space program since its start in the 1950s. Development and operation of USAF’s highly sophisticated missiles, rocket boosters, and satellites would not have been possible without scientific and technical expertise of the highest order.

Nothing Is Assured

However, said the space commission report, it would be a gigantic mistake to take such excellence for granted. It can only be maintained by means of intense American investment in career development, education, and training, the commission warned.

At the time the panel issued its report in January 2001, commissioners did not like what they were seeing. “The Department of Defense is not yet on course to develop the space cadre the nation needs,” the report concluded.

The panel wanted to give the Air Force “a clear opportunity to create a space-oriented culture” composed of “military professionals who could directly influence the development of systems and doctrine for use in space operations.”

The nation’s “vital interests” depend on such a cadre, the commissioners said. They added that the pace of technological change is so great that there must be a core group able to make “a concentrated effort” to protect the US space and information infrastructure. “Such efforts are not being pursued with the vision and attention needed,” the panelists said.

The report itemized numerous deficiencies. Ever since, USAF has been struggling to fix them.

Pilots, nuclear submariners, and others in specialized military fields typically spend about 90 percent of their careers within their specified field. In 2001, however, less than 20 percent of all of the flag officers serving in key operational space lead-

ership positions had come from career space backgrounds, said the commission.

In the past, the commissioners said, US military space forces had relied too heavily on officers trained for space only after they had moved into their space jobs. That approach does not work well in an era in which space missions are becoming more important to military success and space systems are becoming ever more complicated.

“Perhaps more than other areas,” said the panel’s report, “space benefits from a unique and close relationship among research, development, acquisition, and operations, as spacecraft are usually procured in far fewer numbers—sometimes as few as one or two—than are tanks, airplanes, or missiles.”

Like Rickover

The panel suggested USAF adopt the kind of intensive, career-long technical education designed for, and imposed on, the nuclear Navy by the legendary Adm. Hyman G. Rickover.

Indeed, space education should continue its rise to prominence in all the services’ professional military education institutions, said commissioners.

“Commanders would be better able to exploit the full range of combat capability at their disposal if they were educated from the beginning of their careers in the application of space systems,” said the report.

Air Force Space Command has been working to develop space-oriented professionals for years, noted Lord. Prior to the Space Commission report, he said, Space Command had experts leading many of its activities.

However, he added, “I think if you took a look across the whole spectrum of space, it’s fair to say that we needed to do a better job.”

Since 2001, therefore, the development of the space cadre has topped the list of priorities for the leaders of Air Force Space Command and for Teets, whose position is designated civilian head of national security space programs.

The Air Force Space Professional Strategy was officially promulgated last spring. Funding for space professional development is pegged at almost \$10 million for Fiscal 2004. Plans call for that figure to rise to \$22 million by 2009.

The first goal of the strategy was an obvious one: Identify the space cadre’s prospective members.

According to Lord, Space Command by July 1 will have identified about 7,000 suitable personnel.

“If you look at all the folks [we’ll] deal with in the space business, we’ve put our arms around that,” said Lord.

Furthermore, Space Command has listed a series of qualities and capabilities that members of the space cadre should possess. It is currently evaluating every likely member to see how many possess these skills, with an eye toward the measurement of career development.

The point, said Lord, is to get away from billet management and get into an inventory management model.

Lord said Space Command needs to be able “to track [cadre] members by who they are personally, plus what their attributes are in terms of where they’ve been, what their assignments were, what kind of focus they’ve had in the business—whether they’re missile warning specialists, or launch specialists, or what kind of training they’ve had.”

Three Courses

The second goal is to improve space career development. To that end, Space Command and Air Education and Training Command are putting together a series of courses:

- Space 100. This comprises the basics. The current schedule calls for it to be available online in October.

- Space 200. This more-advanced course will be geared to personnel nearing the 10-year mark of their careers. Space 200 has already been prototyped and validated and is being taught in Colorado Springs, Colo., by Space Warfare Center personnel. “[Space 200] is a look at ... how it [space] supports the operational level of war,” said Lord.

Example: In one recent Space 200 classroom, students were separated into groups, each assigned a task: develop requirements for a satellite to carry out a particular function in support of a deployed joint force commander. First they had to determine an ideal capability. Then they had to do trade-offs, determining what capabilities they could get with the budget they had. The notional satellite was then matched with a

booster and moved into production. "So it was kind of an exercise in understanding the acquisition process as well as what it took to meet the operational needs," said Lord.

● **Space 300.** This top-level space course still is being developed. It is designed to fit into the latter stage of a cadre member's career. It will teach space doctrine at the strategic level—the importance of space superiority, generation of combat effects through space, etc.

Among those eligible for this education, and for cadre membership generally, will be engineers, scientists, program managers, officer and enlisted space professionals, and even those who enter and leave the space career field, such as intelligence and communications specialists.

"What we're trying to do is to institute a stronger, technically oriented, fully capable cadre of people," said Lord. "We're looking at the three levels of war—strategic, operational, and tactical—and approaching it in a force development sense so that we can build our people."

Within Space Command, the space cadre management office reports to the vice commander, Lt. Gen. Daniel P. Leaf. By the end of this year, cadre development should be well-positioned, with all courses up and available.

There's already a periodic newsletter, *Vigilant Vector*, through which Space Command leaders communicate with cadre members. This summer AFSPC should publish the first issue of a space professional journal.

Within the year, AFSPC should have in place a space cadre certification process so that members can understand their place in the structure. This may include special badges or other identifiers.

"I would like to go to a totally new, highly visible way to recognize the members of the cadre," said Lord.

Of course the space cadre is both an Air Force and a Department of Defense-wide endeavor. As the designated Pentagon executive agent for space, Teets exercises oversight of Space Command and outreach to other services and civilian agencies.

Depth and Breadth

The Defense Department wants, as its ultimate goal, an established group of "space professionals" who have "the depth and breadth of train-

ing and experience required to advance the use of space power and to transform military and intelligence operations," said Teets.

Depth and breadth are an important part of this definition, Teets noted. AFSPC is far from the only organization that carries out complex space activities.

The National Reconnaissance Office, which Teets oversees, carries out space research and development, acquisition, and some operations—all in one organizational unit. The Navy's space activities almost all involve operations, but even the Navy has ongoing space research and development activities. The Army has extensive space operational interests.

"My activity tries to synchronize those efforts in a way that we provide a Total Force that is capable of joint warfighting and using the terrific advantages we gain from our space efforts," said Teets.

Teets wants to make sure service graduate education efforts fit together. In particular he's leading an effort to look at the space curricula of the Air Force Institute of Technology at Wright-Patterson AFB, Ohio, and the Naval Postgraduate School in Monterey, Calif.

"We're starting to establish ... strong professional graduate education curriculum[s] at both schools that complement each other, and I think will start to really pay big dividends downstream," said Teets.

AFIT is science oriented. It is strong in such technical specialties as flight control analysis, space sciences, and so forth. The Naval Postgraduate School is more oriented toward the systems level of analysis.

Teets and a joint space oversight board are trying to make use of the two schools' capabilities so that students interested in a space career can choose either a space science track or a space systems track, whatever their branch of service.

"What we're trying to do is get some mix and match so that we get graduates of AFIT that are going to enjoy Navy careers in Navy space, and get graduates of the Naval Post-

graduate School that will be part of our Air Force," said Teets.

Faster Pace

In general the Defense Department has a strong need to make rapid progress in space cadre implementation, according to Teets. While the pace may have been frustrating in the past, it has accelerated in recent years. DOD has begun to implement the DOD Space Human Capital Resources Strategy.

"In a matter of a few more years," said Teets, "we will have a thorough, professional, well-established space cadre across DOD." It could number, by 2005, a total of 10,000 Air Force, Navy, Army, Marine Corps, and defense agency personnel.

The space cadre may not have to be large to improve US military capabilities. Neither space acquisition nor space operations are labor-intensive businesses.

"I think the number of people in the Air Force as well as the Navy and the Army [space] cadres is about right," said Teets.

The importance of space to military operations is certainly growing. According to Teets, new systems such as the space based radar will only accelerate that change.

In the future, US forces will continue to operate in remote places where space-based communications provide the only networking capability and where space reconnaissance can provide the best intelligence-gathering tool.

Adversaries increasingly recognize the advantages the US military gains from owning the high ground. That being the case, the Pentagon will have to be most diligent in its efforts to ensure space freedom of operation. That is likely to mean development of both defensive and offensive counterspace capability.

"As space becomes a bigger and more important part of our joint warfighting and our intelligence collection capability, I would see space people taking a stronger leadership role within our Air Force," said Teets. ■

Peter Grier, a Washington editor for the Christian Science Monitor, is a longtime defense correspondent and a contributing editor to Air Force Magazine. His most recent article, "The New Drawdown," appeared in the March issue.