

# Responding to the “Developing Aerospace Leaders” Initiative

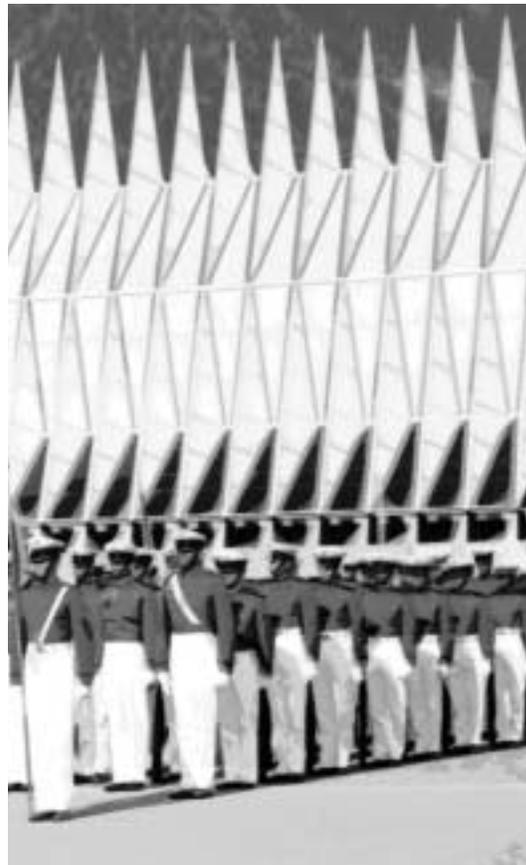
## A Master Attack Plan for Reforming Undergraduate Professional Development

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*Editorial Abstract: Developing twenty-first century aerospace leaders will begin in the traditional way, with precommissioning education and training. Effective education in the basics of aerospace power and military principles will be more crucial than ever. Colonels Drohan and Murray propose an integration of the commissioning sources, led by the Air Force Academy, to produce a curriculum that more strongly emphasizes aerospace-power strategy while maintaining each source’s unique character.*

**T**HE DEVELOPING AEROSPACE Leaders (DAL) initiative came about after senior Air Force leaders recognized that Air Force flag officers are not well prepared to assume senior leadership positions, which entail carrying out national security objectives in the twenty-first century.<sup>1</sup> To address this shortcoming, the DAL initiative calls for nothing less than a major revision of the process of officer development from cradle to grave. Professional development at the undergraduate level must be an integral part of this revision.

At the outset, it is important to note that the purpose of precommissioning professional development is not to produce the aerospace officer outright but to provide the foundation upon which aerospace competencies are built over a period of time. In what may be a career-long journey, the US Air Force Academy, Air Force Reserve Officer Training Corps (AFROTC), Officer Training School (OTS), and Air National Guard (ANG) Academy of Military Science are but the first steps. If pre-commissioning programs are to provide a foundation for developing aerospace leaders, each of these commissioning sources needs to develop a plan to focus on that common goal. They must develop a master attack plan—a



new paradigm for reforming undergraduate professional development.

This article first addresses why there is a need for the new paradigm. It then correlates those factors with the requirements stated in the DAL initiative, which is itself a response to these imperatives, and finally outlines the major elements of an attack plan—the linchpin of which is a three-tiered integrative process.

The first tier requires integration among each of the commissioning sources. Indeed, differences among the AFROTC, OTS, ANG Academy, and Air Force Academy programs provide added value to all. The key to success is to combine the relative strengths of each source rather than separately address weaknesses.

The second tier involves integration within each commissioning source, specifically between education and training. In the academic world, one often finds great debate over these two disciplines. There need not be. Both are important. Both need to work in harmony because the juncture between them is very gray. Too often, one finds the two developmental processes left undefined due to the assumption that course content determines the distinction between them. Therefore, the following working definitions of education and training allow for their similarities but acknowledge important differences:

*Education:* (a) developing intellectual capabilities based on broad principles or guidelines (b) to understand or explain (c) relatively ill-defined situations and problems.

*Training:* (a) engaging in disciplined practice according to specific principles or guidelines (b) to reach decisions or perform tasks (c) in more recognizable situations and problems.

The extent to which we train and/or educate is a matter of choice, and the education and training processes are inherently complementary, controllable by the individual instructor, and therefore worthy of integration. The third tier of integration requires each commissioning source to better integrate its individual

courses that comprise education and individual programs that comprise training.

The Air Force Academy is the bellwether in this threefold effort to better integrate each of the commissioning sources, their individual education and training processes, and the courses and programs within each of these processes. It alone possesses the concentration of expertise, manpower, and material resources. While the primary mission of the Academy is to graduate second lieutenants and, as a by-product, mid-level professionals from its staff and faculty, the Academy must take on the responsibility to set the pace for all officer development. This lead role was first prescribed during the initial phase of the DAL initiative.

That role, however, does not reject but builds upon the fact that each of the commissioning sources fills specific requirements in preparing young men and women to be professional officers. The sources should complement and supplement each other's efforts. The process of integration maximizes the relative strengths of each of these programs. The Air Force Academy is equipped to produce graduates with a broad military training experience and an equally diverse academic core that addresses all of the DAL competencies. ANG Academy, AFROTC, and OTS graduates, on the other hand, have fewer training opportunities but more time for in-depth inquiry into academic disciplines that enhance specific DAL competencies. Taken together, professional development at the undergraduate level lays a firm, integrated foundation upon which the DAL vision can be realized.

But why are the vision and the initiative necessary? The answer rests on a set of imperatives for change.

### Professional Context: Imperatives for Change

Numerous factors underlie the DAL initiative and demand change in the way we develop our institution's leaders. First, key transformations in the post-Cold War international environment impact Air Force roles and missions in the twenty-first century. Expanding

complexity; uncertainty; regional instability; and unrest from cultural, ethnic, and religious diversity all mean that newly commissioned officers cannot anticipate the threats they will likely face. They will need broad understanding of cultures, politics, economics, and developments in science and technology.

Second, the new security environment requires that leaders understand professional requirements in depth. Roles and missions are now more diverse and uncertain, demanding reform. We are currently in an era of obfuscated objectives, murky missions, and tampered target sets—and everyone expects aerospace power to be the panacea. Military forces increasingly receive taskings to take on non-combat roles but in the process often find themselves no less vulnerable. Survival will depend in no small part on the competence of aerospace leaders. Even the Air Force's very identity is a new leadership challenge, and both the Aerospace Integration Task Force and the Commission on Air and Space have explored alternative futures on the leadership horizon.

The third reason for reform is a perceived rupture in civil-military relations. Increasingly, civil-military experts point to an expanding chasm between the professional military and civilian society.<sup>2</sup> One can observe, for example, an absence of widespread military experience in government, especially in the US Congress. This is particularly problematic when the success of the new noncombat roles and missions of the military is dependent upon a closer working relationship with the civilian sector. In Operation Allied Force, for instance, substantial differences existed between the views of political leaders and the judgments of aerospace professionals with regard to what constituted justifiable targets.<sup>3</sup>

Furthermore, differences among alliance partners' strategic objectives complicated aerospace operations by denying the use of valuable resources in the fight. Graduates must be prepared to operate in these diverse coalitions as well as independently. Another manifestation of the civil-military rift is the divergence of political sentiment between the military and some civilian sectors.<sup>4</sup> This third

factor alone necessitates looking at better ways to explain the flexibility and limitations of aerospace power to those outside the profession by increasing opportunities for interaction between undergraduate military students and their civilian counterparts. Prior to commissioning, cadets need to explore civil-military issues fully so that they understand and accept the constitutional role of the military in American government and society.

Finally, our students must come to grips with the well-known technological explosion and the revolution it has created in military affairs. Weapons improvements; smarter satellites; lasers; and artificial-intelligence command, control, and communications all combine to produce unforeseen capabilities among aerospace, ground, and sea forces. And to accompany such capabilities come new vulnerabilities to challenge future leaders.

This demands a change in the way we educate and train aerospace professionals, a point recognized in *Air Force 2025*, which calls for a revolution in military education to correspond to the revolution in military affairs:

This paper demonstrates that a new military education and training architecture, supported by investments in key technology components, will produce a Brilliant Force capable of meeting the challenges of 2025. Engagement in non-traditional missions will increase, and operations will be joint as well as combined. The demand for highly skilled people will intensify, and the pace of technological change will increase. Thus we will need to produce brilliant warriors. To do so we need an agile and adaptive education and training system to meet the demands of a constantly changing, complex, external environment.<sup>5</sup>

The best place to start developing aerospace leaders is at the beginning—in precommissioning programs that will provide the right kind of professional foundation.

### Three-Tiered Paradigm: A Master Attack Plan

The Air Force Academy must take the lead in developing the three-tiered integrative

process that is at the heart of a new approach to undergraduate professional development. But if it is to take the lead in integrating each of the commissioning sources, it must first better integrate its own programs. Historically, the Academy has implemented programs separately, creating stovepiped execution and unfortunate gaps in understanding. Too often, education-oriented agencies regard training as something less than education, if not mindless indoctrination. Likewise, training-oriented offices sometimes suspect that academic pursuits are professionally irrelevant. Separate precommissioning training and education will no longer work because contemporary issues require both a broad intellectual understanding of complex problems and the decisive application of appropriate military force in support of national and coalition interests. This need to integrate training and education is particularly relevant to the Academy, which began boldly yet schizophrenically with an uneasy combination of diverse training and education goals. As the most entrenched precommissioning institution, with its own heritage, organizational biases, and bureaucratic barriers to reform, the Air Force Academy has a history of military education and training that provides a good case study for understanding the challenges of Tier 2 integration. In short, if the Academy is unable to better integrate its programs, the other commissioning sources never will.

***Integrating across Mission Areas within an Institution (Tier 2): Historical Challenges at the Air Force Academy***

On the one hand, the Academy emerged as a carbon copy of West Point's military and athletic-training programs—dominated by West Point graduates' traditional training emphasis on structured discipline and rote memorization of factoid-style knowledge. Today, the Academy still tends to implement military training as a "how-to" menu of guidelines and directives to complete specific tasks, although there is recent movement toward a broader training philosophy of leadership development in the Academy Training Philosophy, in-

stituted by the current commandant. Athletic training began with an unabashed commitment to National Collegiate Athletic Association Division I football. The idea that competing to win would build an ethos of maximum effort, perseverance, and team spirit led to an intramurals-for-all program and a robust physical education curriculum in the spirit of the 1919–22 West Point reforms led by Brig Gen Douglas MacArthur, superintendent at that time.

On the other hand, the Air Force Academy's early leaders initiated a clear departure from West Point's seminary-academy model of a totally prescribed curriculum and a daily recitational approach to learning.<sup>6</sup> This change led Academy programs toward more general curricula and greater choice for cadets—more fields of study, more opportunities for core substitutes, more variety in electives, and more academic majors.

Over time, the Academy has retained its dual personality of traditional training programs and a modern curriculum. But outside observers and new arrivals see an overloaded training and education structure that rather grudgingly produces incremental changes. Indeed, taken by themselves, modest changes made sense at the time and have yielded some first-rate individual programs. Examples of key incrementalism include the addition of summer military-training programs; more intercollegiate, intramural, and club sports; more academic departments and majors; expansion of the core curriculum; and the institution of the Center for Character Development.

**A Legacy of Nonintegrated Programs.** In 1954, just before legislation passed that established the Academy, Lt Gen Hubert R. Harmon (soon to be the Academy's first superintendent) testified that the distinctiveness of the Academy ought to ensure that its graduates would be "air-minded and thoroughly indoctrinated in all aspects of air operations."<sup>7</sup>

Due in part to the dominance of West Point graduates in key positions at the new service academy, however, the military-training system mirrored that of the traditional indoctrination

at West Point—a fourth-class versus upper-class system rather than a four-class system, a highly structured cadet schedule, attention to details, forced discipline, built-in pressure to stress cadets, drill and ceremonies, specified responsibilities and accountability, and so forth. The benefits of this indoctrination have been accepted partly because of its merits, partly through lack of proven alternatives, and partly due to the inertia of precedence—sometimes acknowledged as the “WHITLY [We had it tough last year] syndrome.”

The education program at the Academy, however, was markedly different from the norm. All Academy professors had graduate-level academic credentials—the only service academy faculty at the time that could make such a claim. The desire to create the best academic program in the nation led to the unprecedented achievement of gaining accreditation before the first class graduated. As a result, the early years produced not only a broader prescribed core than the other academies, but also a rapid increase in the number of semester hours required to graduate (129 in 1957; 146 in 1960). The addition of 50 hours of airmanship studies and physical education during the academic year effectively levied on cadets no fewer than 180 semester hours of academic, military, and athletic programs.<sup>8</sup>

Few people with actual military experience would dispute the value of both the training and education programs at the Air Force Academy. The contentious issue remains the extent to which these programs should be separated or integrated and the time allotted for each activity. Despite the desire to produce an Academy experience that builds “the whole person,” training and education processes at the Academy have been separate endeavors from the onset.<sup>9</sup> The effectiveness of each mission element has depended on the degree of harmony among the superintendent, dean, commandant, and—more recently—the director of athletics. This has resulted in periods marked by academic innovation and upgrades (McDermott reforms in the late 1950s to mid-1960s), followed by periods of tightened training. In

addition, the short duration of superintendent and commandant assignments to the Academy relative to most deans’ tenures has resulted in frequently changing policies and priorities between the academic and training elements.

Cadets and Academy graduates tend to refer to these buffeting policy changes as a pendulum that swings back and forth, rather than some sort of progressive model. Mission priorities competing for cadet time exacerbate the problem. In 1956 Col Robert F. McDermott (later dean) recognized the tendency to overschedule cadet time:

If you schedule a man’s activities six days a week and half of Sunday, you have reached the ultimate in discipline. You are producing the perfect follower. . . . Leaders develop from a system where a man has many opportunities to solve problems, make decisions, and assume responsibility for the decisions he makes. He has to have time to think, time to sit and time to reflect. . . . We have no right to isolate him mentally for four years, but we are doing just that by the simple device of not giving him enough time to pursue his own interests. If he takes the time, he does so at the risk of failure in one or more programs.<sup>10</sup>

**Past Frameworks.** How has the Academy attempted to reconcile competing time demands on cadets among separate programs? One view proposed in 1979 by John Lovell is that academies have tried to combine the liberal educational values of Athenian society with the authoritarian military ideals of Spartan society.<sup>11</sup> The tension between these two endpoints on a spectrum of ideals accounts for frequent changes in programmatic priorities at service academies. Lovell argues that the tension reflects the fact that service academies have not reconciled these opposed ideals (and opposed mission-oriented implementation bureaucracies); this results in a frustrating mediocrity in which one adequately achieves neither Athens nor Sparta.

The Academy’s official framework involves describing the academic and training programs as separate “pillars” of excellence (along with the athletic and character pillars) that somehow congeal in an individual cadet to produce an officer with outstanding potential. The

pillars represent the elements that support a cadet's professional foundation of officership.

An alternative perspective is based on the assumption of separate mission elements attempting to maximize their programs. Each mission element is loath to reduce its programmatic claim on cadet time out of fear that one or more of the other mission elements will take its place. One version of such a model depicts a compass with a cadet standing in the middle. Instead of pointing the cadet to a common objective, the four elements (academics, athletics, character development, and military training) located at the cardinal points of the compass schedule and pull the cadet toward different specific objectives in different directions.

In 1958 the Army commissioned a board to identify the key characteristics its officers needed to meet the challenges of the 1968–78 period. The Ewell Board recommended a broadened curriculum based on external developments: “The inroads of physical science and political science into the military realm demand military leaders who are well based in these areas and who have the intellectual curiosity, the initiative, and the quality of creative thinking which will enable them to expand their base of knowledge in a flexible manner, and apply it to ever-changing situations.”<sup>12</sup>

One finds elements of these various frameworks in the vision statements, mission statements, and objectives put forth by today's Air Force Academy mission elements. The Academy's strategic plan even refers to integration across mission elements in terms of character development, calling for “integrating character initiatives into all cadet programs.” Other than character development, unfortunately, the plan refers to integration only in terms of efforts within separate mission elements, such as integrating the core, elective, and major curricula.

However, a good example of what one can achieve in terms of cross-mission integration of academic and military-training programs is the creation of the summer program—Global Engagement. This initiative began when the commandant acted on an opportunity to

build upon two similar summer training and education programs. The commandant managed Operation Air Force (OAF), which sent many cadets to an Air Force base to experience current operations, and the Department of Civil Engineering managed a substitute program for OAF, Operation Air Force Civil Engineering, which sent civil engineering majors to an active duty base to practice combat support after field training at the Academy. Capitalizing on the civil engineering training area's facilities, the commandant developed a 10-day program called Global Engagement, in which all cadets would participate. Active, Guard, and Reserve duty mission-support officers deployed to the Academy to augment the instructor staff, teaching basic skills needed to run a bare-base operation.

Through Global Engagement, the commandant promoted training goals that prepared cadets for the Expeditionary Air Force they would enter upon graduation and supported educational goals in at least two academic areas. First, the Department of Civil Engineering incorporated a base-level war game in its core course for all third-class cadets and adjusted the content of its elective course in field engineering to mesh with the Global Engagement program. Second, the Education Group coordinated the content of its theater-level air-campaign war game (required of all second-class cadets) to flow with the Global Engagement and civil engineering scenarios. Due to the initiatives of the commandant and the Department of Civil Engineering, this program integrated training and educational goals instead of serving as only another stand-alone time commitment for cadets.

#### **Relevance to All Commissioning Sources.**

This example of successful integration, as well as the four factors for reform reviewed earlier, invites hard questions about the possibilities of integration and the relevance of current programs in all of the commissioning sources. The first three factors—uncertain threats, expanded military roles, and ruptured civil-military relations—require on-scene educational experiences in diverse international

conditions. Yet, only a handful of Academy cadets and almost no AFROTC, OTS, or ANG Academy cadets have the opportunity to experience the Expeditionary Air Force, obtain postings in US embassies, serve on International Military Evaluation Teams, or work with civilian governmental employees. A variety of academic courses in foreign-area studies could precede or follow such summer programs. Likewise, courses in acquisitions or operations research could be linked with summer assignments on the Air Staff or in budget or policy offices. Engineering and science courses fit well with weapons or battle laboratories. The fourth factor of technological change calls for new methods and programs such as virtual reality, information warfare, and space operations. It is time to consider accompanying space-operations training with flight training, realizing that the Wright brothers' innovation was spurned at the turn of the last century. Why shouldn't initial space training accompany the existing initial flight training? Partnerships with operational units could be built into course syllabi, enabling cadets in advanced courses to apply what they learn in the classroom to actual problems and real issues.

Existing programs, although useful to the last century, have only marginal relevance to the emerging security environment. For instance, what is the operational value of parachute training, rifle drills, and marching in formation for the aerospace officer, compared to flight or satellite skills, war gaming in an operations center, or even physical fitness? One may pose similar questions about the Academy's rigid curriculum, consisting of a core academic program so broad that many requirements are greater than those of majors in the top schools in the country. When faced with such alternatives, we tend to weigh the options in a zero-sum fashion and then add more programs rather than transform or replace sacred cows.

Without more integrated programs, it is possible that the banquet of separately pursued, excellent programs at each of the commissioning sources is choking the relevance

of the total experience of our cadets. In so doing, such programs fail to provide the education, training, and experiential base required for the core competencies set down in the DAL initiative. We need to integrate these excellent programs with a common vector toward what must become the fundamental purpose of professional development at the undergraduate level—producing officers to lead others in securing our nation's interests and values.

***Integrating within Mission Areas in an Institution  
(Tier 3): The Academy Experience***

The third tier of integration is in many respects the place where the overall process ought to begin. Before one can best integrate education and training processes across mission areas, one should understand the content of each and the ways in which the courses and programs that comprise them relate to one another. Instead, as the Global Engagement example suggests, Tier 2 integration has occurred first, because of somewhat random, common interests. The Department of Civil Engineering had an interest in teaching wartime basing-support skills, which coincided with the commandant's interest in a training program to prepare for the Expeditionary Air Force.

The third-tier effort examines individual education and training processes and disaggregates their content to determine what is being taught or trained and how that content relates to course or program objectives, DAL requirements, and the four sets of imperatives reviewed earlier. This effort does not target existing academic courses or training programs but the capabilities and competencies that these courses and programs develop. After one has identified these competencies, it is much easier to compare them with those identified by the DAL initiative and derived from the four sets of imperatives. One can then reaggregate the result of that comparison and assessment of competencies into new, perhaps interdisciplinary, courses and programs.

The disaggregation/reaggregation process effectively would be a comprehensive examination of the Academy's and the other commissioning sources' education and training programs. Taken seriously, it is no less than the analytical tearing down of academic fiefdoms, training rituals, and athletic recruitment practices for the purpose of rebuilding a curriculum and training program with a professional focus on aerospace power.

One instance of Tier 3 integration at the Academy occurred when the Departments of Law and Political Science realized they had been teaching two separate courses on space and that these courses had complementary content. They disaggregated the courses, assessed the capabilities and competencies addressed in each, reaggregated the results, and produced a single interdisciplinary course on space law and policy.

Another example occurred between the Education Group and the Training Group in a realignment of education and training processes. The Education Group transferred general military-training functions and publications to the Training Group, allowing the former to develop faculty expertise in aerospace power.<sup>13</sup> Training Group programs underwent review for relevance, an ongoing process. Recently, this resulted in the creation of Operation Air Force Space, a summer education and training program that will introduce cadets to space and missile operations.<sup>14</sup> These two modest examples demonstrate that disaggregating education and/or training courses and programs can provide a basis for accomplishing Tier 3 integration.

***Integrating across Institutions (Tier 1):  
Proposals Involving the Air Force Academy***

Integrating individual programs and courses within institutions produces a set of precedents—lessons that can become the basis for integrating the teaching of aerospace power across the commissioning sources. This first tier of integration will require greater interactions, meetings, and conferences among those sources.

DAL's universal competencies provide a basis for comparing existing curricula and programs against a standard. These competencies consist of several categories— aerospace operations, character, leadership, organization, technology, strategy, and perspective—that entail education and training programs. The task of developing and overseeing initiatives that integrate them across the commissioning sources must rest with a comprehensive oversight body. The recently created Commissioning Committee, composed of senior representatives from each of the commissioning sources, is such an organization. Empowered by their respective commanders, the committee members can enhance the level of undergraduate professional development and, in so doing, meet the DAL requirements. One should consider the following seven initiatives a first step:

1. Establish semester-long exchanges between AFROTC and Air Force Academy cadets, much like the existing service-academy exchanges during the junior year.
2. Create summer leadership opportunities for Air Force Academy cadets and interactions with OTS and ANG Academy cadets.
3. Continue and increase participation by AFROTC and OTS/ANG Academy cadets in Air Force Academy summer programs.
4. Arrange semester- and year-long faculty exchanges among the commissioning sources, including civilian as well as military faculty.
5. Use the many methodologies encompassing educational technology, such as distance learning and interactive teleconferencing between education and training courses and programs conducted by each of the commissioning sources; for example, a lesson from the multinational and joint-operations course at the Air Force Academy could

be teleconferenced to AFROTC, OTS, or ANG Academy classes.

6. Schedule frequent and routine interfaculty conferences and workshops; emphasize joint faculty development.
7. Develop joint courses and programs resulting from the individual integrative efforts within each of the four commissioning sources.

However, if the Commissioning Committee is to succeed with any of these initiatives, all commissioning sources would need to adopt an outward orientation toward the rest of the Air Force rather than isolationist perspectives embedded in relatively closed "schoolhouse" biospheres.

### An Executable Plan: Drafting Air Tasking Orders

The proposal offered here needs implementation guidelines. Specifically, it needs a set of organizing principles upon which to build the process and the organization. These principles include (1) top-down guidance and support from the institution's senior leadership, (2) unambiguously stated objectives that provide the criteria with which to evaluate each step of the process, (3) process and organization design flexibility to adjust to changing requirements and to conduct overall assessment, and, most importantly, (4) process and organization that cut across traditional, institutional staff and bureaucratic lines to incorporate the perspectives of all individuals and agencies directly responsible for realizing the institution's mission. The guidance of the Air Force chief of staff and the resulting DAL initiative, with associated objectives and requirements, meet the first two organizing principles. The following process and organization are designed to meet the third and fourth.

#### *An Executable Process*

**Step 1: Identify the Current Paradigm.** Prior to undertaking a comprehensive review,

any institution or organization must establish a baseline from which to evaluate change. For institutions of higher learning, this effort entails clarifying and explaining the existing approach and philosophy that they have taken in their education and training programs. It includes identifying and reviewing the institutions' founding documents, major tenets, assumptions, and organizing principles upon which the institutions and these programs are based.

**Step 2: Clarify Constraints/Parameters for Change.** Before initiating change, one must understand the existing constraints and parameters and the impact of changing them. Although it is possible to alter these parameters or attenuate the constraints, doing so can often conflict with the institution's founding principles identified in step 1.

**Step 3: Conduct Review.** One must carry out the actual comprehensive review of the institution's existing education and training programs and evaluate them in terms of the requirements derived from the strategic imperatives and the DAL initiative.

**Step 4: Approve Changes.** A higher-level authority must review and approve the recommended changes resulting from step 3 and create a work plan to implement them using the organization outlined below.

#### *An Executable Organization*

The structure or organization that executes the above process must adhere to the fourth organizing principle. As such, it must include a senior-level approval body and a midlevel steering committee to consolidate and assess recommendations developed at the lowest level by a series of working groups. At the Air Force Academy, this type of structure was developed to draft a new strategic vision and plan for charting the Academy's future. We propose the retention of that organization and the development of a similar one in each of the other commissioning sources—but modified appropriately to meet their unique structures and processes. Following approval by the senior-level approving authority, the Commissioning Committee would receive the output of these

organizations for assessment and ultimate implementation.

## Conclusion: Time for Reform

The time has come for a comprehensive review of undergraduate professional development; the Developing Aerospace Leaders initiative is the catalyst for the effort. More importantly, it provides the critical criteria with which to conduct that review. This article has suggested a master attack plan based upon a three-tiered integration framework. Its successful execution, however, must begin with the Air Force Academy, which must take the lead in actively integrating training and education programs.

### Notes

1. Maj Gen Charles Link, "The Developing Aerospace Leaders Initiative," presentation to the Commissioning Education Committee Conference, Maxwell AFB, Ala., 24 July 2000.

2. See Peter D. Feaver and Richard H. Kohn, "The Gap: Soldiers, Civilians, and Their Mutual Misunderstanding," *The National Interest*, Fall 2000, 29-37.

3. Political leaders were loath to target the state-run television station, political leaders' financial assets or other property, or any target where enemy forces could house captive noncombatants. Air Force leaders recommended an instantly comprehensive air campaign against a wide variety of targets. Air Force leaders were keen to avoid another Operation Rolling Thunder (Vietnam, 1965), in which an escalatory approach to targeting failed to induce North Vietnam to negotiate. As it turned out, North Atlantic Treaty Organization (NATO) air forces ran out of targets approved by the coalition of political leaders, an arrangement whereby any NATO member could veto a target. See Gen Michael Short, commander, Allied Air Forces, Southern Europe, presentation to Air Force Association Air Warfare Symposium, 25 February 2000, on-line, Internet, available from <http://www.aef.org/symposia/short200.html>.

4. See Eliot A. Cohen, "Why the Gap Matters," *The National Interest*, Fall 2000, 38-48.

5. Lt Gen Jay W. Kelley, *2025: Executive Summary* (Maxwell AFB, Ala.: Air University, 1996), 49.

6. This approach has been referred to as the Thayer method, named after the reformist Sylvanus Thayer, superintendent of West Point from 1817 to 1833. See Stephen E. Ambrose, *Duty, Honor, Country: A History of West Point*, Johns Hopkins paperbacks ed. (Baltimore: Johns Hopkins University Press, 1999), chaps. 4-5.

7. John P. Lovell, *Neither Athens Nor Sparta? The American Service Academies in Transition* (Bloomington: Indiana University Press, 1979), 62.

8. *Ibid.*, 74.

9. This separation of military and academic functions at service academies is a post-World War II phenomenon. Before West Point

Nothing is more fundamental to the profession of arms than developing its human resources across all commissioning sources. Improved integration would increase opportunities for AFROTC, OTS, and the ANG Academy, while potentially enriching the diversity of the Air Force Academy experience. In leading this effort, the Academy's senior leaders would do well to update the advice of the first superintendent concerning that institution's distinctiveness: that our graduates be aerospace-minded and thoroughly indoctrinated in all aspects of aerospace operations. By focusing on this core function of the Air Force Academy in terms of internal reform and as an external duty, we can boost development in all the commissioning sources of a relevantly trained and educated aerospace force—the ultimate DAL objective. □

was "modernized" after World War II, the Thayer model's institutional context was that of a seminary-academy, which combined professional purpose with intellectual method. Military and academic priorities were fused. The superintendent was also the head of the Army Corps of Engineers, and the Academy's purpose was to produce military engineers. For a brief time at the Air Force Academy (the first two graduating classes), some degree of fusion occurred, as all cadets who were medically qualified also earned navigator wings. Over time, military and academics (some would add athletics) became more separated as mission elements grew and became more specialized and distinct from one another.

10. Lovell, 74.

11. See Lovell's introductory chapter "The Paradox of Change," particularly page 10.

12. *Ibid.*, 110.

13. Training functions included military decorum, cadet-leadership development, and basic cadet-training orientation; publications included manuals on cadet military responsibilities, training knowledge, and Academy training philosophy. Developing faculty expertise in aerospace power requires a substantial, focused effort in military and aerospace theory, strategy, doctrine, operations, war gaming, and aviation and space simulators.

14. This proposal would send 10 cadets during each of the three summer training periods to visit a variety of operational space operations sites such as Peterson AFB, Colo. (US Space Command and Air Force Space Command); Schriever AFB, Colo. (Joint National Test Facility, Space Warfare Center, and space operations squadrons); Cheyenne Mountain, Colo. (North American Air Defense Command); Buckley AFB, Colo. (part of Air Force Space Command); Vandenberg AFB, Calif. (missile center, satellite range operations, tracking station); and Patrick AFB, Fla. (Cape Canaveral, Kennedy Space Center). Maj Russell Meyer, "Talking Paper on Operation Air Force Space" (Colorado Springs, Colo.: 34th Training Group, US Air Force Academy, 13 January 2000).