

The Ingenuity Gap

Officer Management for the 21st Century

A Report of the CSIS International Security Program

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Cover photo credits: Clockwise from upper left: U.S. Army 1st Lt. Kevin Jewell, right, talks to his sergeants to determine the best route during a patrol in Afghanistan, October 13, 2009 (U.S. Army photo by Staff Sgt. Andrew Smith); Brig. Gen. Dana H. Born, dean of faculty, awards Basic Airmanship Wings to Cadet 2nd Class Bradley Sapper at U.S. Air Force Academy, July 2009 (U.S. Air Force photo by Mike Kaplan); Marine Capt. Jeff Costa leads a 15-mile conditioning hike at the Basic School, Marine Corps Base Quantico (U.S. Marine photo by Lance Cpl. Travis J. Crewdson); Midshipmen 2nd Class Sarah Van Cott and Ryan Frebowitz, both enrolled in their school's ROTC programs, learn about shipboard navigation from Boatswain's Mate Seaman Michael Sturdevant, left, aboard the USS *Fort McHenry*, June 2009 (U.S. Navy photo by Mass Communication Specialist Seaman Ash Severe/Released).

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EXECUTIVE SUMMARY

As significant numbers of U.S. forces prepare to enter yet another year engaged in major military operations in Iraq and Afghanistan, a reconsideration of the officer corps might at first glance appear unusual. It is commonly said that wars make the best officers, and the experiences of the past eight years in particular have showcased the exceptional skill and capacity of U.S. military leaders. Indeed, their ability to adapt to conditions and circumstances for which they received little or no preparation is one of the most remarkable successes of the past few decades.

So why consider changes to officer management now? There are at least two motivations that underlie this reexamination. The first is that there may never be a return to “the old normal.” Although the current high rates of deployment are not sustainable at present levels without significant policy and resource adjustments that seem unlikely, broader geostrategic conditions suggest that U.S. forces are likely to be engaged in wide-ranging activities at some level for the foreseeable future. Deferring consideration of serious change in the hopes of a slower pace that may never come may only mean that precious time is lost and the strains on the officer corps continue to rise.

The second and perhaps more compelling reason is that, to paraphrase an old maxim, “time waits for no man.” An era of increasing change, unpredictability, and growing complexity is already upon us. The officer corps of tomorrow will be confronted with these realities. We should not merely hope that the necessary change will occur through deployments. Instead, the Department of Defense (DOD) must make a deliberate shift in how it seeks to shape future officers. The primary challenge is to change the current trend toward a growing gap in ingenuity, a trend in which the need for creative approaches grows and the systems we expect to foster and encourage those approaches become increasingly outdated and insufficient. This gap will only increase if our current practices persist.

The officer management system comprises the laws, policies, procedures, and practices that guide how officers enter service and are subsequently developed, promoted, and separated. The purpose of this study is to examine whether that system aligns with the demands officers are likely to face in the years ahead. The basic question is whether we can continue to count on success.

The fundamental nature of war remains unchanged, and there is much that the U.S. military confronts that is not unique in its history. Our country has seen, however, a definite shift in the challenges it faces on the battlefield. During the Cold War the U.S. military focused on preparing for a single monolithic threat. During the last two decades the U.S. military has engaged in a dizzying array of missions. These ranged from largely conventional battles in Operation Desert Storm, to humanitarian assistance missions in Haiti, to support civil authorities during Hurricane Katrina, to countering pirates off the coast of Africa. Today the U.S. military is engaged in complex, simultaneous operations in Iraq, Afghanistan, and the Horn of Africa; the missions are part counterterrorism, part counterinsurgency, and part stability and support activities. This diversity, while not unprecedented, has been relatively sudden in its onset and has taken place within a

compressed time period. As such, it has proven challenging culturally, materially, organizationally, and doctrinally.

Concurrently, the officers leading the contemporary force have bridged the gap from an era of temporary volunteers to one of career professionals, and from service dominance to jointness. In the process they have devised and ushered in new concepts, structures, and processes aimed at better preparing the force for the operational diversity they continue to face in the field.

The significance of these steps is even more profound given that the systems governing how the U.S. military acquires and develops officers are rooted in centuries-old traditions and have changed little despite major shifts in the external environment. If, as one project participant in the CSIS project noted, the performance of our officers has come despite the system that develops them,¹ can that system be modified to better conform to a future that is growing increasingly uncertain and complex?

If the United States expects its military officers to continue to excel, the future demands new approaches. The uncertainty, asymmetry, and complexity of military operations are not new, but the degree to which each of these features will dominate the future strategic, operational, and tactical environments is. This reality is due to the fact that the underlying trends are accelerating at unprecedented rates and show no sign of slowing. Thus, the hard problems of the past are becoming ever harder, the possibility for surprise is increasing, and we face, as one commentator recently observed, “an avalanche of ceaseless change.”²

This study identifies two specific implications of the future operating environment for the demands on U.S. officers. First, the responsibilities of junior officers will continue to expand beyond the bounds of their traditional foundational skill sets. Second, officers at all ranks will increasingly confront wicked or ill-structured problems,³ confounded by incomplete information and with such a vast array of implications that traditional decisionmaking models will no longer apply.

But beyond these particular concerns lies a more fundamental issue: the growing divergence between an increasingly dynamic future and an officer management system optimized for static conditions. It portends an instance of what futurist Thomas Homer-Dixon, writing about the challenges facing humanity such as meeting long-term energy needs, has termed the “ingenuity gap,” the growing gulf between the need for increasingly creative, new ideas and their likely supply.

Some have suggested that in the case of the U.S. officer corps the requisite ingenuity can be generated by increasing officers’ substantive expertise in certain functional or mission areas, for example, placing greater emphasis on counterinsurgency (COIN) or training foreign forces than on traditional conventional warfighting. Their argument is that the future will be dominated by COIN and stability and support operations, and thus we ought to increase specialization in these areas.

Such debates are important, particularly for institutions that are tradition bound and therefore may be reluctant to change. But such debates also obscure the more basic concern that finding the

1. GEN Jack Keane, USA (Ret), at CSIS discussion session, October 15, 2009.

2. Joshua Cooper Ramo, *Age of the Unthinkable: Why the New World Disorder Constantly Surprises Us and What We Can Do About It* (New York: Little, Brown and Company, 2009), p. 8.

3. The term “wicked” was coined by Horst Rittel and Melvin Webber, and it refers to those problems characterized by, among other things, boundlessness and uniqueness and that have no right or wrong answer.

right balance among skill sets or mission-specific expertise is increasingly unlikely as the world becomes more dynamic and less predictable. This study does not, therefore, focus on identifying a comprehensive list of competencies, knowledge, skills, or abilities, as the pertinence of such a list is becoming increasingly fleeting. Nor does it make judgments about the appropriate weight particular missions should be given in decisions about officer training or education. Instead, the true challenge for the officer management system is not to optimize itself for any given point along a spectrum of missions or functions but instead to be inherently flexible and adaptive enough to accommodate radical, unforeseen change without dramatic overhaul. Loosening the bounds on some aspects of officer development decreases the probability that necessary but unanticipated forms of ingenuity might be weeded out inadvertently or prematurely. This does not mean that order and discipline should be forsaken, only that a broader range of perspectives could be usefully brought to bear and tolerance for freer thinking increased.

The DOD and military services must enlarge the aperture on what is considered relevant experience and expertise if they wish to preclude the ingenuity gap. They must fundamentally shift the basis for promotion eligibility from a system focused on time (in service or in grade) to one predicated on competencies, with “competency” defined as a broad set of interrelated knowledge, skills, and abilities in a given area.⁴ Relaxing existing time constraints will allow for more varied experiences, resulting in a more robust and flexible officer corps. Although this will certainly increase the challenge of managing the officer corps, the advances in computing power since the current system was originally designed mean multiple tools are available to help alleviate such strains.

There is no question that U.S. officers have proven remarkably adaptive. This is especially true in the face of surprisingly diverse challenges that are more representative of the future than was ever anticipated in the past. The capabilities of the individuals who lead our military forces will always be the most important element of successful campaigns. Ensuring the best possible preparation for their professional challenges is among DOD’s most fundamental responsibilities.

DOD can take a number of steps to better align officer competencies, and more fundamentally the officer management system, with the demands of the future. To protect our current advantages, DOD should:

- Better prepare junior ground officers for broadening responsibilities by deliberately expanding their experience base prior to commissioning. This involves expanding the numbers and types of outside experiences currently available to cadets and midshipmen at the military service academies. It also requires extending those opportunities to other officer commissioning programs.
- Further enhance the inculcation of critical thinking skills across the officer corps by extending teaching environments beyond the schoolhouse and increasing efforts to develop “supporting” skill sets. Current educational programs aimed at fostering critical thinking should be extended to unit assignments as well, as experience plays a vital role in enhancing learning. Greater effort should also be made to develop supporting skill sets. Competencies generally thought of as distinct from critical or advanced thinking such as high levels of self-awareness and moral development can in fact play a major role in conceptual expertise. The services should there-

4. Our use of the word competency is distinct from judgments about competence in any given area; that is, an officer can be deficient, proficient, or expert in any given competency or competencies.

fore focus more attention on these related skill sets, to include more robust feedback about individual strengths and weaknesses throughout an officer's career.

- Increase available information about the competencies current officers already possess. DOD'S understanding of what officers already bring to the table is limited, and it should be enhanced by increasing the sharing of data already collected and by collecting additional information about officers' existing knowledge, skills, and abilities.
- Most importantly, increase the flexibility of the current officer management system. First, shift the basis of eligibility for advancement from time to competencies in order to allow for the development of an officer corps with a wider base of experience and expertise. Second, identify targeted modifications to current law aimed at easing the movement of officers in and out of the Active Component force, both from the Reserve Components and through increased use of direct commissions.

A competency-based system would allow for more varied career paths, as officers would be relieved of the requirement to meet promotion "gates" within tightly constrained timelines. Acknowledging that time has become an increasingly unreliable indicator of experience and development, the services would specify broad sets of knowledge, skills, and abilities commensurate with the responsibilities of each rank in order to create the basic framework of a competency-based system. Officers would then indicate when they felt they had demonstrated the desired competencies and wished to be considered for promotion. Direct competency measures such as tests that indicate levels of creativity and communications skills ideally would contribute to judgments about assignments and development, but if and until adequate direct measures are implemented, output measures such as schools and assignments can be used as an imperfect proxy.

American officers are the bedrock of military success. They face a whirlwind of change that is picking up speed, yet their preparation is dictated by a system based on stability and predictability that, if they ever existed, certainly do not exist today. Others have identified many of the same problems and have offered some of the same solutions, explored in much greater depth than we were able to accomplish here. Yet strikingly few changes have been made. This reluctance—primarily cultural and institutional—cannot persist. Failing to adapt the officer management system to better align with the future will put U.S. officers at a growing disadvantage, placing more and more of a burden upon them as individuals to overcome a bureaucracy that ideally would be dedicated to supporting their success. The ingenuity gap is real and growing, and our officers are caught in it. DOD should immediately implement changes to officer management to close this gap.

1

INTRODUCTION

This study was initially conceived as an examination of whether the demands of current operations suggested a need for a different kind of officer in the future. Amid debates about the nature of future military operations, the logical question has frequently arisen about whether U.S. officers are best postured to meet those challenges. Many have suggested, for example, that officers will have less need for traditional conventional warfighting skills and that greater emphasis should be placed on preparing them for counterinsurgency and other forms of irregular warfare. As the CSIS study team began to explore the wide range of projections about future operations,¹ we concluded that focusing on whether shifts should be made between specific groups or areas of knowledge, skills, and abilities (competencies) associated with projected mission types would fail to address the real challenges of tomorrow. Our survey of the future suggests that its most profound characteristics are unpredictability and complexity themselves, rather than the specific forms these might take at any particular point in time. We therefore focused our analysis on the broader question of how the officer management system as a whole—defined as the set of laws, policies, and practices that governs officers’ careers—might be best aligned to accommodate constant change, instead of on specific mission types or skill sets that might be projected to dominate within any given period of time.

Assessing the officer management system against the demands of the future is just one of many lenses through which the continued validity of the system can be viewed. Others include its affordability, efficiency (whether the system extracts the full value from its investments), competitiveness (attracting and retaining the highest-quality officers), and how well it supports particular mission areas or specialties of concern such as civil affairs or strategic communications. All of these perspectives are equally valid objectives against which the system as a whole can be assessed, and many of the analyses that originated from a different conceptual starting point have arrived at similar conclusions. This study aims to be a useful addition to the voluminous and growing library of analyses, emphasizing the importance of addressing the growing gap in ingenuity before it results in future failures.

The amount of scholarship, reflection, and formal documentation on officer management and development is prodigious. Defining meaningful conceptual boundaries within which to focus analysis is therefore challenging. Feasibility constraints forced the CSIS team to make a number of decisions about the study’s scope although the work we have done to date should provide a useful foundation for subsequent analyses.

First, this analysis addresses Active Component officers only, although Reserve Component officers and their Active Component counterparts face an identical future. In many respects

1. The primary members of the team were Maren Leed, Nathan Freier, P. T. Henry, LtCol Rob Scott, COL Jeffrey Vuono, CAPT John Griffin, Becca Smith, David Sokolow, Mahrukh Hasan, and Nate Tavel.

Reserve Component officer management and development is even more challenging than for the Active Component, particularly given the typical part-time nature of Reservists' service, how they advance, and other unique features of Reserve Component service. Treating that crucial component of our military with the attention and depth of thought it deserves unfortunately exceeded the realm of the possible during this effort.

Second, the study is aimed at officers below flag and general officer ranks (that is, O1–O6). This decision had at least three rationales: First, these officers represent the overwhelming majority of the officer corps, and because of the closed nature of the system they present the greatest opportunities for realizing the effects of any proposed changes. Second, flag and general officer management has been the subject of a significant amount of analysis already. Third, flag and general officer populations are small and are essentially managed on an individual basis; the impact of “the system” is much reduced after these officers achieve senior ranks.

Third, our analysis did not focus on highly specialized branches such as medical and legal officers, foreign area officers, special operations officers, or other very technical functions. Most of these groups are presented with specialty-unique challenges and opportunities, and we therefore decided to concentrate our inquiry on the bulk of the officer population. In fact, the primary focus of our study was limited even further to combat-related branches and specialties, that is, the combat arms branches in the Army and Marine Corps, unrestricted line officers in the Navy, and pilots and aircrews in the Air Force. While most if not all of the study recommendations apply to officers in supporting functions as well, the team did not explicitly address each of these groups separately.

Finally, the primary objective of the analysis was to better understand how the officer management system in particular enables or constrains officer development. The services have two primary mechanisms for fostering officer development: assignments, either to units or to formal educational venues; and training, or purposeful repetition in a controlled environment of task-specific skills. For the most part, however, the officer management system relates most directly to assignments, while training occurs within those assignments. Therefore, the study pays scant direct attention to training per se. This is not to suggest that training cannot play a significant and growing role in officer development, including in areas discussed in depth below. Indeed, major advances are being made in training aids in such areas as enhanced adaptability and improved critical thinking skills. Having said that, the study team's understanding of the scientific literature is that pervasive and persistent developmental change in adults comes principally through long-term exposure and deliberate practice, which usually exceeds the bounds of most training tools. For U.S. officers, that experience occurs mostly during assignments, the training content of which varies widely. Thus, while training plays a critical supporting role in enabling development, it cannot fully overcome shortcomings that result from assignment patterns.

Areas for Further Inquiry

Going forward, the study team believes that this analysis could and should be extended to address some of the populations that were not a direct focus of this effort, especially in the case of Reserve Component officers. The Marine Corps is also sponsoring a similar effort to examine the impacts of environmental changes on noncommissioned officer (NCO) responsibilities. Such an analysis would likely be useful at least for the Army (if not the other services) as well, given the importance of NCOs' operational and leadership roles. Finally, some of the broad recommendations to enhance the flexibility of officer career patterns could be explored in greater depth, specifically those

related to the types or numbers of officers who might be brought in under direct commissioning authorities and the broad use of authorities aimed at discontinuous service.

Study Methodology

The CSIS study team incorporated four primary sources of information into its analysis: an extensive review of the literature, expert workshops, unit visits, and a series of in-depth interviews. The literature review included almost 300 official government documents, books, theses, articles, and monographs; the full list is included in the bibliography. CSIS also hosted two roundtable discussions, one in May 2009 and one in September 2009; attendees are listed in appendix A and appendix B. The May roundtable included representatives of the Joint Staff, the services, the Office of the Secretary of Defense (OSD), and congressional staff, and it focused on varying institutional views of the future environment and the implications for officer management. The CSIS study team presented some of its initial findings at the September roundtable, which included a range of past and present Department of Defense (DOD) representatives as well as current and former congressional staff.

Members of the study team also visited selected units with responsibility for varying aspects of officer management and leader development, to include numerous elements of Marine Corps Combat Development Command at Quantico (for example, Officer Candidate School, Marine Corps University, the Center for Advanced Operational Culture Learned, and the directors of Training, and Training and Education) and Army Training and Development Command (TRADOC), both at Fort Monroe, VA, and Ft. Leavenworth, KS (including the Center for Army Leadership, the Army Capabilities Integration Center, and the University of Foreign Military and Cultural Studies). Time constraints kept us from visiting many other units and centers that would have been useful to this effort. The team conducted interviews on each of these visits, frequently with the commanders, their senior staff, or both. We conducted more than 60 additional interviews with other officers, including numerous combatant commanders or their deputies, one service chief, two vice chiefs, and multiple more junior officers. A list can be found in appendix C. Some were serving in official positions of responsibility over aspects of officer management or development, while others' views were solicited purely for their personal perspectives on and experience with the officer management system.

Finally, prior to writing the final report, the CSIS study team held a discussion session, chaired by CSIS President and CEO Dr. John J. Hamre, on its draft findings and recommendations with nine former senior military and civilian defense officials. Attendees included Mr. Steve Cortese, ADM Edmund Giambastiani (USN, Ret.), GEN Jack Keane (USA, Ret.), Gen. Robert Magnus (USMC, Ret.), Gen. Edward "Shy" Meyer (USA, Ret.), LTG David Ohle (USA, Ret.), Dr. Nadia Schadlow, GEN Peter Schoomaker (USA, Ret.), and the Honorable G. Kim Wincup. This meeting provided an opportunity for experts outside of CSIS to offer feedback on the study's core conclusions and recommendations.

In the three chapters following this introduction, chapter 2 describes, as background, the basic contours of the current officer management system. Chapter 3 surveys what changes in the external environment imply for future military operations and highlights three specific implications for the officer corps. The final chapter makes a number of specific recommendations aimed at ensuring a continued strong foundation for U.S. officers into the future.

2

THE CURRENT OFFICER MANAGEMENT SYSTEM

An examination of the suitability of the officer management system for the long term necessitates some background information on how that system is currently structured. The term “officer management” is sometimes used to refer specifically to those components of the system that have to do with overall numbers or with the stocks and flows of officers coming into service, being assigned to various positions, and then leaving the system through either separation or retirement. The term as used here is intended more broadly to include the developmental or content aspects as well, or how officers spend their time and are prepared for positions of increasing responsibility. The first section of this chapter lays out the basic features of the officer management system as they stand today, the second provides an overview of resulting “idealized” officer careers, and the third discusses some of the unanticipated realities and informal practices that also have significant effects on officer careers.

Legal and Policy Framework

The system in which U.S. officers are accessed, advanced, and separated is shaped by laws, policies, and practices governed by multiple stakeholders. The basic parameters are outlined in law and policy set by Congress and the OSD. Within that framework the services set additional policies, some of which are common but many of which vary on the basis of differing missions and operational concepts.

The officer management system has two major components: overall numbers and structure, and “content,” that is, how officers spend their time once they are in the system. Most of the statutory elements of the system address the first set of issues (the numbers and the types of officers), while policy (both DOD-wide and service-directed) has a much more significant impact on the second.

Two features of the system in particular have profound effects on officer development. First, the law establishes the officer corps as a closed labor market, meaning that all officers at more senior grades must be drawn from lower grades and cannot be brought in from outside the system at any but the most junior levels.² Second, eligibility for advancement through the system is primarily based on time: the law sets minimum amounts of time that officers must spend at each grade through O7,³ and DOD policy further specifies the timelines upon which officers should be considered for promotion. These timelines ultimately set the parameters for the “primary zone” in which officers must be considered for promotion on the basis of either overall seniority or

2. This is true with very limited exceptions, for example, some medical and legal officers can be “hired in” to the officer corps at higher than initial ranks.

3. The minimum requirements are 18 months for O1, two years for O2, three years for O3–O5, and one year for O6 and O7. See Sec. 619, Title 10, U.S. Code.

year group (the year in which a given cohort of officers entered service). Title 10 of the U.S. Code further mandates that, if an officer is not initially selected for promotion, he or she can be considered “above the zone” once more. If the officer is “twice failed for selection,” he or she must be separated.⁴

The law also sets a fixed number of field grade (O4–O6) officers, although the number and percentage of total officers for each service varies. Because those officers must be selected from the grades below, these limits essentially determine the numbers of O1–O3s as well, although these numbers differ somewhat across services and specialties depending on expected rates of separation, both voluntary and involuntary, and promotion rates at each grade.

Overall, then, law and policy set requirements that determine how many officers are in the system, the rate at which they move through it, and how they leave service. Within that basic set of parameters the services have the authority to establish policies about how officers spend their time at each grade, with one significant exception. The Goldwater-Nichols Act (GNA) of 1986 required officers wishing to remain eligible for promotion to general or flag officer to complete a combination of joint educational experiences and assignments, as is discussed more fully below. Outside of joint experiences, the services establish policies and incentives that affect the types and length of officer assignments at each grade as well as the criteria for advancement to the next grade.

Developmental Results of the Officer Management System

The system described above, as it is currently implemented, generates a set of officers who have a strikingly common set of assignments, particularly once they reach field grade ranks.⁵ The bulk of these experiences occurs either in unit assignments or at various schools, although development also occurs through training (that is, task-specific practice), which can occur as an assignment (for example, flight training school) or as an event during a unit assignment (for example, participation in a field exercise). Although there are key differences in the career paths between various components of the force (combat and support specialties, for example), a quick overview of typical career patterns for officers in general warfighting specialties illustrates that, in theory and general practice, a basic developmental template holds true for a majority of officers as they advance.

Accessions and Precommissioning

Almost all officers enter service from one of three sources: a military academy (the U.S. Military Academy [USMA], U.S. Naval Academy [USNA], or U.S. Air Force Academy [USAFA]); Reserve Officer Training Corps (ROTC) programs; or Officer Candidate/Training School (OCS or, for the Air Force, OTS) programs. Eligibility is based on U.S. citizenship, meeting physical fitness and health standards, and either completion or projected completion of a bachelor’s degree.

4. This set of provisions is often referred to as “up or out”—either an officer moves up in the system or the officer is removed from it.

5. The system can generally be characterized as more tolerant of differences across specialties (which the services can manage by establishing separate competitive categories) than it is of differences across services, as they must follow identical promotion and separation timelines despite widely varying missions and operating concepts.

The Army and Air Force draw their officers from the three sources at about the same rates. In fiscal year 2007 (FY07), for example, the service academies supplied 19 percent of incoming Army officers and 24 percent of Air Force officers. ROTC programs supplied 48 percent and 52 percent, respectively, of Army and Air Force officers; and OCS and OTS supplied the remaining 33 and 24 percent. The Navy accesses a larger proportion of its officers from the Naval Academy compared with ROTC (each supplied 36 percent of incoming officers in FY07), with the remaining 28 percent drawn from OCS. The Marine Corps differs substantially from the other services in that the majority (65 percent in FY07) of new officers comes through OCS. The remainder comes through enlisted-to-officer programs, ROTC, and the Naval Academy (in FY07, 11 percent, 12 percent, and 12 percent, respectively).⁶

In the past, the Marine Corps and the Navy tended to rely on OCS programs to address fluctuations in officer demand, while the Air Force and Army used ROTC. In recent years, however, the Army has turned increasingly to OCS as a commissioning source. Two of the potential drawbacks of this approach are that it diverts expertise that might otherwise feed the NCO corps and that it shortens the probable length of an officer's career. This is because the military retirement system is one of "cliff vesting" in which an officer receives no retirement benefit until 20 years of service; reaching that 20-year point occurs much earlier in an officer's career if there is also prior enlisted service.

Some of the differences in retention patterns and other behaviors among different commissioning sources are also due to variations in the content of their precommissioning training and education. Service academy graduates receive the highest levels of military training and explicit leadership preparation in addition to their academic degrees. All academies offer bachelor of science degrees regardless of major, although the degree to which social science coursework is integrated into the curricula varies. Approximately half of all service academy students major in engineering, mathematics, and sciences.⁷

Not surprisingly given their overall mission and culture, the technical emphasis of the Air Force and Navy is also reflected in how they award ROTC scholarships. More than half of all Air Force ROTC scholarships are awarded to cadets pursuing degrees in science and engineering; in the Navy approximately 85 percent of scholarships are awarded to midshipmen pursuing technical degrees (the remaining 15 percent go to those concentrating in regional and language studies). In contrast with the Air Force and Navy, the Army does not direct ROTC cadets' degrees.⁸ None of the services directs majors for OCS candidates (although the Air Force does take them into consideration as part of the application process); the school itself focuses primarily on military leadership skills.

6. Data were supplied by Army Human Resources Command, the U.S. Air Force Personnel Center, HQ USMC Manpower and Reserve Affairs, and USN Chief of Naval Personnel.

7. "Curriculum Briefing," U.S. Military Academy, July 22, 2004, www.dean.usma.edu/curriculum/CurriculumBriefing_files/frame.htm accessed; Michael Moskowitz, David Rodney, and Kletus Lawler, *Data Analysis for a Navy Education Strategy* (Alexandria, VA: Center for Naval Analyses, 2008); "Fact Sheet," U.S. Air Force Academy, 2008, www.usafa.af.mil/superintendent/pa/factsheets/quick.htm.

8. "Fact Sheet," U.S. Air Force Reserve Officer Training Corps, 2007, www.af.mil/information/factsheets/factsheet.asp?id=152; "Scholarship Selection Criteria," U.S. Navy ROTC, 2009, https://www.nrotc.navy.mil/scholarship_criteria.aspx; "College Student ROTC FAQ Sheet," U.S. Army, ROTC, 2009, www.goarmy.com/rotc/college_faq.jsp#faq07.

Company Grade Officers (O1-O3)

As a general rule, officers' initial years in service (especially approximately the first four years as O1s and O2s) are spent developing proficiency in a given specialty, platform, or weapons system. For example, Army and Marine officers specialize in one of a number of basic branches like infantry, armor, or field artillery; all services have pilots who specialize in one or more specific helicopters and in various models of fixed-wing aircraft; and in the Navy unrestricted line officers join the surface ship (for example, destroyer), submarine, or aviation communities. For the Navy and Air Force, this in-depth and focused technical development continues into the grade of captain, whereas Army and Marine Corps officers, especially in combat arms specialties, tend to begin broadening their focus at an earlier point in their careers. This is in large part due to differing operating paradigms. Navy and Air Force operations focus on the coordination of platforms and tend to be more technical in nature. Army and Marine Corps operations, in contrast, are more diverse, people-centric, and usually incorporate combined arms approaches at lower echelons. These service differences persist throughout officers' careers, but they manifest themselves most acutely at company-grade levels.

Upon receiving their commissions, officers become O1s—second lieutenants or, in the Navy, ensigns. Typical officers spend much of their time as an O1 either in skill-specific schools or in the operating forces at the tactical level practicing and developing these skills. In the Army, officers immediately attend their basic operational specialty schools (the length of which varies by branch); these may be followed by additional training such as ranger or airborne schools. During their remaining time as O1s, Army officers fill tactical-level leadership positions at the platoon and company levels as well as junior staff positions at the battalion level. In the Marine Corps, all second lieutenants attend The Basic School (TBS) for six months followed by additional training in their specific branch (again, length varies by specialty). After completing this training, they go on to serve as platoon commanders or, in some cases, as company or battery executive officers. In the Air Force, O1s in the pilot and aircrew communities attend flight school and weapons systems qualification training. In the Navy, depending on their community (air, ship, or submarine), ensigns either attend skill-specific training or (for surface warfare officers) are assigned to their initial ship tours.

After approximately two years of service, officers are promoted to O2 (first lieutenant or, in the Navy, lieutenant junior grade). In the Army and Marine Corps, O2s continue to serve in the same tactical leadership and junior staff positions highlighted above. O2s in the Air Force and Navy continue to hone their technical skills within their respective communities. Air Force O2s report to their primary flying assignments, serving as wingmen, copilots, or navigators. Navy lieutenant junior grades serve as division officers on surface ships and submarines or continue their flight training.

After promotion to O3 (captain or lieutenant) at about four years of service, all officers attend some type of formal schooling, although its focus and when it occurs differ by service. The Army's Captain's Career Course (CCC), for example, is taught by the various branch schoolhouses and is designed to impart key branch-specific and staff skills. The CCC is intended for junior captains who have not yet commanded a company or battery (such a command assignment usually occurs within one or two years of promotion to O3). By contrast, the Marine Corps' Career Level School (CLS) has a common curriculum across all branches and usually occurs one to two years (that is, one assignment) later in an officer's career than does the CCC. Generally, CLS spends proportion-

ally less time on branch-specific skills, instead aiming to build a broad conceptual and intellectual foundation for future positions. After completing CLS, Marines return to the operating forces to serve as company or battery commanders or battalion staff officers.

Similar to the Marine Corps, the Air Force's Squadron Officer School (SOS) emphasizes the development of officers' skills outside of their basic branch and usually occurs later during the time in grade for O3s. However, Air Force captains' typical follow-on assignments revert to a platform focus, with rated O3s returning to flying positions. The Navy does not have a formalized mid-career professional military education (PME) program, but most lieutenants obtain a master's degree during shore tours, many from the Naval Postgraduate School. Assignments at the O3 level for Navy officers vary: aviators tend to stay within flying units or serve as instructors whereas officers in other communities serve in staff and recruiting positions.

Field Grade Officers (O4-O6)

As officers across the services advance into field grade ranks, their career paths become increasingly similar. Officers rotate in and out of assignments in the operational forces and in the service and joint higher headquarters staffs, and they attend professional military or other educational programs. During this period, officers begin the process of fulfilling the requirements set forth in the 1986 GNA to qualify as joint specialty officers (JSOs), which requires successful completion of joint professional military education (JPME) programs and at least one qualifying joint duty assignment. They also screen for O5- and O6-level commands. Although the timing of these three core activities (staff assignments, JSO qualification and education, and command) varies from service to service, the basic trajectory of officers' careers is comparable. Officers begin to spend much less of their time within their particular specialty or branch as well as inside their parent service.

Officers are promoted to O4 (major or lieutenant commander) at approximately 10 years of service. Officers at the O4 rank attend some intermediate-level schooling at this grade to complete JPME Phase I requirements, and some may also attend civilian schools (full time or on their own time) to obtain graduate degrees. Intermediate PME programs focus on preparing officers for joint, interagency, and multinational environments as field grade commanders and staff officers. They also represent the primary transition from tactical- to operational-level thinking and planning.

In the Army, officers ideally complete an intermediate level education (ILE) program at the Command and General Staff College (either in residence or remotely) or another service's equivalent program shortly after promotion to major. After ILE, Army officers serve as executive officers or operation officers at the battalion level and, later, at the brigade or division level, before serving on Combatant Command, Army, or Joint Staff. In the Marine Corps, the timing of intermediate level school (ILS) varies more than in the Army. At the time of their promotion to major, most Marine officers are in the operating forces serving as a company or battery commander or battalion staff officer. Between their 11th and 15th years of service, Marine majors, if selected by a screening board, attend ILS at USMC Command and Staff College or an equivalent service school. While not attending ILS, Marine majors are assigned to work on a Marine or Joint staff before they return to the operating forces to serve as either a battalion executive or operations officer.

The Navy does not have a formal intermediate PME program, but typical unrestricted line officers (that is, those eligible to command units, ships, or squadrons) attend a graduate program of some sort. These vary not only in timing but also in content. In the Air Force, promotion to major

frequently presents the first opportunity for pilots to serve in higher headquarters staffs after they fulfill minimum flying training requirements. The Air Force focuses its resident intermediate developmental education (IDE) programs on its top performers; most others complete IDE virtually or through correspondence courses. During or after completing IDE, majors usually serve in OSD, Joint, or Air staff positions.

At approximately 15 years of service, O4s are considered for promotion to O5 (lieutenant colonel or commander). As O5s, officers' career paths across the services begin to converge to an even greater extent. Officers at the rank of O5 who are in combat specialties compete for commands at the battalion, squadron, or ship levels. Toward the end of their time in grade as an O5 or shortly after selection for O6, they often continue their professional military education by attending a senior service college or completing a fellowship program (required to fulfill JPME II requirements). These schools emphasize operational- to strategic-level thinking and planning. Between these assignments, officers rotate in and out of staff positions on either service or joint staffs.

Selection to O6 (colonel or captain) usually occurs between 20 and 22 years of service. Officers who are O6s compete for commands of brigades, regiments, wings, and larger ships or multiple ship formations. They also seek to complete any remaining requirements for JSO designation, or serve on higher-level service and joint staffs, or both.

Other Factors

The system described above represents the ideal or steady-state outcomes for officer accession and advancement. It is no surprise that a number of additional factors affect the application of the theoretical guidelines once put into practice. One obvious disruption to traditional assignment and promotion patterns during the past eight years has been the extremely high operational tempo, especially for ground forces.

The impact has been greatest on the Army: for officers still on active duty as of July 2009, 73 percent of company-grade officers and 83 percent of field-grade officers were either pending deployment or had spent at least two months deployed in the previous five years.⁹ The sea services (Navy and Marine Corps) have long-established policies and practices designed to accommodate routine deployments. For the most part, the Marine Corps has been able to retain its routine deployment length and patterns and has been able to rely on policies already in place that are generally consistent with the operational demands the Marine Corps has faced. Although both the Navy and Air Force have been called on to provide individual augmentees in support of operations in both Iraq and Afghanistan,¹⁰ the scale of that demand relative to their overall officer populations has not been so great that it has caused significant disruption to their personnel systems. Army personnel and rotation policies, in contrast, were not designed to incorporate large scale, long-duration deployments for either units or individuals over extended periods of time. Supporting those deployments has caused major disruptions to many traditional Army assignment patterns.

9. "Active Component Stress on the Force" (Alexandria, VA: U.S. Army, Deputy Chief of Staff for Operations, Training and Analysis Division, July 2009).

10. As of June 2009, the Navy had about 13,000 personnel (both officers and enlisted) deployed; see Senate Armed Services Committee, *The Department of the Navy in Review of the Defense Authorization Request for Fiscal Year 2010 and the Future Years Defense Program*, Hearing, 111th Cong., 1st sess., June 4, 2009. As of October 2009, the Air Force had 8,138 individual augmentees (again, both officer and enlisted) deployed, according to Air Force officials in private correspondence with the author, December 3, 2009.

Senior Army leaders have made and continue to make decisions about how many officers should be permitted to defer or forgo attendance at key schools, for example, and whether officers in key billets should be extended beyond normal tour lengths to preserve unit integrity for deployments. Although data indicate that some of these problems are not as great in the aggregate as anecdotes might suggest, widespread extensions of officers in battalion command positions, for example, have had the effect of increasing those officers' depth of experience in that position at the expense of others who might otherwise have rotated into the command position but, because those positions are limited, must now serve elsewhere. Assessing the overall impact of deployments on career patterns was well beyond the scope of this effort, but the fundamental point is that the idealized career progression described earlier is not likely to be as true for officers who have served during the last 10 years as it was for those serving in similar positions 10 years prior.

The other set of influences that affects how the system is actually applied in practice is cultural. All of the services have assignments that are perceived as more or less valuable or meaningful in an officer's career than are others. Messages about that value are delivered explicitly (through senior leader statements and official documents) and implicitly (mostly through selection for promotion).

In addition, although it is true that most senior officers have followed the basic career paths described above, they tend to have also spent at least some time engaged in nontraditional activities. This is because the services, like many organizations, have informal filters aimed at identifying and cultivating officers who are perceived to be the highest performers or have the greatest potential. Signals of an officer's status as a so-called fast burner include high class rank, selection for positions such as aides to senior officers, and selection for resident (compared with nonresident) attendance at certain schools. High-potential officers are frequently rotated through assignments more quickly than is the norm, allowing for either multiple key assignments or the time to pursue graduate education or other nontraditional activities. Thus the system is in fact more flexible than a description of the formal foundations might suggest.

And yet the informal nature of the filters aimed at identifying fast burners (and thus the potential to have a more varied and likely more successful career) is potentially problematic. Many of the most salient signals in the process rely on catching the attention and earning the respect of a more senior officer who has sufficient institutional influence to shape future assignments and opportunities. Exposure to the right senior officers is at least to some degree a matter of chance.

Further, the relative influence of more senior officers is not necessarily related to those officers' abilities to anticipate the long-term interests of the service and the military as a whole. The vision to appreciate properly the future demands and challenges is even rarer when one considers how different a future the U.S. military faces. Senior officers, like everyone else, are heavily influenced by their own experiences, and these experiences could be limiting to the extent that they result in a bias to favor officers who resemble themselves.

Informal influence and networks are a fact of professional advancement not just in the military but in all fields. The issue for the services is whether they might explicitly complement or modify those informal processes with practices aimed at identifying the best future officers or avoiding favoring those whose potential is in fact much less than was expected. This is complicated by the fact that potential is a relative concept, one that relates to the set of demands and challenges at hand. These demands and challenges are changing significantly, as the next chapter describes in more depth.

3

OPERATING ENVIRONMENT OF THE
FUTURE AND ITS IMPLICATIONS FOR
OFFICERS

Even after accounting for deployments and informal practices, most officers progress along what is basically a common trajectory and therefore accumulate a relatively homogeneous base of experiences. To some degree this is necessary and desirable. Maintaining cultural integrity, a necessary priority for military forces that ask their members to make extreme sacrifices (up to and including voluntary loss of life), is at least one factor arguing for the wisdom of that approach. A close examination of the future suggests, however, that the officer corps could likely benefit from some additional experiential breadth, particularly in certain key areas.

There are seemingly countless analyses of key trends shaping the future. Most of these include discussions of demographics or migration, the availability of natural resources, the climate and the environment, energy, political structures, economics, and science and technology.¹¹ Analysts within the national security community have applied this thinking to more specific examinations of the future security environment, military operations, and, in some cases, the officer corps.¹² While some assessments focus on areas that have become flash points in ongoing debates (for example, requirements for language expertise), a more fundamental set of environmental characteristics—complexity, uncertainty, and asymmetry—sets the basic imperatives for the future officer corps. Each is accelerating in ways that suggest a fundamentally changed and increasingly changing future, one that will present significant challenges for U.S. officers in the decades to come.

11. See, for example, National Intelligence Council, *Global Trends 2025: A Transformed World* (Washington, DC: U.S. Government Printing Office, November 2008); Erik Peterson, *Seven Revolutions* (Washington, DC: Center for Strategic and International Studies, Global Strategy Institute, October 20, 2009), slides; Joshua Cooper Ramo, *Age of the Unthinkable: Why the New World Disorder Constantly Surprises Us and What We Can Do About It* (New York: Little, Brown and Company, 2009); Peter Schwartz, *Inevitable Surprises: Thinking Ahead in a Time of Turbulence* (New York: Gotham Books, 2003); Francis Fukuyama, *Blindside: How to Anticipate Forcing Events and Wild Cards in Global Politics* (Washington, DC: Brookings Institution Press, 2007); Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (New York: Random House, 2007); George Friedman, *The Next 100 Years: A Forecast for the 21st Century* (New York: Doubleday, 2008).

12. Within the Defense Department these include *The Joint Operating Environment 2008* (Norfolk, VA: U.S. Joint Forces Command, 2008); *Vision & Strategy 2025* (Quantico, VA: U.S. Department of the Navy, Marine Corps, June 2008); *A Cooperative Strategy for 21st Century Seapower* (Washington, DC: U.S. Department of the Navy, U.S. Navy, U.S. Marine Corps, and U.S. Coast Guard, October 2007). Other analyses include Andrew Krepinevich, *7 Deadly Scenarios: A Military Futurist Explores War in the 21st Century* (New York: Bantam Dell, 2009); Sam Tangredi, *Futures of War: A Consensus View of the Future Security Environment, 2010–2035* (Newport, RI: Alidade Press, 2008); Friedman, *The Next 100 Years*.

An Increasingly Complex, Uncertain, and Asymmetric World

In the broadest sense, many of the trends mentioned above are converging to create a multidimensional security environment that is significantly more complex than has been the case in the past. While uncertainty, asymmetry, and complexity have always been features of war, they are escalating, individually and collectively, in unprecedented ways. A key component of rising complexity, for example, is driven by the explosion in the types and numbers of actors capable of posing a significant threat to U.S. national interests. For most of America's history, this group has been confined to a select few, and, up until the 1960s, even fewer could threaten from long ranges. This was in large part due to the fact that acquiring such capacity was resource intensive and primarily the purview of nation-states.

During the past 30 years, however, the strategic playing field has become significantly more crowded, with not only a rising number of states but also nonstate organizations and even individuals as well. This expansion has been driven by startling advances in science and technology, accompanied by tumbling costs. Together these have resulted in greatly expanded access to a range of potentially destructive capabilities. Another key factor has been the phenomenal rise in access to the Internet and other communications technologies, which has further lowered barriers to knowledge sharing and information and enabled coordination of purpose and action divorced from physical location. Diagrams of how to construct improvised explosive devices and other highly disruptive but technically simplistic weapons are commonplace on Web sites accessible from around the globe. Finally, the proliferation of knowledge and technology associated with weapons of mass destruction to both state and possibly nonstate groups further complicates the threat landscape.

Each of the expanding number of entities capable of global reach and greater capacity for disruption brings its own set of cultural influences and motivations; Sun Tzu's admonition to "know your enemy" accordingly becomes a much more significant task. Absent commensurate development of deep levels of understanding, uncertainty about the meaning of players' behaviors and intentions rises. Still another layer of complexity is added by the fact that actors are becoming increasingly less discrete: they are tied together by myriad economic, social, and technical interconnections. Recent examples abound: the inability of a coffee company in San Diego to expand to a new location because of fallout from the Lehman Brothers' collapse,¹³ the cancellation of a homecoming football game in Anaconda, Montana, because of a virus originating in Mexico,¹⁴ and the diplomatic difficulty of untangling theater missile defense protection for eastern Europe from our concerns about possible Iranian development of nuclear weapons. As physical and social systems become more intertwined and dynamic, the sensitivity of those systems to permutations rises, increasing the probability of "butterfly effects" and contributing to greater and greater uncertainty.

At the same time, the connections that have blurred the boundaries among actors have generated many more pathways between actions and their possible implications. For the military, this means a rising number of avenues of asymmetry. Entities seeking to challenge U.S. security inter-

13. Nick Carey, "Small Firms Face Credit Squeezed as Crisis Drags," Reuters, October 12, 2009, www.reuters.com/article/ousivMolt/idUSTRE59A29Q20091012?pageNumber=1&virtualBrandChannel=11621.

14. David Erickson, "H1N1 Flu Cancels Homecoming Game," *Ravalli Republic*, October 9, 2009, www.ravallirepublic.com/articles/2009/10/09/news/news44.txt.

ests no longer have to rely on methods aimed at maximizing casualties. Instead, in an environment of pervasive and near-real-time information (to paraphrase Emerson) a lie may be more beautiful than the truth. Media reports abound with instances in which, for example, insurgents in Iraq or Gaza succeed in placing distorted versions of events before world audiences and creating misperceptions that are almost impossible to dislodge despite reams of contrary evidence. Such lies can have substantial effects on U.S. decisionmaking, and the ability to generate lies is available to a far wider number of players than have access to highly destructive weapons, for example.

The benefits the United States has reaped from the information technology (IT) infrastructures that support financial and communications systems, transportation networks, electrical grids, and every other social and physical function are also a great vulnerability, given the potential for cyberincursion or cyberattack. Determining which computer launched such actions can be very difficult; accurately attributing those actions to the individual using that computer presents an even higher hurdle. U.S. reliance on space systems as a key component of its IT structures represents a similar duality of opportunity and weakness. Finally, the technical problem of properly assigning responsibility for many nonphysical acts is further complicated by the lack of national and international legal and policy structures to help frame responses, should they be required. At their most basic level, these trends contribute to what might be conceived of as a diminishing signal-to-noise ratio: our enemies' ability to pose challenges across a widening range of potentially harmful areas (including political, economic, social, and military) allows them to "spread" or lower the signal; at the same time globalization and its interconnections increase the level of environmental noise.¹⁵

In sum, although the United States may be able to anticipate but be unable to muster the willingness to address certain types of surprise,¹⁶ the probability of "surprising surprises" is rising, as is the number of ways in which those surprises might manifest themselves. Unfortunately, these growing surprises are not just an integral part of the new strategic landscape; they are also a persistent feature within military campaigns and the individual operations within them. The resulting implications across our officer corps, therefore, are profound.

Implications for the Officer Corps

Among the largest departures represented in the future is the significant increase in responsibilities for the most junior officers, especially those who routinely operate on land. Downward task migration (that is, the devolution of tasks that have been the purview of colonels, to lieutenant colonels, for example, or from majors to captains) is an additional contributor to these demands, and the two trends indicate junior officers will need a broader set of "foundational" competencies (defined as sets of knowledge, skills, and abilities) than has been the case in the past. A second consequence of the future described above is that the problems officers at all ranks will confront will be increasingly wicked or ill-structured, increasing the premium on highly advanced con-

15. Ken Gabriel and Kathleen Harger, Defense Advanced Research Projects Agency, Arlington, VA, conversation with authors, October 29, 2009.

16. The Defense Science Board's 2008 Summer Study on Capability Surprise argues that past surprises fall into two categories: those that were foreseen but unaddressed ("known" surprises) and those that may have been identified as possible but failed to rise to a level of concern that merited action ("surprising" surprises); see Defense Science Board Task Force, *Main Report*, vol. 1 of *Capability Surprise* (Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 2009).

ceptual skills. These two implications are clear and important; more fundamentally, however, the potential for greater and wider-ranging surprise suggests that the types of competencies the officer corps writ large will need will become increasingly varied and more difficult to predict.

Broadening the “Foundational” Competency Base of Junior Ground Officers

As the world has evolved, junior officers have also experienced a steady rise in their responsibilities. This rise is unlikely to abate as the underlying trends continue to accelerate. While the trends are more broadly relevant, the largest changes and cumulative impacts on junior officers are more profound than for any other officer cohort.

One of the most significant elements in the expansion of junior officer responsibilities comes from a broadening of the “tool kit” they are expected to be able to employ. For much of U.S. history junior officers have been called on to spend their early years mastering employment of small units and individual weapons systems or platforms in (typically conventional) battlefield environments. This still remains largely true for many junior Navy and Air Force officers, who primarily operate as part of larger units and thus have relatively less responsibility for operational decisions than do their ground-based counterparts. But from the earlier points in their careers, Army and Marine officers’ responsibilities have evolved to encompass not just the application of force but the application of power more broadly, to include diplomatic, economic, and informational elements.

This expanded tool kit in part necessitated by the inability of U.S. organizational structures to account adequately for an increasingly complex world, must be applied to a much broader range of (at times simultaneous) missions as well. Our lowest-level officers will continue to be routinely charged with duties ranging from leading small teams in dusty deserts in Iraq, to training friendly militaries in the jungles of South America, to providing disaster relief to earthquake survivors in Asia, to patrolling the U.S. border with Mexico. Even if future policy decisions circumscribe the military’s role in preparing for and responding to missions such as civic development and overseas disaster response, the “messiness” of the strategic environment suggests that officers could continue to face these challenges and thus must have some basic facility for addressing them, regardless of policy preferences in Washington. Civilian agencies may assume greater responsibilities, and may even generate the capacity to perform those responsibilities, but given the relative scale and scope of the military, officers may still be called upon to perform civilian functions in a crisis, whether it lasts for 48 hours, 48 days, or 48 months.

Coordinating and employing a broader tool kit in turn requires effective interactions with a much more varied set of counterparts and partners. Many are civilians in a wide range of roles, from contractors to representatives of nongovernmental organizations to civilian leaders in the local populations. Thus, while previous generations of young officers spent their early years honing their abilities to lead those under their direct command, they are increasingly called on to exercise indirect leadership and influence outside of command relationships as well.

Other advances have also added to junior officers’ responsibilities. Technically enabled flows of information to junior officers are orders of magnitude greater than they were in the past, but so too are the flows of information outward about their activities, both within and outside of the chain of command. Junior officers’ actions are increasingly reflected not only as blinking icons in higher-echelon command posts, but (and sometimes even more quickly) on TV and computer screens around the globe. Anticipating and managing the effects of so many information channels

is a significant departure from the much more restricted information environment of the past. Another crucial aspect of this change is the speed with which information moves, which continues to increase. Thus, effects are manifest in ever-shortening cycles, compressing action-reaction loops and decision timelines. Obviously this information flows both inside and outside of military channels, and the military's acknowledgment of the importance of the media in particular, manifest in embedded reporters, blogs, and other dissemination methods, has placed an additional set of demands on officers who must anticipate and respond to queries that might have little resonance in a traditional military context but that take on a vastly different meaning when viewed by outside eyes.

Many of the same technical advances that support greater information flows have enabled, and in some cases required, U.S. forces to operate in an increasingly less centralized fashion. The greater precision of weapons has increased the vulnerability of massed forces, which at times necessitates greater dispersion. The nature of recent irregular warfare operations serves as a further reminder that missions among and on behalf of vulnerable populations in particular may also require decentralization and force dispersal. Fortunately, increasing technological reach has enabled forces to operate more independently. While these shifts are again most profound for ground forces, they apply to some extent for air and naval forces as well. In some instances, greater dispersion could mean that officers at lower echelons are responsible for increasingly larger areas. This in turn suggests that they will likely assume greater responsibility for some of the capabilities that have traditionally been provided by higher headquarters, including logistics support, intelligence, surveillance and reconnaissance, and other key enablers.

Finally, as technology continues to advance and spread and systems become more complex, junior officers will have a growing need for a basic understanding of the more technically complex systems they control and with which they interact. This will extend to the systems and technical capabilities prevalent in the environment in which they are operating as well as to the capabilities available to their adversaries. Any or all can interact in ways that can significantly enhance or impede mission effectiveness, and they have significant implications for the knowledge base future officers must possess.

Rising Premium on Advanced Conceptual Skills

One of the hallmarks of the U.S. officer, especially since the advent of the all-volunteer force in 1974, has been brainpower. Indeed, one key criterion for officer selection is demonstrated intellectual achievement. And yet innate intelligence and traditional intellectual development practices may no longer be sufficient to prepare officers adequately for the cognitive challenges of the future. Greater uncertainty, increased opportunities for asymmetry, a widening range of missions across the operational spectrum (perhaps simultaneously), compressed timelines, rapidly shared and pervasive information, and operations conducted in heavily populated environments all suggest that problems will be increasingly wicked or ill-structured. In geometric terms, the degrees of freedom or dimensions relevant to a given problem are exploding, limiting the utility of many traditional conceptual models and requiring the development of new thinking tools and methods.

The requirement for higher-level or advanced thinking is largely accepted within the U.S. military, despite the fact that there is no clear definition (either within DOD or in the broader

academic community) of what this set of knowledge, skills, and abilities actually entails.¹⁷ For the purposes of this study, we define it as a set of competencies that includes critical, creative, and innovative thinking; negotiation and consensus building; self-awareness; and communication skills.¹⁸ This is not intended to imply that future officers should be critical to the point of delaying action because of imperfect information or of failing to obey orders. To the contrary, the rising chorus calling for decentralized decisionmaking and “powering down” to the lowest levels has to some degree drowned out a more sensible discussion of the degree to which centralized direction and unquestioning adherence to orders remain vital and valid elements of military activities. There is, however, a need for high-level, sophisticated problem appreciation, articulation, and decisionmaking, which in turn rely on the ability to think critically about available information and context. The ideal officer is one who can shift the balance between obedience and creativity to optimum effect, based on the circumstances at hand.

The acceptance of the general requirement for advanced thinking skills is based on the recognition of many of the environmental changes discussed above. In a complex world, the utility of tacit knowledge (intuitive responses based on past experience) is declining, whereas understanding the relevant lessons that can be drawn from dissimilar prior experiences and applying them to novel ones is increasingly important. And effectively countering widely varying challenges implies that U.S. officers must be capable of framing and developing solutions to a vast range of quickly evolving and dynamic situations. Such advanced conceptual skills are also at a premium in situations where multiple actors could be pursuing similar but potentially divergent aims, based on varying rationales, independently or in coordination. Thus, cognitive demands on officers are growing and will continue to do so.¹⁹ Failing to meet this reality poses perhaps the greatest risk to future military successes.

Greater Variation and Unpredictability in Necessary Officer Competencies

Our examination of the future indicates that the growing responsibilities of junior officers and the need to ensure sufficient cognitive capacity to think through the challenges of tomorrow represent substantial shifts from the past. These two conclusions relate primarily to officers at the individual level (junior ground force officers in the former case, and all officers in the latter). There is also at least one significant implication for the collective capabilities of the future officer corps, which is that many specific sets of knowledge and skills that officers may be called on to exercise will be increasingly varied and unpredictable. Thus, projections about the amount of breadth or depth the

17. See, for example, Shelley Dike et al., “Exploring Conceptions of Critical Thinking Held by Military Educators in Higher Education Settings,” *International Journal of Leadership in Education* 9, no. 1 (2006): 45–60, which found that although the curricula of all DOD educational institutions for U.S. mid-grade and senior officers specifically address the development of critical thinking skills, there was no shared definition of what this skill set entails.

18. This definition is based on the definition of adaptive thinking contained in Elaine Raybourn, “Adaptive Thinking and Leadership Training for Cultural Awareness and Communication Competence,” *Interactive Technology and Smart Education* 2 (2005): 131–134.

19. These demands are obviously levied not only on the officer corps but also on the civilians who formulate national security policies. Although this falls outside the bounds of this study, useful discussions of the challenges in this context can be found in Jeffrey McCausland, *Developing Strategic Leaders for the 21st Century* (Carlisle, PA: Strategic Studies Institute, 2008) and Andrew Krepinevich and Barry Watts, *Regaining Strategic Competence* (Washington, DC: Center for Strategic and Budgetary Assessments, 2009).

officer corps might need in a given topical domain (for example, foreign languages or counterinsurgency) will be wrong more often, and with less notice, than they would have been in the past. Therefore, rather than focus on point projections relative to specific knowledge or skill areas, we focused our analysis on the general attributes of officers and the officer management and development system that are likely to be most robust across a range of highly uncertain, unpredictable, and widely varying futures.

4

OFFICER MANAGEMENT FOR THE 21ST CENTURY

Even a cursory examination of the future reveals that the complexity, asymmetry, and uncertainty facing tomorrow's military leaders will continue to rise. At the same time, the DOD system to acquire and develop U.S. officers has remained essentially unchanged for decades. This chapter lays out recommendations for how DOD should address some of the obvious disconnects. Junior ground officers in particular need a broader set of foundational skills, knowledge, and abilities. Meeting these needs presents a particular challenge in a time-constrained development system operating within a closed labor market. In addition, officers across the board will be called on to make sense of an environment that is becoming increasingly dense, interconnected, and dangerous, a reality that calls for an expanded and more systematic approach to the development of critical thinking skills.

The most important implication of the highly dynamic future described in chapter 3 is its growing divergence from the relatively rigid and uniform system that currently governs U.S. officers' careers. Indeed, the fundamental premises upon which that system is based are increasingly invalid in light of emerging realities. The disconnect between many of the competencies such a future demands of U.S. officers and the system charged with satisfying those needs is a clear instance of what Canadian scholar Thomas Homer-Dixon, writing about the broad set of emerging environmental and social problems facing humanity, has termed the "ingenuity gap," or a "soaring requirement for ingenuity and an increasingly uncertain supply."²⁰ It is important to note that some competencies—those relating to effective direct leadership, for example—have always been and will remain critical to officers' success. However, other areas beyond the traditional bounds of military officership pose greater hurdles. While specific actions should be taken to address the foundational and conceptual challenges facing junior ground officers and the officer corps more broadly, making significant progress toward closing the ingenuity gap will require a more flexible and responsive officer management system overall. This entails modifying the premise for advancement from one based on time to one based on competencies, not all of which will be constant over time. The system must be able to accommodate such variability if it is to be sustainable for the long term and continue to produce the leadership that is the keystone of U.S. military success.

Broadening the Foundation of Junior Ground Officers

As in the past, young leaders will continue to be required to exercise direct leadership over their units and develop proficiency in their basic branch or specialty. Yet the set of requisite additional

20. Thomas Homer-Dixon, *The Ingenuity Gap* (New York: Knopf, 2000).

competencies will continue to expand beyond this base. Junior leaders across all services will confront significantly more difficult conceptual challenges in the future, as will their superiors. Specific recommendations to enhance officers' ability to confront that reality are discussed in more detail below. Additional environmental shifts that portend the greatest changes for junior officers in particular include:

- a higher proportion of operations among dense and varied civilian populations
- more deliberate preparation for operations with and alongside a broadening range of actors (from other government agencies to civilian contractors to private sector interests)
- continued rapid increases in technological sophistication

The first two of these factors (both of which involve increased interactions with more widely varying groups of people) most directly affect junior Army and Marine Corps officers leading small units responsible for (potentially increasingly large) pieces of terrain. Successfully managing those interactions indicates growing needs for both cultural competence²¹ and indirect leadership skills.

Because typical naval and air officers in most specialties do not lead independent units that habitually interact with other groups outside of their parent service, the impacts of changes in the external environment that relate to those populations are less immediately relevant to them than to their ground force counterparts. Junior Air Force and Navy officers are likely to be most directly affected by technical trends (both the rising technical sophistication of many friendly and adversary systems and the more rapid rate of inserting advanced capabilities into existing platforms). These realities suggest that the current focus on immersing junior air and naval officers in largely technical disciplines and training will remain relevant and important for the foreseeable future. There are exceptions, however. Relatively junior naval and air officers, for example, have found themselves leading provincial reconstruction teams in Iraq and Afghanistan. Even if this particular mission is "reassigned" to the ground forces, an uncertain future suggests that maintaining bright lines between traditional service missions that preclude utilizing the whole force in times when excess surge capacity is needed will become an increasingly risky approach. Therefore the Navy and Air Force too should anticipate a continuing need to increase, deepen, and maintain social science and population-focused expertise.

The objective, therefore, is to maintain the current foundation of branch or specialty expertise for junior ground force officers, but to augment it with additional knowledge, skills, and abilities that facilitate greater effectiveness in working with more diverse populations. Given that ground officers assume small-unit leadership positions in their first two to three years, opportunities to purposefully develop an even more substantial competency base are extremely limited. Theoretically it is possible to create more time for competency development by delaying assignment to leadership positions until later in an officer's career (perhaps by increasing the rank of given posi-

21. It is important to make the distinction between "general" cultural competence, which is what is intended in the discussion here, and more specific cultural competence. We consider cultural competence to be a generalized set of skills and knowledge that relate to the ability to identify and effectively operate within cultures other than one's own, be they in different organizations, nations, or other groups. The services tend to focus more directly on specific cultural competence, or knowledge that relates to a particular culture. Overall, we believe that officer development efforts should focus on fostering more flexible general cultural competency, with specific cultural knowledge "injected" immediately prior to relevant engagements.

tions). This would have a variety of consequences, however, and the consequences would include an older and more expensive force.

If platoon leader or commander positions were designated as captain rather than lieutenant billets, for example, generating a sufficient number of lieutenants to ensure an adequate supply of captains might require increasing accessions, or increasing the length of initial service obligations, or both, as well as creating new lieutenant billets specifically aimed at fostering the additional requisite competencies. Although this option deserves further examination, less disruptive alternatives may be sufficient to meet the needs for a broader foundational competency base. These alternatives focus on increasing officers' developmental opportunities prior to commissioning in each of the three primary commissioning sources (service academies, ROTC programs, and OCS).

RECOMMENDATION: THE SUPERINTENDENTS OF THE U.S. MILITARY ACADEMY AND THE U.S. NAVAL ACADEMY SHOULD INCREASE THE NUMBERS OF “OUTSIDE” EXPERIENCES FOR CADETS AND MIDSHIPMEN AND ADJUST CURRENT OPPORTUNITIES TO FOCUS AT OPERATIONAL AND TACTICAL LEVELS.

All of the military academies have made great strides in recent years creating opportunities for cadets and midshipmen to spend periods of time outside of their traditional courses of study. Options range from formal exchange programs at foreign military institutions to short-term internships in various executive branch agencies.²² These experiences provide future officers with exposure to a variety of other cultures and, in some cases, may also offer opportunities to practice indirect leadership skills. Many of these programs are funded by alumni groups and other private foundations at little or no cost to the services. The superintendents of the USMA and USNA should seek additional funding in order to expand the number of such opportunities, given the advantages they provide in building cultural competence, in particular.

In addition to quantitative increases, service academy leaders should revisit the content of such experiences to ensure optimal alignment with the types of skills and abilities cadets and midshipmen will need early in their careers. For example, many of the internships in executive branch departments and agencies take place at the organizational headquarters. These experiences offer exposure to the culture of the hosting organization, which is useful. But the work that is performed at the Department of State in Washington, for example, focuses on national-level strategic policymaking, which is most relevant to officers who are more advanced in their careers. Instead, the academies should seek assignments at lower levels, in the tactical and operational offices of those departments and agencies, with which junior officers could more reasonably expect to interact early in their careers. They would still experience a different organizational culture, but they would also gain an appreciation for the processes and structures that affect field operations.

Academy leaders should also explore exchange or internship opportunities with a broader range of potential partners, especially nontraditional ones such as private sector entities or non-

22. House Committee on Armed Services, Subcommittee on Oversight and Investigations, *Beyond Service Core Competency: Are Our Junior Officers Prepared for Today's Security Environment?* Hearing, 111th Cong., 1st Sess., July 15, 2009; Dana Born (statement before U.S. House of Representatives, Committee on Armed Services, Subcommittee on Oversight and Investigations, hearing on *Beyond Service Core Competency*, July 15, 2009); Patrick Finnegan (statement before U.S. House of Representatives, Committee on Armed Services, Subcommittee on Oversight and Investigations, hearing on *Beyond Service Core Competency*, July 15, 2009); Matthew Klunder (statement before U.S. House of Representatives, Committee on Armed Services, Subcommittee on Oversight and Investigations, hearing on *Beyond Service Core Competency*, July 15, 2009).

governmental organizations (NGOs). Although there may be some resistance in certain corners owing to cultural biases of their own, some NGOs would likely be willing to support a four-week internship building houses in Honduras, for example. This type of experience would provide a cadet the opportunity to practice indirect leadership skills as well as develop an appreciation for both NGO and Honduran cultures. Similarly, placing a midshipman in the Lagos office of a large company for a summer would expose the midshipman to both corporate and Nigerian culture in ways that could significantly inform a personal understanding of how best to integrate private sector and host nation entities with small-unit operations.

Finding willing partners for such endeavors is not always easy, and both sides will no doubt be conscious of creating or reinforcing the perception of militarizing inherently civilian activities. The fact remains, however, that future challenges necessitate greater interaction with a broader array of partners. Thus, existing cultural barriers must be broken down. Very young (future) officers less invested and steeped in certitude of the value of their own culture and who are still students may be among those best equipped to make progress on this front.

Opportunities such as student exchanges with foreign military academies will continue to provide unique opportunities to build important relationships, and these programs should continue. The academies should expand the numbers and types of outside experiences they offer to ensure the greatest potential relevance to the challenges officers will face immediately upon commissioning.

RECOMMENDATION: THE ARMY AND NAVY RECRUITING COMMANDS SHOULD EXPAND ACADEMY-LIKE “OUTSIDE” EXPERIENCES TO OTHER OFFICER COMMISSIONING PROGRAMS.

At present, most service-sponsored or sanctioned opportunities for “other” experiences during precommissioning programs are restricted to the service academies. Students who either participate in ROTC programs or eventually go through OCS will in some cases have similar opportunities offered through their undergraduate institutions, but the services should pursue more deliberate expansion of those opportunities to ROTC cadets at a minimum. Such opportunities could replace some basic military training during the summers or could be offered to graduates awaiting their initial assignments.

Offering such outside experiences to OCS candidates is a more complicated proposition because some complete their undergraduate education before they apply. For this group, short internships or exchanges might be possible during periods when they are waiting for OCS positions, although regulations and legal concerns might require a private foundation to sponsor and manage such efforts. For OCS candidates drawn from the enlisted ranks, additional analysis would be required to determine whether outside funding could be accepted or how much additional service funding would be required to support such an initiative. But for officer candidates not yet commissioned, foundations and private entities could presumably support the same types of internships and exchanges currently available to cadets and midshipmen.

Some might argue that the need for broader cultural exposure is less acute for officers drawn from civilian universities because they would have had the regular opportunity to interact with people from a wide range of differing perspectives and cultures, as opposed to the more narrow cultural confines of the service academies. There is some validity to this argument. Individual experiences at civilian universities can vary greatly, however, and the services have little or no ability to judge how much purposeful exposure and interaction a given officer candidate might have had to people from different backgrounds, perspectives, and interests, and to practice indirect leader-

ship skills. Thus, efforts to more deliberately develop such exposure and practice are likely to result in a more common baseline across officer candidates. And, although the principal motivation for the services to expand opportunities would be to improve the preparation of junior officers, those opportunities could also serve as incentives for officer candidates. The services could use such opportunities as recruiting tools, inducements for longer service commitments, and as rewards for superior performance academically or in military training.

Increasing Advanced Conceptual Skills²³

The need to enhance officers' critical thinking skills is generally accepted by the services and is a key learning objective at most DOD schools.²⁴ This is a reflection of DOD's current approach, which seeks to foster greater critical thinking through formal education. But, although schools are clearly a crucial venue for developing this skill set, developmental research indicates that a broader approach is warranted. Such an approach should increase its focus beyond the schoolhouse and expand to foster development of a number of related skills.

The principal driver of development in children is the process of biological maturation. For adults, however, development relies primarily on experience. But not all experiences necessarily result in development or progression. The value of any given experience is influenced by a number of factors both inherent to the individual and in the individual's broader environment. These factors include the developmental level at which a person enters into a given experience and also whether the person receives meaningful, high-quality feedback.²⁵

In the case of officer development, these realities are only partially reflected in the services' efforts to foster critical thinking skills. Many military schools, particularly those meant for mid-grade and senior officers, emphasize an experientially based learning approach. The fact remains, however, that the ability of those schools to provide routine, repeated opportunities for practice and feedback is relatively limited. Such opportunities are much greater in unit assignments, where officers spend the bulk of their careers, rather than in formal educational settings. This suggests that schoolhouse efforts to enhance critical thinking skills could be usefully augmented with efforts more deliberately aimed at fostering such skills during unit assignments.

RECOMMENDATION: SERVICE LEADER DEVELOPMENT PROPONENTS SHOULD DEVELOP UNIT-BASED PROGRAMS TO FOSTER DEVELOPMENT OF CRITICAL THINKING SKILLS.

Although the responsibilities and emphasis varies by service, many unit commanders are tasked with implementing developmental programs for officers within their units. These usually include such things as outside lectures, visits to battle sites and other historically relevant venues, and recommended reading lists. Although these programs can be useful, they are not implemented universally; neither are they specifically targeted at improved thinking skills. The services

23. This section is based greatly on David Day, Michelle Harrison, and Stanley Halpin, *An Integrative Approach to Leader Development: Connecting Adult Development, Identity, and Expertise* (New York: Routledge, 2009).

24. As noted earlier, while the need is widely acknowledged, there is much less clarity about what the term "critical thinking" actually entails. We use it here in a broad sense, to incorporate aspects of reflection, hypothesis generation and evaluation, and decisionmaking with incomplete information; see Dike et al., "Exploring Conceptions of Critical Thinking Held by Military Educators in Higher Education Settings."

25. Day, Harrison, and Halpin, *An Integrative Approach to Leader Development*, p. 37.

are justifiably concerned about placing additional mandatory requirements onto already heavily tasked units and unit leadership. That said, additional guidance for commanders could be provided that would help them better focus existing unit development programs on achieving progress in key aspects of critical thinking. Commanders should also be provided with tools and techniques specifically aimed at improving critical thinking outcomes that could be incorporated into existing staff processes and training activities.

In addition to broadening the venues through which critical thinking skills are developed, the services should expand the range of skills they aim to foster. Studies indicate that the physiological model of enhancing the strength of specific muscles by targeting supporting muscle groups extends to the conceptual realm as well. That is, there is a set of “supporting” skills that play a significant role in individuals’ abilities to progress to more advanced conceptual models. Many of these skills relate to self-understanding and self-efficacy, such as metacognition and epistemic cognition (including the ability to understand the limits of one’s knowledge as well as the cultural and other biases one brings to problem development). People’s views on issues and approaches to problems are shaped by the various cultures in which they are immersed; these can be ethnic, organizational, familial, regional, and national. Developing a deep appreciation for how those influences affect one’s thinking requires significant attention, feedback, and dedication. Yet these types of skills generally receive indirect, if any, attention in the officer development process, despite their strong contributions to conceptual development.

RECOMMENDATION: THE SERVICES SHOULD DIRECT THE ADOPTION OF MECHANISMS AIMED AT UNDERSTANDING AND ENHANCING OFFICERS’ SELF-UNDERSTANDING AND OTHER SUPPORTING SKILLS THAT ENHANCE CRITICAL THINKING.

Realistic self-awareness is another of the most important of these skills. But, although the services admonish officers to develop self-understanding, institutionally directed opportunities to do so are limited. The primary mechanism for feedback is through officer evaluation reports or fitness reports (OERs and FITREPs), which at field grade and above frequently are drafted by the officer being rated before formal approval. These reports are intended to serve as a written record and to be accompanied by a face-to-face session that would theoretically include constructive criticism about how an officer could improve in certain areas. Numerous studies and many of the interviews that we conducted indicate, however, that meaningful developmental counseling sessions rarely take place.²⁶

Mentoring relationships are another means through which officers can come to better understand their strengths and weaknesses. Over time the services have experimented with implementing mandated mentoring programs but, consistent with many similar studies of other populations, have found that required mentoring rarely results in meaningful relationships. After-action reports (AARs), which all of the services conduct after training events and frequently in other venues as well, are another (and perhaps the dominant) means through which officers receive feedback about their performance. AARs are clearly a useful tool in enhancing individual and shared un-

26. See, for example, Henry J. Leonard et al., *Something Old, Something New: Army Leader Development in a Dynamic Environment* (Arlington, VA: RAND Corporation, 2006); Gregg F. Martin et al., “The Road to Mentoring: Paved with Good Intentions,” *Parameters: US Army War College* 32, no. 3 (2002): 115–127; Todd Lancaster, “Air Force Mentoring: Developing Leaders” (thesis, Air Staff and Air Command College, Air University, Maxwell AFB, AL, 2003); David French, *Leadership Development: A Supervisory Responsibility* (Santa Monica, CA: Project Air Force, RAND Corporation, 2000).

derstanding, but they are also frequently oriented on specific tasks or activities, with less attention paid to more general competency development. Thus, additional forums are likely needed to ensure officers are provided with robust and repeated feedback on their behaviors in order to inform more accurate self-understanding across the broadest range of officers.

Additional ad hoc feedback measures are incorporated into training events at various military schools or courses and in particular units, but the services lack a comprehensive approach for systematically providing officers with meaningful feedback that would inform reliable and realistic self-understanding. One tool that has been the subject of numerous pilot programs is the 360-degree assessment, which collects perspectives on performance not only from superiors but also from peers and subordinates. Ideally additional assessment tools could be developed and employed that would incorporate perspectives from those outside of military organizations when relevant to a given assignment or position. Although seeking such input would be well outside most officers' comfort zones, it may provide some of the most useful information about an officer's ability to influence effectively those outside of the chain of command. None of the services currently employs these types of tools systematically or repeatedly. More meaningful counseling sessions as part of the existing officer evaluation process could serve some of the same purposes (though with a more limited set of perspectives). The value of such tools is greater than the first-order effects of providing more useful information that officers can use to enhance their effectiveness; they are equally important to continued conceptual development, which should provide even further impetus for their adoption.

Evolving to a More Flexible, Adaptive Officer Management System

Learning More about Current and Future Officers

Regardless of whatever broader changes might be made to the officer management system, two things are clear. First, DOD's understanding of what officers already bring to the table is limited. Second, enhancing that knowledge would support the more effective and efficient use of the existing base of officers' knowledge, skills, and abilities, which would at least be a partial step toward closing the ingenuity gap. As just one example of DOD's lack of insight into capabilities it already has on hand, in 2008 when commanders in Afghanistan sought additional agricultural expertise, DOD had no mechanism through which such expertise could be identified. Offices had to rely on email queries to eventually locate people with the relevant skill sets. Addressing this problem has two components: making existing data about officer competencies more accessible, and collecting additional information.

With respect to existing data, many organizations within DOD collect a variety of officer-related information about officers to support their specific mission or organizational interest (for example, readiness, physical health, and family status). Many of the databases and IT systems that house these data are not interoperable, however, which greatly restricts the information's visibility and accessibility to the broader DOD enterprise. To address this problem, OSD (Personnel and Readiness) recently convened the Combatant Commanders (COCOM) Needs Working Group to analyze existing human resource systems and their abilities to support the personnel needs being expressed by combatant commanders. At the conclusion of Phase I, the group recommended adoption of a variety of data standards and the development of a new system to better integrate

existing efforts. Phases II and III of the working group's efforts are intended to identify additional needs and assess future IT solutions.

RECOMMENDATION: THE DEPUTY SECRETARY OF DEFENSE SHOULD DIRECT THE USE OF COMMON DATA STANDARDS TO FACILITATE COMPETENCY-RELATED DATA SHARING, ALLOCATE FUNDING FOR THE DEVELOPMENT OF A DATA-SHARING SYSTEM, AND CHARGE THE COCOM NEEDS WORKING GROUP WITH COMPLETING PHASES II AND III OF ITS ANALYSIS IN TIME TO INFORM THE NEXT BUDGET CYCLE.

Even if the sharing of existing data improves, however, the scope of those data is too limited. For example, DOD has almost no information about skills that officers might bring with them upon commissioning or that they acquire on their own time. The Reserve Component collects skill-related data prior to entry, but it is not regularly updated, nor is there an effort to collect similar information from officers entering the Active Component. Some information about officers is collected if, for example, it results in a degree that might be reflected on a personnel record or in a special skill identifier, but these data are inconsistent and difficult to reliably search and utilize. The intent of collecting additional information would be to improve utilization of those skills in an officer's career rather than to inform qualitative judgments that might affect promotions. In light of potential concerns about their use, the services would need to manage data collection efforts carefully to ensure accuracy and reliability.

RECOMMENDATION: THE SERVICES SHOULD REQUIRE OR OFFER INCENTIVES TO OFFICERS TO SELF-IDENTIFY SKILLS AND ABILITIES UPON ENTRY AND THEN AT REGULAR INTERVALS THROUGHOUT THEIR CAREERS, AND THEY SHOULD DIRECT COLLECTION OF ADDITIONAL SUBJECTIVE AND OBJECTIVE MEASURES OF ACTUAL DEVELOPMENTAL COMPETENCIES.

Developing a better understanding of strengths within the officer corps must ultimately rely not only on developmental outputs such as courses completed or outside employment experience, but on developmental outcomes as measured by direct assessments of particular competencies. Given that identical experiences can produce varying developmental results, experience as reflected in assignment histories is clearly a poor substitute for more direct measures of officer development. OERs and FITREPs currently provide the most robust information about individual officer abilities, but they are both incomplete and inconsistent. First, they typically contain few explicit assessments of numerous competency areas of interest (for example, communications or indirect leadership skills). Second, to the extent that competency judgments are made, they are principally contained in the narrative sections of the reports, which are frequently based on implicit criteria and vary in their depth.

OERs and FITREPs should be modified to be more comprehensive, objective, and searchable to better support data analysis. Standard formats should also be adopted for other developmental output indicators such as degrees, school attendance, and training experiences. The services should also investigate whether report formats should vary across specialty, rank, or other discriminators, as not all competencies might be of equal interest across all populations. Finally, the services should seek to augment subjective judgments with additional objective measures in some limited set of key competency areas. Multiple tools have been developed to assess, for example, critical thinking skills and moral development.²⁷

27. At least a partial list of potential measurement tools can be found in Day, Harrison, and Halpin, *An Integrative Approach to Leader Development*, pp. 305–308.

Closing the Ingenuity Gap

The recommendations above should help better prepare officers for future challenges and should better posture DOD to understand (and thus better utilize) its officers. They do not address, however, the basic structural factors leading to a widening ingenuity gap. Slowing the dramatic rate of external change is obviously outside of DOD's purview. DOD can, however, take steps to update the officer management system to better align with a future characterized by complexity and uncertainty.

Although the discussion in chapter 2 focused on the subset of officers within each of the services who serve in combat-related specialties, it illustrates that officers spend their careers engaged in largely similar activities, particularly as they advance in rank. Those activities in turn serve as the basis for decisions about who ought to continue their military careers, as determined by promotion boards.

This system has fostered countless high-quality officers. However, the most senior were formed in a relatively stable environment of largely predictable operational demands. Thus the question becomes whether the same system can be counted on to continue to deliver in the face of the immense challenges posed by an increasingly complex and uncertain future. Answering that question requires an examination of the continued validity of the assumptions underpinning current practices.

One major assumption is that time spent in a given assignment or in a given grade is a reliable indicator of actual experience. During the Cold War, for example, commanders of tank companies spent their command time engaged in a relatively consistent set of activities driven by an annual training calendar. One could reasonably predict the number and types of training events the company would have to plan for and execute. This assumption still holds to some degree for some services and specialties (submariners in their initial tours are still likely to engage in a roughly consistent set of activities). It is much less true, however, for the ground forces overall and for officers from all services at higher ranks serving in identical positions, either within their services or in joint assignments. The widening range of missions, activities, and partners means that the content of a given assignment can change radically from year to year, or even from location to location, making time a much less reliable indicator of what an officer might actually have done in any given position.

A second assumption is that common experiences are a reliable indicator of a given level of competency—that if the content of a year of squadron command were identical for two officers, for example, the resulting competency development for each would be equal. From a developmental perspective, experiences help to lay the foundation for deepening expertise, which is why all the services emphasize certain core sets of experiences as fundamental to their profession. Although widely accepted and implicitly built into current assignment patterns and promotion considerations, this assumption is not strongly supported by research. In fact, a broad and growing set of analyses indicates that numerous factors affect the developmental value of a given experience (and presumably the resulting expertise). Thus, the utility of using a given amount of time in a given assignment or set of assignments as a reasonable predictor of expertise is limited, and it is certainly unlikely to be as reliable as the officer management system currently expects.

A third critical assumption is that the services can reliably identify the set of future competencies they will need with sufficient lead time to develop them. As noted above, the services must grow almost all of the expertise they will need in the next 20 to 30 years. The private sector, in

contrast, can respond to unanticipated changes by “buying” the expertise it needs in an open labor market. This challenge is further complicated by congressionally mandated limitations on officer authorizations and their grades. These “supply side” constraints force the services to make trades between growing additional expertise in fields such as cyberwarfare, for example, or preserving expertise in more traditional warfighting areas. These calculations must further incorporate assumptions about likely attrition rates, which in turn depend on many variables outside of the services’ control.

Each of these assumptions is problematic, and the first and third in particular are becoming even more so. Even if career patterns remain relatively constant, as the content of an officer’s career becomes more varied, using time as a basis for advancement is increasingly less justified. When coupled with the growing body of evidence that, even if content is uniform, the resulting development is still highly variable, a time-based construct becomes even less valid. Finally, growing complexity and uncertainty suggest that the services’ lead time for understanding the full range of requisite officer competencies will become shorter and shorter. Fundamentally, the soundness of at least two of the three key assumptions upon which the U.S. officer management system is predicated depends on an external environment that is both stable and predictable. Arguably, such conditions have never existed; at a minimum, however, they appear increasingly less likely in the future.

Addressing this reality necessitates shifting the primary standard for officer progression from time to competencies.²⁸ A competency-based system would allow for more varied career paths, as officers would be relieved of the requirement to meet promotion “gates” within tightly constrained timelines. Acknowledging that time has become an increasingly unreliable indicator of experience and development, the services would have to change the basic framework of the competency-based system and specific sets of knowledge, skills, and abilities commensurate with the responsibilities of each rank. Officers would then nominate themselves for promotion after they believed they had satisfactorily demonstrated those competencies. Direct competency measures ideally would contribute to promotion eligibility judgments, but if and until adequate direct measures are implemented, output measures such as schools and assignments can be used as an imperfect proxy.

This might sound like a radical change, but it need not be in implementation. The services’ current focus on key assignments in each grade is a relatively clear indicator of the types of competencies they assume those assignments develop. Making the implicit competencies more explicit should help facilitate a discussion of how well those competencies continue to align with the future as it evolves. In addition, it allows for consideration of potential alternative experiences that might similarly lead to desired outcomes, broadening the range of possible assignments in which officers might serve.

28. Contrary to widespread belief, current law does not mandate specific timelines for promotion. Time-based guidelines were recommended in the Defense Officer Personnel Management Act (DOPMA) of 1980, but were not made statutory. See Bernard Rostker et al., *The Defense Officer Personnel Management Act of 1980: A Retrospective Assessment* (Arlington, VA: RAND Corporation, 1993), p. 13, n. 14. OSD has reflected those guidelines in its policies. Title 10 does establish minimum amounts of time in grade, but a competency-based system could be implemented without any major statutory modifications. For a more complete description of how a competency-based system might be constructed and its implications, see Peter Schirmer et al., *Challenging Time in DOPMA: Flexible and Contemporary Military Officer Management* (Arlington, VA: RAND Corporation, 2006).

Examples of a Competency-Based Officer Management System

To further explain how a competency-based officer management system might operate in practice, we offer two examples. The first case is a Marine Corps officer, O3, with seven years of service who has had two deployments to intense combat environments. Her performance has consistently been evaluated as superlative, and this has led her superior officers to assign her additional duties and responsibilities in many of her positions. Further, she has volunteered as the vice president of a neighborhood environmental club and has completed graduate coursework in regional studies on her own time. In theory, under the current system, she is eligible for “below the zone” promotion. In practice, however, these authorities are rarely used: in the Marine Corps, for example, only one captain has been selected for below the zone promotion in the past seven major selection boards.¹ Realistically, the captain described here is unlikely to move forward until her entire cohort is considered for promotion.

In the second scenario, an Air Force O4 is progressing at about the same rate as his peers and is presented with the opportunity to attend graduate school. His mother is ill, and the school is in a location that would allow him to provide additional support for his family at the same time. Completion of the degree program would place him beyond his primary promotion zone, forcing him to choose between likely continued advancement and the combination of developing additional skills and competencies that would make direct contributions to his professional expertise and help his family through a difficult time.

Under a system in which desired competencies are clearly articulated for each rank, both officers would be able to nominate themselves for promotion consideration at a point when they felt they had sufficiently demonstrated those competencies. In the first case, the Marine captain could have nominated herself for major early and competed against other officers with varying time in service, seniority, and different experience bases. In the second, the Air Force major could have nominated himself after attending school, presumably later than some of his counterparts but with additional demonstrated competencies that would strengthen his case for promotion.

The system would retain some time component (for example, O2s might have to nominate themselves for O3 consideration at some point between three and six years of service), but, as has been the case in the past, time windows would be broader and could vary across services and specialties as appropriate. Depending on how much variation is seen as necessary, statutory modifications may be needed, although some changes could be made within the bounds of existing law. The rest of the system, including aspects such as up or out, could remain intact; that is, the point at which the officers nominated themselves would be considered an officer’s primary zone screening, and, if not selected, that officer would be eligible for one additional “look” before being separated.

Note

1. Michael Lorino, “Marine Officer Promotions: Incentivizing and Retaining Top Performers,” *Marine Corps Gazette*, November 2009, p. 67.

The principal benefit, however, would be to allow officers who, for any given reason or set of reasons, need or want to take either less or more time to develop at certain points in their careers. Providing them with those opportunities without requiring them to spend more time in a grade than the officers might need or disadvantaging them in the promotion process and potentially making them face separation should increase officer satisfaction and performance as well as make more efficient use of the services' primary resource, its leaders. Overall, while averages of time in grade, time spent in key assignments, and other measures need not vary greatly from today, individual officer experiences would be more diverse (in probabilistic terms, the shape of the distribution for each of these variables would become flatter). The result would be an officer corps with a wider variety of experience and expertise.

Focusing on competencies and increased variability, such a system would generate numerous benefits. Chief among them would be the opportunity for improved decisionmaking. One advantage of military decisionmaking is that, while the ultimate authority is usually clearly assigned and accepted, few decisions are made without input from a broader team. This decreases the likelihood of a "single point of failure" and serves as a hedge against some forms of bias, dangers that become even greater with the growing uncertainty and ambiguity that will characterize future operations. In an era when problems will be less familiar and direct experience less relevant, an even wider variety of perspectives on a given team increases the probability that an appropriate mental model will emerge and be utilized.

Another benefit of a competency-based system would be an increased ability to anticipate, understand, and monitor the impact of actual changes in assignment patterns. Some of the services are exploring whether they can "buy more time" in officers' careers, either to meet mandated external requirements or to allocate that time to higher-priority experiences. One option under consideration is forgoing assignments that previously have been considered necessary to the development of key skills. For example, the Air Force is evaluating whether its traditional emphasis on command assignments can be modified. Promotion to increasingly higher ranks has by tradition required (with rare exceptions) commands at squadron, group, and wing levels. The Air Force is assessing whether officers might be able to develop sufficient depth in leadership and management skills by holding two of these three command positions, instead of all three.

Similar trades in other areas may long be overdue, and resistance to them may be based more on tradition than actual need. Based on our discussions and interviews, however, they are at least partially motivated by calculations about the difficulties associated with fighting for greater flexibility in the broader system and are being undertaken with deep reservations. It may be that past practices were well founded and that deviations might lead to unacceptable levels of degraded performance. While a competency-based system does not solve such problems, explicitly stated objectives would provide a common, objective foundation for understanding officer development goals and for monitoring the ramifications of shifts in experience if and when they are implemented.

RECOMMENDATION: THE UNDER SECRETARY OF DEFENSE (PERSONNEL AND READINESS) SHOULD REWRITE CURRENT POLICY DIRECTIVES TO FOCUS ON COMPETENCIES AS THE PRIMARY BASIS FOR PROMOTION ELIGIBILITY. THE SERVICES SHOULD THEN MODIFY THEIR PROMOTION PROCESSES TO CONFORM WITH A COMPETENCY-BASED SYSTEM.

The details of how any change to the existing system is implemented will determine the magnitude of the impact on a variety of interrelated concerns and practices, to include assignment and career lengths, retention behaviors, pay, and retirement. There have been a number of studies that have

explored, and in some cases modeled, a variety of modifications to the officer management system similar to the ones proposed here. The RAND Corporation has done prodigious amounts of analysis in this area, although numerous other organizations have contributed as well.²⁹

For the most part, these studies have resulted in relatively modest changes. For example, Congress has provided limited authorities for a variety of pilot programs that offer greater flexibility in narrow areas. The problem is that such modest initiatives are insufficient to meet future challenges. DOD has enough authority to be much more creative in how it promotes and develops officers, although the services' perspectives on the desirability of change vary. OSD should take a stronger role in pushing the services to explain how their current practices can continue to meet future demands and to facilitate implementation of competency-based systems for those who wish to do so.

Moving away from an increasingly meaningless time standard is the most important step DOD can take to better prepare its officers for the future, but additional steps that provide even greater flexibility may ultimately be required. For example, the current statutory framework is relatively rigid with respect to movement between the Active and Reserve Components. But in a world of greater uncertainty, correctly anticipating the depth of required competencies becomes increasingly challenging.

Hedging against that uncertainty forces difficult choices between maintaining an Active Component officer corps that may be larger than required for “steady state” operations and trying to meet potential needs through more extensive use of the Reserve Component. These choices are further complicated by growing resource constraints. Finally, the closed nature of the labor market poses an additional limitation on the officer management system's ability to respond to rapidly changing and emerging demands. At present, the ability to offer direct commissions is limited to medical and legal professionals. Although maintaining a common professional core for officers is vital, one alternative might be to limit the use of direct commissions to a defined percentage of the officer corps, for example, rather than setting functional constraints. Striking the appropriate balance between ensuring the development of a common ethos and the ability to perform required functions is a significant challenge, but there may be areas in which very strong cultural affinity either can be achieved through nontraditional mechanisms or is less necessary.

RECOMMENDATION: THE DEPUTY SECRETARY OF DEFENSE SHOULD DIRECT IMMEDIATE REVIEWS OF THE USE OF DIRECT COMMISSIONING AND RESERVE COMPONENT AUTHORITIES, WITH AN AIM TOWARD EXPANDING OR SHIFTING THEIR USE, OR BOTH. BASED ON THAT ANALYSIS, DOD SHOULD PROPOSE STATUTORY MODIFICATIONS TO ALLOW FOR ANY REQUISITE INCREASES IN NUMBERS OR DISCIPLINES ELIGIBLE FOR DIRECT COMMISSIONS OR FOR UTILIZING RESERVE COMPONENT OFFICERS.

Ultimately, closing the ingenuity gap will require institutions and processes that can accommodate rapidly evolving circumstances that are difficult if not impossible to predict. DOD should take full advantage of the latitude it already possesses to better align officer management with that reality, while simultaneously examining what additional authorities are required.

29. See Defense Science Board Task Force, *Human Resources Strategy* (Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 2000); Schirmer et al., *Challenging Time in DOPMA*; Peter Schirmer et al., *New Paths to Success: Determining Career Alternatives for Field Grade Officers* (Arlington, VA: RAND Corporation, 2006); Harry Thie et al., *A Future Officer Career Management System* (Arlington, VA: RAND Corporation, 2001); Harry Thie, Margaret Harrell, and Marc Thibault, *Officer Sabbaticals: An Analysis of Extended Leave Options* (Arlington, VA: RAND Corporation, 2003).

Conclusion

American officers are the bedrock of military success. They face a whirlwind of change that is picking up speed, yet their preparation is dictated by a system based on stability and predictability that, if it ever existed, certainly does no more. Failing to adapt that system to reflect the future will put our officers at a growing disadvantage, placing more and more of a burden upon them as individuals to overcome a bureaucracy that ideally should be dedicated to best supporting their success. The ingenuity gap is real and growing, and our officers are caught in it. DOD should immediately implement changes to officer management to close the gap.



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APPENDIX A WORKING GROUP ATTENDEES MAY 15, 2009

Col. Chuck Armentrout, USAF
COL Paul Aswell, USA
LTC Dennis Chapman, USAR
COL Denise Corley, USA
Ms. Gwendolyn DeFilippi, USAF
Mr. Clark Delavan, Center for Army Leadership
Mr. Albert Eggerton, USA
Mr. Nathan Freier, CSIS
LTC Robert Hamilton, USA
Mr. Lernes Hebert, Office of the Secretary of Defense
Hon. P.T. Henry, CSIS
Ms. Kristy Kamarck, The RAND Corporation
Dr. Maren Leed, CSIS
Ms. Suzanne McKenna, House Armed Services Committee Staff
Dr. John Nagl, Center for New American Security
Dr. Ann Parcell, Center for Naval Analyses
CAPT Kenneth Perry, USN
COL Christopher Robertson, USA
Mr. Jack Roesner, Joint Staff J7
COL Charles Rogerson, USA
Mr. Peter Schirmer, The RAND Corporation
Col. Steve Zotti, USMC



APPENDIX B REVIEW GROUP ATTENDEES SEPTEMBER 23, 2009

LTC Don Dellinger, ARNG
Mr. Nathan Freir, CSIS
CAPT John Griffin, USN
Dr. Larry Hanser, The RAND Corporation
Ms. Mahrukh Hasan, CSIS
Hon. Karen Heath
Mr. Lernes Hebert, Office of the Secretary of Defense
Dr. Stanley Horowitz, Institute for Defense Analysis (IDA)
Hon. Christopher Jehn
Dr. Christopher Lamb, National Defense University
Dr. Maren Leed, CSIS
Ms. Patricia Lewis, Monfort Lewis LLC
Dr. Jeffery McCausland, Dickinson Law School
Ms. Suzanne McKenna, House Armed Services Committee Staff
MajGen Robert Neller, USMC
Dr. Hilary Price, CSIS
COL Christopher Roberston, USA
Mr. Peter Schirmer, The RAND Corporation
Colonel Harrison Smith, USAF
Mr. David Sokolow, CSIS
Mr. Robert Soule, IDA
MajGen (Sel) Melvin Spiese, USMC
Mr. Nate Tavel, CSIS
COL Jeffrey Vuono, USA
Dr. Cindy Williams, Massachusetts Institute of Technology



APPENDIX C OFFICERS INTERVIEWED

General and Flag Officers

AIR FORCE

General William Fraser III, Vice Chief of Staff

Brigadier General Robert Nolan, U.S. Northern Command, Commander, Joint Interagency Task Force-North

ARMY

General Peter Chiarelli, Vice Chief of Staff

General Martin Dempsey, Commander, Training and Doctrine Command

General Gordon Sullivan (Ret.), former Chief of Staff

General Carl Vuono (Ret.), former Chief of Staff

Lieutenant General Frank Kearney, Deputy Commander, Special Operations Command

Lieutenant General David Ohle (Ret.), former Deputy Chief of Staff for Personnel

Lieutenant General William Reno (Ret.), former Deputy Chief of Staff for Personnel

Lieutenant General Michael Vane, Deputy Commanding General, Futures/Director, Army Capabilities Integration Command, Training and Doctrine Command

Major General David Fastabend (Ret.), Former Director of Strategy, Plans and Policy

Major General Jason Kamiya, U.S. Joint Forces Command Director of Joint Training and Commander of the Joint Warfighting Center (J7)

MARINE CORPS

General James Mattis, Commander, U.S. Joint Forces Command

Lieutenant General John Allen, Deputy Commander, U.S. Central Command

Lieutenant General Joseph Dunford, Deputy Commandant for Plans, Policies and Operations

Lieutenant General George Flynn, Commanding General, Marine Corps Combat Development Command

Major General (Sel) Melvin Spiese, Commanding General, Training and Education Command

NAVY

Admiral Gary Roughhead, Chief of Naval Operations (CNO)

Admiral Eric Olson, Commander, U.S. Special Operations Command

Vice Admiral Mark Ferguson III, Deputy CNO (Manpower, Personnel, Training & Education)

Vice Admiral Robert Harward, Deputy Commander, U.S. Joint Forces Command

Rear Admiral Cindy Covell, Director, Total Force Requirements Division (OPNAV N12)

Company-Grade and Field-Grade Officers

AIR FORCE

Majors: 7

Colonels: 2

ARMY

Captains: 2

Majors: 3

Lieutenant Colonels: 2

Colonels: 10

MARINE CORPS

Captains: 6

Majors: 6

Lieutenant Colonels: 4

Colonels: 3

NAVY

Lieutenants: 2

Lieutenant Commanders: 2

Captains: 3



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