
PLANNING THE FUTURE MILITARY WORKFORCE

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Different questions about military manpower requirements, manpower costs, and trained personnel inventory have emerged as important at various times. For example, just before World War II, the most important question was how to procure a large force immediately. After World War II, the emphasis shifted to managing a large inventory of people with military experience. Now, the emphasis is on recruiting in a highly competitive labor market. Although the broad questions remain fixed, particular aspects of them—recruiting, training, retaining, promoting, compensating, and retiring—receive more or less emphasis at particular times, depending on the nation's military, social, and economic environment. Questions and answers are shaped by many forces, including external events, societal concerns, missions, organization, technology, budget, and demographics. Specific forces at work for the past few years that affect how manpower, personnel, and training questions are asked and answered include a military end strength that is shrinking, threats changing from known to varied, a unitary mission of global conflict shifting to diverse missions within an overall policy of selective and flexible engagement, multiple unit missions replacing single unit missions, variable hierarchies replacing fixed organizational hierarchies, and a joint perspective in operational matters supplanting a service focus.

Planning the workforce is about ensuring that manpower needs are met with trained people at reasonable costs. In past years—as a result of practices from World War II through conscription and the draft-induced volunteerism that ended with Vietnam—planning the workforce was largely about determining its size: forecasting who

would stay if they were currently part of it, and calculating how many new entrants would be needed each year. “Manning” the force was the mantra; “aligning” the force by numbers and grades was the goal. Planning the future force is currently shifting away from recruiting and toward overcoming the retention shortfall. Today, workers are scarce throughout the economy—not overall, but among those who are skilled and committed. Emphasis is shifting away from pure recruiting and retention strategies to strategies aimed at developing existing workforces to carry out emerging work. The goal is to develop a cadre of personnel who have the skills needed to meet the requirements of the national military strategy. Human capital accretes; it is smarter to build on what exists than to start anew.

This chapter focuses on manpower, personnel, and training. Manpower deals with the numbers and types of people needed to accomplish missions, personnel involves managing people either directly (e.g., via assignments) or through incentives (e.g., via compensation), and training and development affects knowledge, skills, and behaviors. The chapter also addresses questions about the size of the force; its grade, skill, and experience composition; and the cost and optimal methods to procure, enter, train, develop, assign, advance, compensate, and remove personnel.

To illustrate these issues, an example of how to analyze manpower and personnel policies is worked through. The specific example explores manpower, personnel, and training policy alternatives for achieving an available, qualified, stable, experienced, and motivated future force. Some policy choices can be applied servicewide; others can be applied to military units or to individual soldiers, sailors, airmen, or marines. The example illustrates controllable and uncontrollable variables involved in policy alternatives, relationships among policy choices and desired outcomes, complexity and conflicts among competing objectives, and how undesired outcomes can emerge. Frequently, the complex relationships among variables are not sufficiently considered in the process of choosing policies. As a result, what appears to be a reasonable decision to save budget dollars can have unforeseen future personnel and training consequences.

MILITARY HUMAN CAPITAL

Human capital comprises the skills, knowledge, and abilities of individuals and groups and has value inside an organization and to an organization's customers. The United States has always gained a military advantage by being able to draw on large pools of human capital.

Inside an organization, the correct skills, knowledge, and abilities lead to greater efficiency; outside an organization, they lead to greater effectiveness with customers. In the U.S. military, the combatant commanders take skills, knowledge, and abilities developed by the services and apply them to seek military effectiveness around the globe for diverse missions. The military needs a proper mix of skills and knowledge to gain internal operating efficiencies and to be effective on battlefields, however defined.

Human capital can be thought of as a “stock,” much as we think of a stock of materiel. It must be built, maintained, and upgraded; left alone, it deteriorates and becomes obsolete. The next few sections review what the stock of military human capital is now, how it got that way, and what it is likely to undergo in the future, specifically:

- The historical size, source, and composition of the active military
- The present composition, characteristics, and attributes of the active military
- The future effect of the present under likely conditions.

Historical Size, Source, and Composition of the Active Force

Consider, one at a time, various characteristics of the active force: size, enlisted/officer mix, skill mix, and source of manpower. Size largely depends on external events; type of manpower and mix of occupations depend on mission, organization, and technology; and source of manpower—conscription or volunteer—depends on the size of the military relative to the size of the population.

Figure 6.1 shows the size of the active military over a 200-year period. For most of U.S. military history, the number of soldiers, sailors, airmen (after the 1920s), and marines largely depended on external

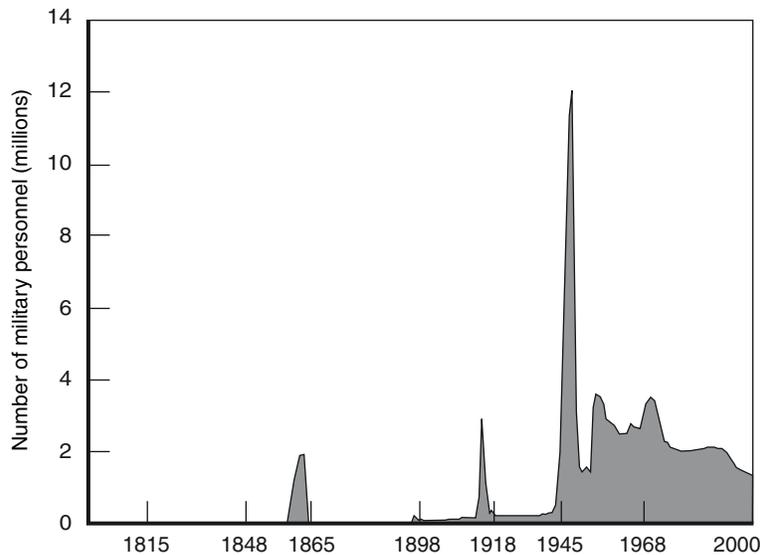


Figure 6.1—Size of Active-Duty Military, 1800–2000

events, with “bumps” in the size of the active-duty force associated with the nation’s earliest wars. When the nation needed to increase the size of the military, it enlisted or conscripted recruits from the general population; when the need abated, these recruits were equally quickly separated. For example, the military increased from 28,000 in 1860 to nearly 2,000,000 by 1864; by 1866, the force had decreased to 77,000. The more recent surges in manpower appear as spikes in the data. Notice the sharp spike by 1945, as the nation mobilized for World War II and the military grew to over 12,000,000. Three years later, however, the force had shrunk to about 1,400,000, a level close to today’s.

Since World War II, external events have continued to shape the size of the force—the post-World War II drawdown in the late 1940s; the Korean War in the early 1950s, with its own subsequent drawdown; the Berlin crisis, which added manpower in the early 1960s; the Vietnam conflict, with its own era of growth and drawdown. The debacle at Desert One was followed in the 1980s by the Reagan buildup, the fall of the Berlin Wall, Grenada, and Panama. In the 1990s, the

breakup of the former Soviet Union, the Persian Gulf conflict, and participation in humanitarian and other nonwar operations were significant. The 1990s witnessed a sharp reduction in the size of the active military.

Figure 6.2 documents the enlisted-to-officer ratio over two centuries. During the 19th century, the ratio was rather flat, with periodic spikes; in times of conflict, the ratio tended to increase as more enlisted personnel than officers were added.

The number of enlisted personnel increased by a factor of almost six, to about 225,000, for the Spanish American War. After that war, the level fell by one-half, to about 115,000, which was a consistent level up until World War I. The “standing” active military began in this era. However, officer strength did not increase as much during this period, which accounts for the high enlisted-to-officer ratio for the first 20 years of the century. Before World War I, brawn still mattered most on the battlefield; coal-fired ships, dismounted infantry, and horse-drawn artillery required proportionally more enlisted personnel. An air force did not exist.

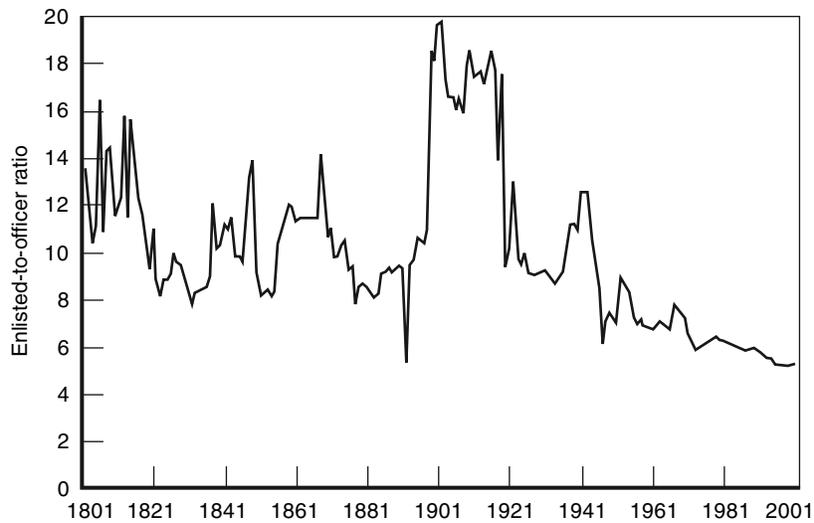


Figure 6.2—Ratio of Enlisted Personnel to Officers, 1800–2000

Since World War I, there has been a significant shift from enlisted to officer manpower. The introduction of the airplane, tank, modern steam ship, and radio shifted work toward more use of brain than brawn. New technologies tend to be “officer heavy” when first introduced, because initially they are complex and require doctrinal and organizational change. Technological innovations also initially require a larger, officer-rich support tail to provide service and supply. Since World War II, the ratio’s trend has been downward, with less frequent spikes, as officers have come to represent a larger proportion of a large active military. Moreover, beginning in World War II, the need to coordinate, integrate, and sustain military forces numbering in the millions, rather than tens of thousands, has led to officers being substituted for enlisted personnel, in part to staff increasingly larger and more hierarchical organizations. These broad trends continue to the present.

The organization of work and the composition of the military force are never static; they change with mission, organization, and technology. The columns in Figure 6.3 summarize the changes in the occupational distribution of the enlisted force from 1865 to 2000.¹ The precipitous decline in jobs classified as general military is as striking as the increase in technical occupations and craftsmen.

During the early years of the military, the demand for occupational specialization was small. Almost all soldiers were infantry riflemen, with a few serving in support activities. The Navy was the first to experience the effect of the Industrial Revolution, and the shift from sails to steam was a far-reaching technological change. The Army lagged for several decades, until the World War I mobilization, but its subsequent transformation was dramatic. By 1918, the combat soldier was for the first time in a numerical minority.

Following World War II, several factors dramatically changed the occupational requirements of the services—e.g., the acceleration of weapons and military technology to include the nuclear military, the application of electronics to communications and logistics, and the

¹Harold Wool and Mark Eitelberg are to be thanked for preserving much of this history. See Harold Wool, *The Military Specialist: Skilled Manpower for the Armed Forces*, The Johns Hopkins Press, MD, 1968; Mark J. Eitelberg, *Manpower for Military Occupations*, Human Resources Research Organization, VA, 1988.

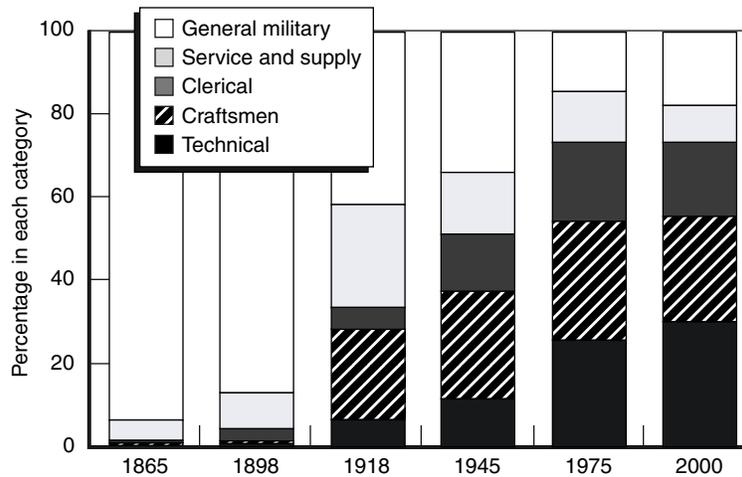


Figure 6.3—Occupational Mix, 1865–2000

emergence of missiles and air defense. Organizational structures changed to take advantage of the new armaments and processes, and there was a noticeable occupational shift from infantry, artillery, and seamanship to technicians. By the early 1980s, technical workers constituted the largest of the five separate groupings, as they do today. As of 2000, 18 percent of enlisted personnel were in a general military specialty, 35 percent were blue collar workers (service and supply workers and craftsmen), and 47 percent were white collar workers (clerical and technical workers).

The United States has used conscription and voluntary enlistment to raise manpower but has never used universal service (although that concept was hotly debated between World War II and Korea).² Figure 6.4 shows the active military as a percentage of the population from 1800 to 2000. The horizontal bar running across the lower part of the figure has four lightly shaded segments showing the four times (which together total only 30 out of 210 years of federal history) con-

²The term *conscription* means that certain rules are used to select a portion of the population for service. *Universal service* (or *universal military training*) means that all militarily qualified citizens must serve.

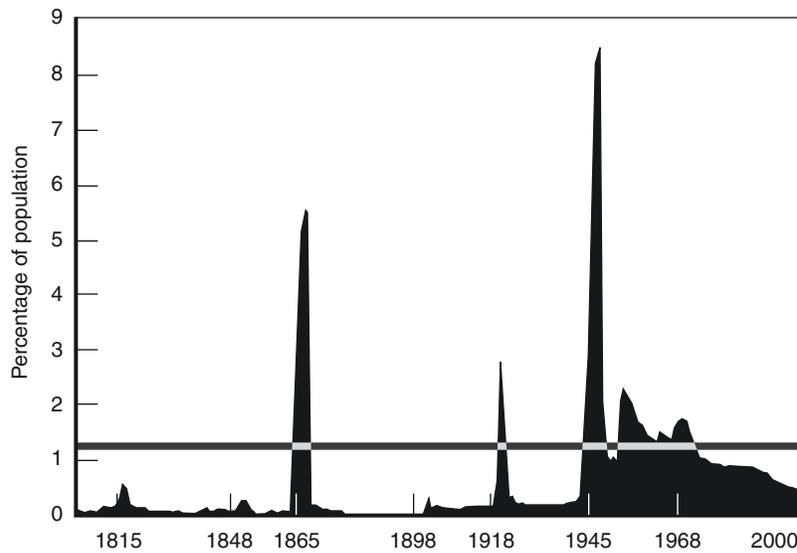


Figure 6.4—Active Military as Percentage of Population, 1800–2000

scription was used. The Civil War and World War I were both periods of wartime conscription; the first use of peacetime conscription was in 1940, shortly before World War II. The nation had a volunteer force from 1946 to 1950, but Korea saw a return to conscription. Vietnam manpower policy was dominated by conscription to meet the needs of the Army; the needs of the other services and the reserve component were met largely with volunteers (though many of these were draft induced).

Figure 6.4 also shows how the size of both the active enlisted force and the population related to the use of conscription (shown in lightly shaded part of bar) over time. The nation has always used conscription when it required an active enlisted force larger than about 1.4 percent of the population, something that has occurred only during the four periods described above. Since 1973, when the last period of conscription ended, the population has grown and the active military has shrunk. Currently, the active force represents about 0.5 percent of the population. Using the 1.4 percent as a rule of thumb means that the need for an active force of above 3.7 million

would lead to conscription—a highly unlikely event in the foreseeable future. Also, conditions outlined below will most likely make the rule of thumb obsolete.

The lessons from this history are central to assessments about the future. However, the durability of these lessons cannot help but be affected by more-recent fundamental changes that must be incorporated into any synthesis of the future: the greater use of civilians and reserves, and the greater education and higher aptitude of the enlisted force.

Ongoing Revolutions: Composition, Characteristics, and Attributes

Several “revolutions” now under way have import for the future. The first of these stems from the total force policy, which was about using all the manpower resources of defense. This policy was implemented in 1971 but, as Figure 6.5 suggests, did not see its defining year until 1985—the first year in which Department of Defense (DoD) civilians

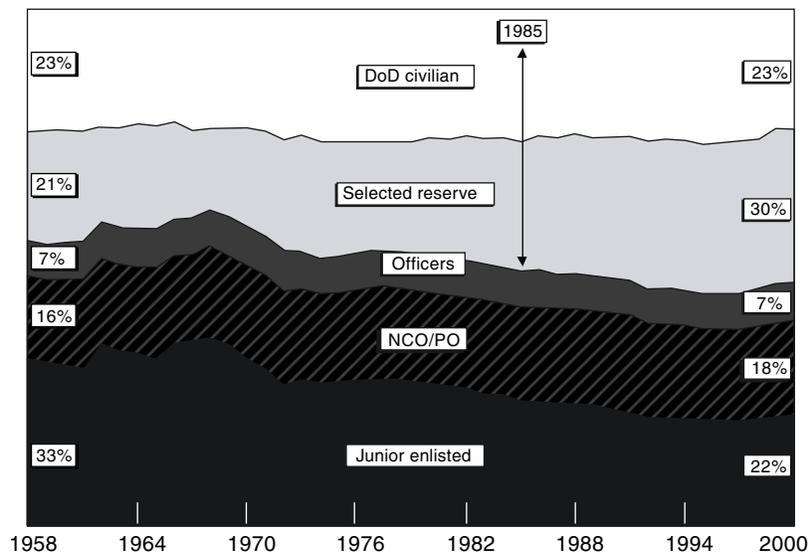


Figure 6.5—Defense Manpower Composition, 1958–2000

and selected reservists (Guard and Reserve), combined, outnumbered the active military. As of 2000, only 47 percent of total defense manpower has been active military. This is a fundamental change that needs to be central to thinking about the future stock of military human capital.

Another fundamental change took place within the active military. From 1958 on, active officers were a consistent 7 percent share of total defense manpower. However, in the enlisted category, noncommissioned officers (NCOs) and petty officers (POs) gained share—up to 18 percent of defense manpower. Civilians, reservists, and NCO/PO have, together, replaced junior enlisted (those in the grades of E1 to E4); the latter have dropped from one-third of all defense manpower in 1958 to about one-fifth in 2000. This follows directly from the changes in the nature of the military: work has become more complex and specialized, and more education and experience are required to do the work successfully.

Another dramatic change is the quality of the force. Questions remain about how best to measure quality and how much quality is really needed or affordable, given the fiscal constraints facing the military. During the post-Korean draft era and the early part of the all-volunteer force, quality (as measured by trainability) tended to be lower than it has been during the modern volunteer era. Once again, 1985 was a defining year. Figure 6.6 shows a revolution that has taken place within the enlisted force: as measured by the percentage in the highest three categories of training aptitude (Armed Forces Qualification Test [AFQT] Categories I–III), the current enlisted force, upon entry, has more ability than it ever had.

During the conscription period from 1952 to 1973, Army entrants typically had the lowest level of aptitude among all service entrants. In the early years of the all-volunteer force, aptitude levels fell significantly as the services, particularly the Army, struggled to recruit. The significant drop in the late 1970s was caused primarily by the entry test having been misnormed: the military was recruiting people who had less training aptitude than it thought. This situation changed significantly in the 1980s, with most services above 90 percent for the decade. And yet the real revolution happened in the 1990s, with all services at 97 percent and above beginning in 1991. Starting in 1985, there were 15 straight years in which at least 90 percent of all recruits

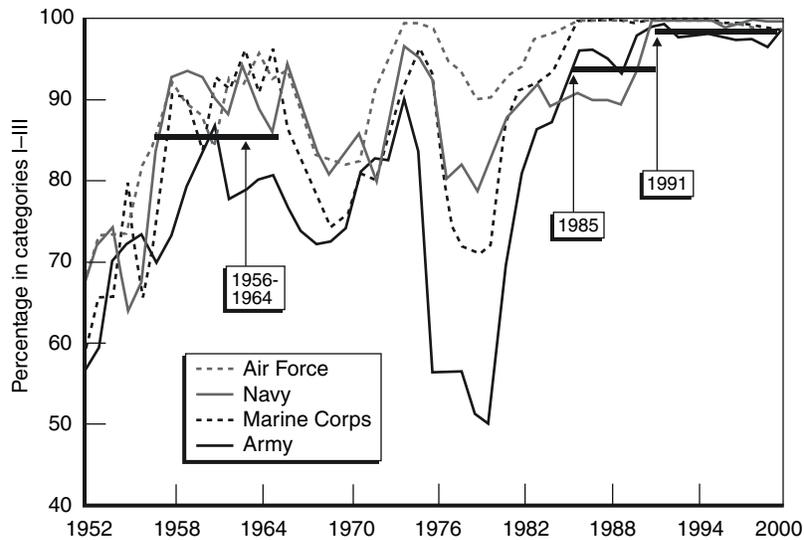


Figure 6.6—Percentage of Enlisted Accessions in Highest Three Training Aptitude Categories, 1952–2000

entering the services were in these three highest aptitude categories. And those who have entered since 1985 will make up over 95 percent of the enlisted force across all services by 2005. Where does this aptitude revolution lead? Virtually all NCOs/POs in the year 2010 (99.5 percent) will have entered since 1985. This highly trainable current and future force bodes well for those who emphasize the learning requirements of the future and the development of military human capital.

Hand in glove with the aptitude revolution is an education revolution. Officers have always been mostly college graduates, but NCOs and POs are now becoming more educated as well. In recent years, officer duties have devolved to NCOs and POs. Many types of work, from administration and paperwork to missile launching, have become sergeant and PO work—largely because of technology and a faster operational tempo. Aspects of this devolution of duties can also be seen in changing concepts of development. Training, a skill-based concept that results in an immediate ability to do certain tasks more proficiently, is slowly giving way to education as a knowledge-

based enlisted force increasingly becomes a necessity for successful performance.

The enlisted force is more highly educated than in any previous era. Figure 6.7 shows the proportion of grades E6 to E9 with at least some college education for three different time periods. Fiscal year 1972 represents a force that, while not necessarily conscripted, was shaped by conscription; fiscal year 1981 represents a force shaped additionally by the early years of the volunteer force; fiscal year 1996 represents a force almost exclusively the product of the volunteer era. The figure shows that, generally, the higher the grade, the higher the educational achievement. This figure and the earlier ones show that the proportion of college graduates grew over time as well as across all grades and occupations.

Figure 6.8 shows the data by occupation (aggregated for grades E6 to E9). Even in the general military occupational group, which is the group associated with Army and Marine Corps combat skills, the proportion with at least some college is much greater than was generally believed to be achievable in the era of a conscription-shaped enlisted force.

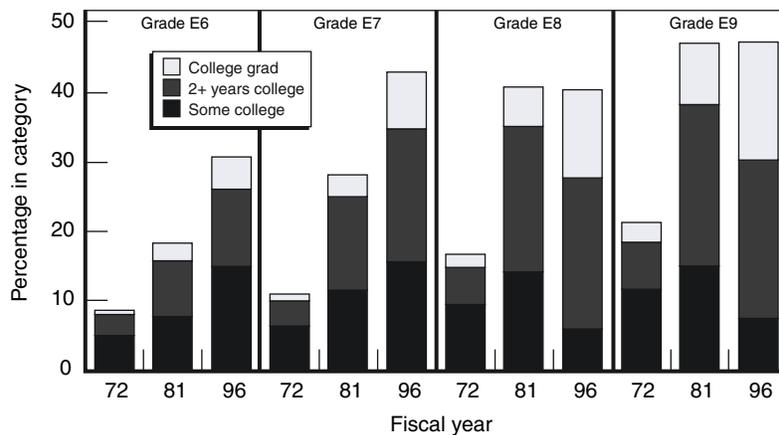


Figure 6.7—Educational Achievement for Grades E6 to E9, Selected Years

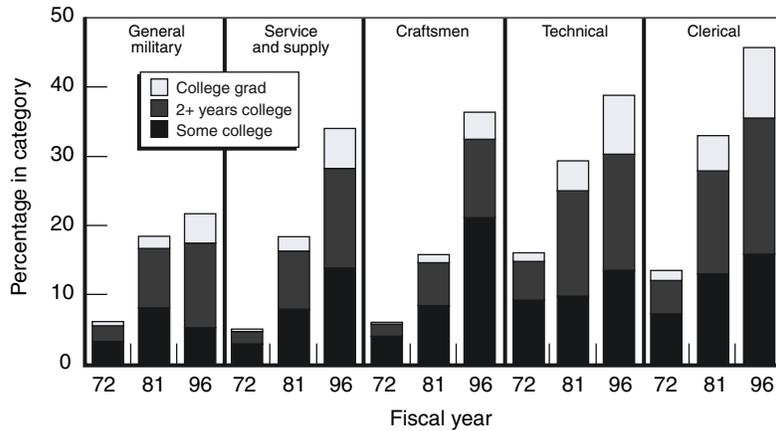


Figure 6.8—Educational Achievement for Grades E6 to E9, by Occupation, Selected Years

Looking to the Future

The near future is pretty much determined by the present and by recent history. Consider the most likely near future, in which the world of 2010 reflects today’s trends—e.g., (1) the large U.S. military shrinking in size, (2) known threats becoming varied threats, (3) the unitary mission of global conflict becoming diverse missions within an overall policy of selective and flexible engagement, (4) single missions for units becoming multiple missions for units, (5) variable hierarchies replacing the fixed organizational hierarchies, (6) advanced weapons becoming integrated systems and processes, and (7) a service focus in operational matters continuing to be replaced by a joint perspective. Some speculations about more-radical excursions based on size, organization, and technology follow.

In the broadest sense, the military does what the nation asks: all missions, against all enemies, as the oath requires. Yet not all missions have to be done full time in large numbers or in all types of functional units—a distinction that differentiates active from reserve. The future military will continue to wear uniforms and, in the words of a Navy admiral, “get shot at.” This differentiates the military from the defense civilian and contractor workforce (even given that the first casualty in Somalia was a defense civilian and the first in

Afghanistan was a CIA operative). The reduction of active military manpower as a proportion of all defense manpower is likely to continue. More reductions of direct defense manpower will occur as more contractors are used on and off the battlefield. Eventually, the manpower needs of the active military will be about one-third of a percent of the population, a level easily met by volunteers entering military service.

Officers “lead” in the broad sense of leadership. They set direction, align forces, and empower people. This differentiates the officer corps from the NCO and PO corps, which has evolved in its own right to be the force’s managers and technicians. The experience level of the enlisted force will continue to grow as NCOs and POs continue to displace junior enlisted. Moreover, junior officers who have been managers and technicians more than leaders will begin to be supplanted by educated and experienced enlisted technicians and managers. So far, with enlisted personnel acquiring more status, their work appears to be taking on more of the hallmarks of a profession and fewer of the hallmarks of a trade. As the edge in human capital enjoyed by junior officers over senior enlisted shrinks, many issues related to the scope of the latter’s responsibility, job design, status, and compensation become salient.

Two enduring characteristics—cognitive ability and conscientiousness—explain most variability in job performance. These characteristics are largely inherent in the individual and not easily changed later in life. People have them in varying levels when they enter organizations; one cannot develop, train, or educate for these characteristics except at the margin. Therefore, people have to be selected for them. The military has had and will continue to have a “select the best” strategy, expecting all entrants to be able to rise to the highest levels of responsibility. The military strives for a homogeneous entering group of high ability. As better measures of such characteristics as conscientiousness are found, the military will select for them as well. Neither all militaries around the world nor all organizations can afford such a strategy, however; instead, they select a mix of people with varied levels of these characteristics. But to get people with high levels of these characteristics, one must have appropriate selection and compensation instruments in place.

Occupational classifications derive from what work the military will be asked to do (its missions), how it structures itself to do the work (its organization), and the systems and processes it uses to accomplish the work (its technology). The competencies for military human capital change over time. Doctrine and theory for military and naval science and paradigms for leadership and management are not constants. Miniaturization, digitization, and other advances change needed military expertise. Tanks replace horses; steam replaces sail; turbines replace pistons. Is technology part of military knowledge and expertise? Certainly. Technology—how things are done—has always been part of the core knowledge of the military profession. Reskilling and upskilling will enter the lexicon of force management. The highly trainable and experienced enlisted force will be developed and redeveloped to ensure it possesses attributes critical to mission performance.

The military is likely to become smaller, more experienced, and more highly graded, with the percentage classified as general military or line category reaching a new low. These grade and skill percentages will vary by service, as they do now, but the differences will become more pronounced toward 2010. The military might evolve in a different way, however, because of varying size (smaller or larger), organizational change (outsourcing, streamlining, downgrading), and technology (user friendly or not user friendly). Based on the direction of change, the military can shrink or grow as well as compose itself of various skills and grades.

Whether military human capital will change depends on how change is defined. If it is defined as a succession of doctrinal and organizational changes in a constant-sized force, the manpower and personnel change will largely be one of composition, grade, and skill, with some manpower reductions because of productivity gains. However, if manpower is reduced to pay for new systems, what remains will be older, have a different mix of skills, and be forced to rely more on reserves and civilians. Either way, trends in manpower categorization, experience, and skill mix will be accelerated, but there will be no fundamentally new prospect.

In sum, this is what the future holds: the stock of military human capital needed will change, but in discernible directions. The active military will remain robust in size, but proportionally more defense

will be provided by civilians, contractors, and selected reservists. NCOs and POs will continue to displace junior enlisted and begin to supplant junior officers. Those who enter the active military will be selected on the basis of certain enduring characteristics, such as cognitive ability and conscientiousness, for which a good measure is needed. They will be well-trained and educated. Specific knowledge and other developed attributes will change as the core of professional knowledge and experience that all military personnel must have changes with mission, organization, and technology. It is likely that career management and compensation practices will need to change. It is not likely that a revolution in military affairs (RMA), reasonably defined, will alter such trends much, but it may accelerate them.

MANPOWER AND PERSONNEL ANALYSIS

To answer questions about planning a future force, one must decide on objectives, criteria, alternatives, and measures. Models and analytic techniques can be used to relate these four elements in useful ways and to draw out consequences and tradeoffs.

The Process

The analytic process begins with the front end (more art than science), in which the problem is identified and structured. The problem first has to be stated appropriately and clearly, at which point it becomes critical that the objectives be articulated so as to spawn more-precise criteria. What is the desired outcome? Almost all objectives deal with some variant of effectiveness or cost. One part of the front end entails devising a broad, creative range of alternative policies that can be evaluated. A large part deals with sorting out ends from means from alternatives from constraints. Constantly asking “why” helps to construct a hierarchy that allows for analysis to enter a structured picture.

In the second part of the process, the analytic middle (muddle?), science replaces the art of the front end. The science does not have to be complex; logic is often sufficient and may be adequately done on the back of an envelope. This analytic middle sorts through consequences: How well do alternatives meet criteria? Models, methods,

data, and qualitative assessments are brought to bear. Once the consequences of alternatives are known, tradeoffs can be made. Rarely are all objectives satisfied by one dominant alternative, so tough choices and compromises must be made when all objectives cannot be met at once.

Which objectives are more important than others? An alternative that provides more effectiveness at a lower cost is a no-brainer, but such an alternative is seldom found in the real world; and the reverse, less effectiveness at a higher cost, is seldom chosen. Alternatives that offer more effectiveness at a higher cost or a lower cost for less effectiveness or other possible combinations require hard thinking aimed at determining which alternative appears to best meet the ultimate objectives. Then, one must deal with uncertainties. What could change the assessed consequences? Specific cases can be examined or certain parameters can be judgmentally varied to see how the consequences and thus the conclusion might change. Last, what is the appetite for risk? Is it better to do nothing if there is no stomach to see the consequences through?

At this point, the back end of the analytic process is reached. Analyzing stops, and decisions or recommendations are made—which includes linking them to other problems and solutions in useful ways. Art and science give way to decision and judgment, a process that in the public sector, is not simply about selecting the “best” alternative for maximizing or minimizing criteria related to objectives, but involves consensus. What can the disparate stakeholders within DoD or across the executive and legislative branches agree to? What can be implemented?

The various parts of the manpower community go about their work differently. The personnel community, which seeks the best answer for the long term, studies the long-range, ideal effects of policy or changed parameters. This steady-state analysis applies constant rates and planning factors to see what happens in the steady state when all the transitional effects are settled out. Of course, no state is steady; transitional effects form a constant stream. But steady-state thinking is the best analytic tool for policy optimization.

The program and budget community, however, is more interested in the dynamic effects of a changed policy. What happens over a par-

ticular time horizon as rates and factors change successively? Not surprisingly, the five- to seven-year horizon of the program objectives memorandum (POM) process is frequently used. Models show the effects of policy choice projected out for about five years, but not beyond (the famous “straight-lined” from the fifth year). Program and budget analysts are more concerned with the immediate resource consequences than with long-term effectiveness issues.

And as for the managerial community, it is more interested in execution: How do we get to a chosen new policy over a period of time? What decisions have to be implemented and when if we are to gain the benefits and avoid the costs? Unfortunately, deciding on a course and implementing it are not one and the same, so tough choices often are not followed through on. The reality is a bewildering agglomeration of half-completed past policy implementations that confound not only the managerial community, but the personnel and program and budget communities as well. Personnel policy tends to accrete over time in marginal ways.

Choosing Among Alternatives, an Example

To illustrate the process just described, consider the following questions: How do specific changes in deployment, or personnel-related, policies and procedures affect

- Force readiness, particularly the availability of individuals and units for deployment?
- The level and distribution of operations tempo and its related stresses on units and individuals?
- Related outcomes, such as geographic stability, unit cohesion, and career-long job satisfaction and quality of life?
- Retention?
- Cost?

Concentrating on these questions helps in identifying objectives and alternatives—part of the front end of the process. Objectives—outcomes desired by the organization—are of extreme importance in decisionmaking. Although they are usually stated broadly, are usually poorly quantified, and may conflict with each other, their purpose is

to establish what the decisionmakers consider important. Here, seven objectives have been outlined: high readiness, high geographic stability, less force stress, high unit cohesion, acceptable quality of life and career satisfaction, high retention, and lower cost. Each objective has an associated directional modifier that is useful for clarifying what the decisionmaker means.

The next part of the front end involves making these broad objectives more precise—turning them into variables that can be measured on some scale or metric. This is part of the art of analysis. One or more variables are chosen to represent each entire objective statement. Some objectives (e.g., cost) present many measurement choices; others (e.g., quality of life) seem inherently unmeasurable given the state of the art. One needs to be clear about why the specific variables and measures were chosen, because they may be assailed by those who disagree with the conclusions reached.

Table 6.1 shows the variables and measures for the seven objectives in our example.

Table 6.1
Variables and Measures for Objectives

Objective	Variables and Measures
High readiness	SORTS P-status distribution; deployable-unit distribution
High geographic stability	Time-on-station distribution
Less force stress	DEPTEMPO distribution; time away from bunk
High unit cohesion	Cross-leveling amount
Acceptable quality of life/career satisfaction	Career deployment/assignment patterns
High retention	Continuation rates
Lower cost	Cost

NOTE: SORTS (Status of Readiness and Training System) uses a numerical assessment of personnel fill to get a calculated readiness status (e.g., P1, P2). DEPTEMPO is the tempo of deployments for a unit; time away from bunk is the tempo for individuals. (DoD is in the process of making these two terms more precise.) For unit deployments, units are frequently “cross-leveled” as deployable individuals are reassigned from nondeploying to deploying units.

The last piece of the front end of the analysis entails defining policy alternatives—i.e., courses of action that, if chosen, could change the measure of an objective. For this example, policy alternatives that might apply to an entire military service were outlined, as were policy alternatives that might apply to certain units within a service and to individuals. Tables 6.2, 6.3, and 6.4 show these three alternatives sets, respectively.

Table 6.2
Policy Alternatives Applicable to an Entire Military Service

Policy	Alternative
National military strategy	More deployments; fewer deployments
Reserve component use	More; less
Active/reserve force mix	More active; more reserve
Unit basing	More dispersed; more concentrated
Proportion of operating forces (TOE/TDA ^a ; ship/shore)	Higher; lower
Size of units	Larger formations; smaller formations
End strength	Higher; lower
Grade plan	Richer; leaner

^aTOE = table of equipment; TDA = table of distribution and allowance.

Table 6.3
Policy Alternatives Applicable to Units Within a Service

Policy	Alternative
Resourcing level	Higher authorizations; lower authorizations
Manning priority	Higher; lower
Tour lengths	48 months; 36 months; 24 months; 12 months
Assignment tenure limit	6 years; 5 years; 4 years
On-deck unit system	Yes; no
P-status deployment standard	P-1; P-2; P-3
Cohesion criteria	No cross-leveling; various percentages of allowed cross-leveling
Cross-leveling rules	Local units only; same theater units only; no restrictions
Deployment priority rules	Longest time since previous unit deployment; highest proportion of deployable people; highest readiness status

Table 6.4
Policy Alternatives Applicable to Individuals

Policy	Alternative
Tour extension incentives	Strong; weak; none
Cumulative annual deployment limits	210 days; 180 days; 150 days; 120 days; 90 days
Administrative deferments	More; less
Deployment deferments	6 months; 12 months; 18 months; 24 months
Reenlistment goals	Higher; lower
Retention control points (high year of tenure)	Earlier; later
Selective reenlistment bonuses	More; fewer

Once the front end portion of the process is finished, the middle portion begins, the purpose being to determine the consequences associated with the different alternatives. In what ways do the measures or criteria change as choices are made? Here, more formal techniques are introduced. Each analysis leads to its own methods for determining the consequences of the alternatives vis-à-vis the objective criteria. Because this sample analysis was complex, a formal simulation model was built to capture all of the complicated relationships among the objectives, alternatives, measures, and policies. Any given model will only capture a subset of all the possible relationships; doing more would take more time and effort.

Figure 6.9 shows the relationships that were modeled. The figure is highly detailed, to be sure, the point being to show that many variables affect other variables. Moreover, not all possible relationships are captured. The model is complex enough to represent all those that were captured.³

Like all good models, this one permits sensitivity analysis—i.e., it explicitly shows how the objectives would be affected if different alternatives were chosen. In this sample case, analysis ceased at this point, and a good decision dealing with uncertainties, risks, and implementation issues followed. This case dealt with broad objectives and large-scale alternatives; much of manpower and personnel

³This model was done in conjunction with a RAND colleague, Al Robbert.

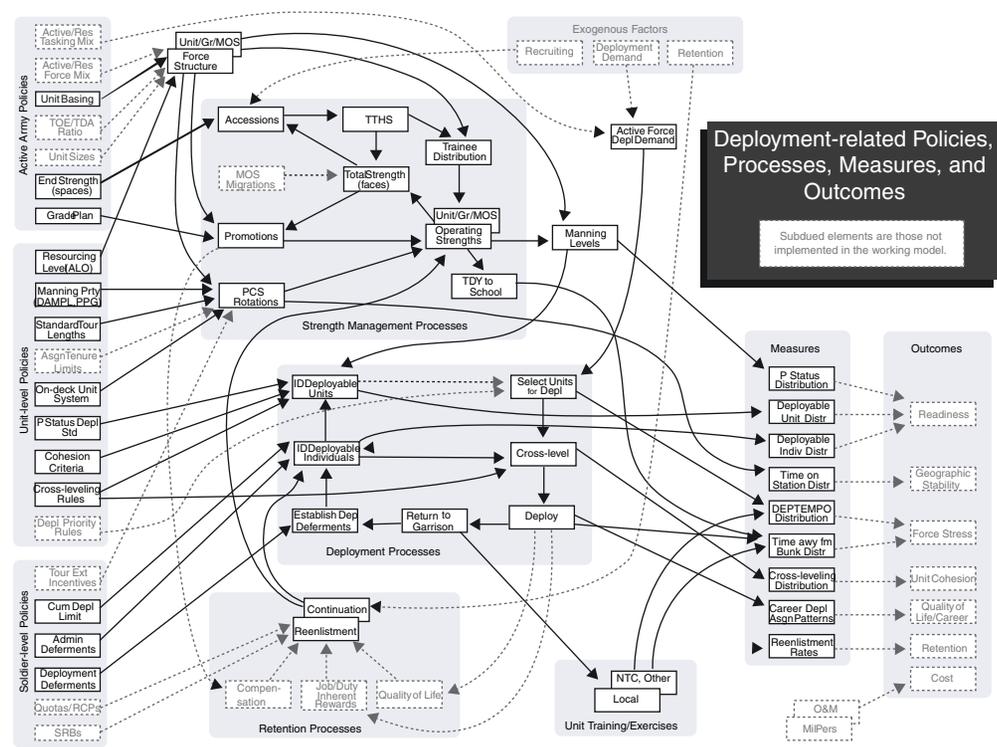


Figure 6.9—Model of Complex Relationships

analysis is narrower and more precise. While trends and broad forces do not change quickly, there is much to be learned by analyzing their impacts when seeking improvements to manpower, personnel, and training policies and processes that will increase military effectiveness and reduce costs.