
31 Selection and Classification in the U.S. Military

*Wayne S. Sellman, Dana H. Born,
William J. Strickland, and Jason J. Ross*

The quality of a military, or any workforce for that matter, depends upon the quality of its people. Successful attainment of military missions requires a force composed of dedicated, knowledgeable, and competent members. When an organization can hire persons with prior experience, an evaluation of past performance can serve as the primary criterion for selection and assignment into jobs. Other characteristics such as aptitudes and education assume less importance. However, when organizations hire young people without job experience, it becomes important to evaluate aptitudes, education, interests, and other characteristics known to predict success in jobs sought by the applicants.

The U.S. Department of Defense (DoD) is the world's largest employer of young people. Depending on personnel requirements, the DoD screens hundreds of thousands of youth for enlistment annually. During the late 1970s, the DoD screened approximately 1 million applicants each year; that number declined to "only" about 500,000 during the first years of the 21st century (Sellman, 2001). As noted above, the military's task in screening potential recruits is complicated by the fact that the available personnel pool is composed predominately of young men and women who have never held a permanent full-time job. Consequently, the services must depend mainly on indicators of potential performance such as aptitude and levels of education.

MILITARY PERSONNEL SYSTEM

At its most basic division, the military separates its personnel into two or three categories: enlisted personnel, commissioned officers, and (for all services except the Air Force) warrant officers. Each military service uniquely recruits, trains, and professionally develops its members.

Comprising approximately 85% of the entire military, the enlisted force consists of (a) the basic level (e.g., entry-level soldiers, sailors, airmen, or marines), (b) noncommissioned officers and petty officers (NCOs), and (c) senior noncommissioned officers and senior petty officers (Senior NCOs). These levels correspond to different levels of experience, training, education, and leadership. Individuals at the basic level have typically just entered the military, are in training, or have achieved initial competency in their occupational specialties. NCOs are technical experts in their primary jobs and serve as first-line supervisors, who teach, train, and supervise basic-level personnel. Finally, Senior NCOs are seasoned individuals who have experienced a myriad of technical jobs, held numerous first-line supervisory positions, and have performed at a higher level than many of their contemporaries.

Commissioned officers are the senior leadership and management of the military. Similar to the enlisted force, the commissioned officer force is divided into three subgroups: (a) company-grade officers, (b) field-grade officers, and (c) general or flag officers. Company-grade officers are the

military's action officers and are largely involved in the tactical level of the military organization. Field-grade officers typically fill many operational-level positions and most command and staff assignments. Lastly, the general or flag officers are the service executives and are primarily engaged in strategic, policy-making decisions that affect the organization in the long-term.

There are four principal paths that can be taken to become a commissioned officer. Two of the primary officer commissioning programs, the service academies and the Reserve Officers Training Corps (ROTC), are administered in conjunction with an individual's undergraduate academic studies. The two remaining principal commissioning programs, Officer Candidate/Training School (OCS/OTS) and Direct Commissioning, are designed almost exclusively for individuals who already possess at least a baccalaureate degree (U.S. Department of Defense, 2006).

Creating a new officer through either the service academies or ROTC is a 4-year process. The services use OCS/OTS as a source for a specific portion of their new officers annually. In addition, in times of growth, OCS/OTS provides a quick-reaction surge capability that the longer-term programs cannot match. Direct commissioning is normally reserved for people with professional credentials (e.g., physicians, attorneys).

With the sole exception of the Air Force, the Army, Navy, and Marine Corps have warrant officers who fill highly specialized leadership positions. Unlike their commissioned officer counterparts whose experiences are broad and service-encompassing, warrant officers are employed in positions that require highly specialized technical or tactical skills (e.g., helicopter pilots). Selection as a warrant officer is highly competitive and only available to those who meet rank and length-of-service requirements in the enlisted force.

Distinct from the civilian sector, the military is a completely closed personnel system; this means that the services fill personnel vacancies with members already employed within their ranks. American military leaders are "grown" from the junior ranks; the services do not hire military individuals to enter mid- or senior-level ranks. Because it takes years to successfully replace a member who leaves the military, attracting officer and enlisted candidates is a high priority for military policy-makers. Selecting the correct number of high-quality individuals each year is essential to sustain a flow of seasoned leaders for the future.

Table 31.1 shows the names of the officer ranks as well as the number of officers in each service as of December 31, 2007. The rank structure is analogous to a pyramid, with junior individuals serving as the base of the pyramid and outnumbering those individuals in the increasingly senior ranks. The table also shows the same information for the enlisted ranks (highest is E-9 and the lowest is E-1) but does not identify them by name because each service uses its own nomenclature.

Within the services, there are literally hundreds of military occupations. Although many are similar to civilian jobs, there also are large numbers of occupations that are unique to the military. The services categorize the plethora of job specialties into several broad occupational areas as shown in Tables 31.2 and 31.3. Because of the large number of military enlistees (about 350,000 annually in the active and reserve components) who must be assigned into a large number of military occupations, the services, unlike most civilian employers, must be proficient at job classification as well as personnel selection. However, classification to military occupations depends on eligibility, individual preference, and availability of openings (U.S. Department of Defense, 2006b; Campbell & Knapp, 2001). With an enormous diversity of occupations, a vast number of openings at specific positions, and a variety of individual skills, the challenge of classification is appreciable.

INDICATORS OF RECRUIT QUALITY

The DoD and the services use aptitude and educational achievement as indices of recruit quality (Sellman, 1997; Sellman & Valentine, 1981). These "quality" indices are used in lieu of evaluating past work experience—a criterion that rarely exists for military applicants, who are for the most

TABLE 31.1
U.S. Department of Defense Current Officer, Warrant Officer,
Enlisted, and Cadet/Midshipmen Numbers by Service^a

Rank/Grade—All	Services				Total
	Army	Navy	Marine Corps	Air Force	
General-Admiral	11	11	3	15	40
Lieutenant General-Vice Admiral	52	34	15	31	132
Major General-Rear Admiral (U)	92	69	27	95	283
Brigadier General-Rear Admiral (L)	151	110	40	146	447
Colonel-Captain	4,084	3,128	699	3,385	11,296
Lieutenant Colonel-Commander	9,127	6,713	1,842	9,928	27,610
Major-Lieutenant Commander	15,436	10,324	3,633	14,723	44,116
Captain-Lieutenant	25,006	17,061	5,572	22,418	70,057
1st Lieutenant-Lieutenant (JG)	6,862	5,975	2,812	7,565	23,214
2nd Lieutenant-Ensign	9,944	6,239	3,019	7,104	26,306
Chief Warrant Officer W-5	456	61	84		601
Chief Warrant Officer W-4	2,382	257	268		2,907
Chief Warrant Officer W-3	3,369	780	531		4,680
Chief Warrant Officer W-2	4,493	503	758		5,754
Warrant Officer W-1	3,233		232		3,465
Total officers	84,698	51,265	19,535	65,410	220,908
E-9	3,580	2,844	1,555	2,688	10,667
E-8	11,498	7,122	3,591	5,148	27,359
E-7	39,119	23,632	8,121	26,112	96,984
E-6	61,332	49,654	13,725	43,209	167,920
E-5	81,674	68,861	28,351	69,288	248,174
E-4	118,117	51,928	37,147	52,330	259,522
E-3	63,316	43,855	38,170	47,348	192,989
E-2	33,037	18,193	19,867	6,397	77,494
E-1	21,327	14,476	16,147	10,340	62,290
Total enlisted	433,300	280,565	166,674	262,860	1,143,399
Cadets-midshipmen	4,390	4,384	0	4,393	13,167
Grand total	522,388	336,214	186,209	332,663	1,377,474

^a The most recent figures for this table can be obtained from the website noted in the source line below.

Source: Adapted from <http://siadapp.dmdc.osd.mil/personnel/MILITARY/rg0712.pdf>

part recent high school graduates. For enlisted selection and classification, the Armed Services Vocational Aptitude Battery (ASVAB) is the single test used to determine enlistment eligibility of applicants for the Army, Navy, Air Force, and Marine Corps as well as their respective reserve components. In addition, ASVAB is used to assign successful applicants to military occupations. Although a part of the U.S. Department of Homeland Security, the Coast Guard also uses ASVAB for personnel selection and job classification.

ASVAB is administered in computer adaptive and paper-and-pencil versions (Sands, Waters, & McBride, 1997). The computer adaptive version is administered to about 70% of applicants at 65 Military Entrance Processing Stations across the country. The remaining 30% of applicants receive the paper-and-pencil form at 650 remote, satellite testing sites (Sellman, 2004).

ASVAB is a battery comprising ten tests that measure verbal, mathematics, and science/technical skills and knowledge. The Armed Forces Qualification Test (AFQT), a composite of ASVAB tests, measures verbal (word knowledge and paragraph comprehension) and mathematics (arithmetic

TABLE 31.2
FY2006 Active Component Enlisted Corps by Occupational Area and Service

Gender	Occupational Area											Total
	Infantry, Gun Crews, and Seamanship	Electronics	Communications	Medical	Technical	Administrators	Electrical	Craftsman	Supply	Nonoccupational ^a		
Army	110,778	23,649	49,199	34,208	15,626	59,520	58,472	9,300	56,642	2,771		420,165
Navy	24,605	35,817	26,147	25,185	2,752	35,698	86,549	17,362	21,000	17,988		293,103
Marine Corps	39,982	10,187	11,626	0	4,129	25,016	25,561	3,870	18,786	22,120		161,277
Air Force	27,945	23,970	23,434	20,688	11,083	56,331	64,963	11,765	13,939	19,872		273,990
DoD total	203,310	93,623	110,406	80,081	33,590	176,565	235,545	42,297	110,367	62,751		1,148,535

^a Nonoccupational includes patients, students, those with unassigned duties, and unknowns.

TABLE 31.3
FY2006 Active Component Officer Corps by Occupational Area and Service

Service	Occupational Area										Total
	General Officers	Tactical Operations	Intelligence	Engineering and Maintenance	Scientists and Professionals	Health Care	Administration	Supply, Procurement, and Allied	Nonoccupational ^a		
Army	318	23,515	4,582	10,592	5,082	14,043	4,776	5,894	808		69,610
Navy	225	20,458	2,183	5,049	2,102	10,033	2,267	2,518	5,574		50,409
Marine Corps	83	8,343	848	1,345	454	0	982	2,115	2,272		16,442
Air Force	287	23,856	3,859	10,952	4,628	11,153	4,666	6,026	4,746		70,173
DoD Total	913	76,172	11,472	27,938	12,266	35,229	12,691	16,553	13,400		206,634

^a Nonoccupational includes patients, students, those with unassigned duties, and unknowns.

Source: U.S. Department of Defense, Office of the Under Secretary of Defense for Personnel and Readiness, Population representation in the military services FY2006, Washington, DC, 2008.

reasoning and mathematics knowledge) abilities. AFQT¹ is the primary enlistment screen for all services and is the DoD's first index of recruit quality. The tests of science/technical knowledge include general science, electronics information, mechanical comprehension, auto information, shop information, and assembling objects.

On the basis of statistical validity analyses, the services combine the various ASVAB tests into "aptitude area" composites, which are used to assign new recruits to military occupations. Each service computes and uses its own set of composites for job classification giving each service a degree of flexibility to stipulate the necessary skills required to fill each job position (Diaz, Ingerick, & Lightfoot, 2004; Lightfoot, Diaz, Heggstad, Darby, & Alley, 1999; Rumsey, Walker, & Harris, 1994; Waters, Laurence, & Camara, 1987). Although there has been some research to explore the relationship between AFQT and service composite scores and performance in the second term of enlistment (generally from 4 to 8 years of service), ASVAB validity is usually established using entry-level training or first-term job performance as criteria (Oppler, McCloy, & Campbell, 2001).

Such service differences in composites make sense, even for what appear to be virtually identical occupations (e.g., electronic repair specialists, motor mechanics, cooks, supply technicians, clerks). The services have distinctly different functions that affect their need to fulfill their respective missions. For example, the Army and Marine Corps have extensive ground combat responsibilities that are quite different from most Navy and Air Force activities. Certainly, a ship's environment is very different from that of an aircraft or tank. Consequently, for what is ostensibly the "same" job, the particular equipment used by personnel in the different services may dictate a different mix of abilities (Waters et al., 1987).

ASVAB is normed against a nationally representative sample of young people ages 18–23 years old tested in 1997 as part of the Bureau of Labor Statistics' National Longitudinal Survey of Youth (Segall, 2004). Such norms allow the comparison of applicant and recruit aptitude levels with those of the contemporary civilian youth population from which they come. AFQT scores are expressed on a percentile scale and grouped into five categories for reporting purposes. Table 31.4 shows the percentile score ranges and percent of civilian youth that correspond with each AFQT category. Persons who score in Categories I and II tend to be above average in cognitive ability; those in Category III, average; those in Category IV, below average; and those in Category V, markedly below average. (Category III is divided at the 50th percentile into subcategories A and B. This facilitates reporting the proportion of scores above and below the mean of the AFQT distribution.) By law, Category V applicants and those in Category IV who have not graduated from high school are not eligible for enlistment.

The best single predictor of successful adjustment to military life is possession of a high school diploma. Consequently, the services also value recruits with high school diplomas because they are more likely to complete an initial tour of duty than are enlistees with alternative credentials or non-graduates. About 80% of high school diploma graduates complete their first 3 years of service, compared to only 50% of high school dropouts (U.S. Department of Defense, 1996). Completion rates for enlistees holding an alternative credential such as a General Education Development (GED) certificate fall in between the high school diploma graduate and nongraduate rates (Elster & Flyer, 1981; Flyer, 1959; Laurence, 1984, 1997). Thus, educational achievement is the DoD's second index of recruit quality.

Over the past 25 years, there has been a proliferation of education credentials in the United States. In addition to earning a regular high school diploma, young people can receive credentials through adult education programs and home schooling, through experiential learning, and by taking high school equivalency tests. The DoD uses a three-tier system to classify education credentials. The system was developed after research indicated a strong relationship between level of education

¹ The AFQT, as either a stand-alone test or a composite of ASVAB tests, has been in use for personnel selection since 1950. Although its content has changed somewhat over the years, the AFQT has always been a measure of "g" with verbal and math components.

TABLE 31.4
AFQT Categories by Corresponding Percentile Score Ranges
and Percentage of Civilian Youth Population

AFQT Categories	Percentile Score Range	Percentage of Civilian Youth
I	93–100	8
II	65–92	28
IIIA	50–64	15
IIIB	31–49	19
IV	10–30	21
V	1–9	9

and successful completion of the first term of military service (Laurence, 1997; U.S. Department of Defense, 1996). Tier 1 includes regular high school diploma graduates, adult diploma holders, and nongraduates with at least 15 hours of college credit. Tier 2 comprises alternative credential holders such as those with GED diplomas or certificates of completion or attendance, and Tier 3 is composed of non-high-school graduates.

The services prefer to enlist people in Tier 1 (high school diploma graduates) because they have a higher likelihood of completing a first term of service than do individuals in Tiers 2 and 3 (e.g., GED holders or high school dropouts). Consequently, education standards refer to the application of progressively higher aptitude test score minimum requirements for high school diploma graduates, equivalency credential holders, and nongraduates, respectively (Laurence, 1984). The rationale for this policy is based on the differential attrition rates of these three education groups. That is, members of Tiers 2 and 3 are about twice as likely to leave service prematurely as those in Tier 1. Higher aptitude requirements for Tiers 2 and 3 are used to accept only the “best” from the statistically less successful and thus less preferred group of applicants (U.S. Department of Defense, 1996).

NEED FOR MILITARY SELECTION

Military recruiting is a supply and demand phenomenon (Sellman, 1998, 1999) that is influenced by the costs of recruiting qualified individuals for enlistment. When recruiting prospers, the services raise their enlistment standards. When times are bad, the services sometimes lower their standards and allow services to access² somewhat lower-quality recruits to enter the service; thus, allowing the services to meet their recruiting goals. Military recruiting, assignment, and training of young, unskilled people is an investment; the underlying purpose of the personnel selection and job classification process is to reduce the risk that an investment will be made in persons who are unable (or unwilling) to perform their duties. There also are costs associated with recruit quality levels; it is more difficult and costly to recruit high-quality youth (high school graduates with above average aptitude) than their lower-quality peers. Thus, recruit quality standards directly influence recruiting resource requirements (Sellman, 1999).

Once admitted into service, recruits are expected to progress through training, to perform their duties competently, and to observe military order and discipline. Unfortunately, not all enlistees get through basic training and job skill training and, even for those who do, not all manage to avoid disciplinary problems. Still others may play by the rules but may perform well below par on the job for reasons not related to low aptitude but rather to lack of motivation. The consequences for substandard performance may include slow promotion progress, reassignments, various forms of punishment from reprimands to incarceration, and in many cases an early exit from service.

² “Access” is a term used by the U.S. military to indicate “entrance” into service. Thus, an “accession” is an entering service member.

The most analyzed indicator of maladjustment to the military is first-term attrition, the failure to complete an obligated period of service. According to the U.S. Government Accountability Office (GAO), it cost \$40,000 in 1997 to replace (recruit, train, and equip) each individual who failed to successfully complete a first tour of duty (U.S. Government Accountability Office, 1997). Given the substantial increase in recruiting resources associated with recruiting challenges brought on by the war in Iraq, today that number is considerably higher (Stewart, 2005). There also are non-pecuniary or indirect costs, which include force instability, lowered morale, and lack of readiness. Individuals also may pay a personal price: Failure in military service may significantly affect their future employment opportunities and earning potential. Consequently, it is in the interest of recruits and the services to reduce first-term attrition (Strickland, 2005).

Attrition of newly commissioned officers during their initial service commitment is generally not a problem; however, officer retention beyond that initial service commitment is a constant concern. Because a service academy education represents a substantial investment (with cost estimates ranging as high as \$403,000 per graduate), the services need many of those officers to remain in service far past their initial obligation.

SHORT HISTORY OF MILITARY PERSONNEL TESTING (PRE-ALL VOLUNTEER FORCE)

Although current testing methods are codified into U.S. law today, these testing methods have not always been in place. Because of the advent of new weaponry in World War I (tanks, airplanes, chemicals, etc.), the American military started using tests to screen people for service and assign them to a military occupation. In 1917–1918, the Army Alpha and Army Beta tests were developed so commanders could have some measure of the ability of their men (Waters, 1997). The Army Alpha was a verbal, group-administered test that measured verbal ability, numerical ability, ability to follow directions, and information. The Army Beta was a nonverbal, group-administered counterpart to the Army Alpha. It was used to evaluate the aptitude of illiterate, unschooled, or non-English speaking inductees (Yerkes, 1921). Both tests are recognized as prototypes for subsequent group-administered cognitive ability tests.

Rising from the Army Alpha and Beta tests' foundations, the Army General Classification Test (AGCT) of World War II replaced its predecessors. The AGCT's intent was similar to the Alpha and Beta tests in that it was designed to be a general learning test used for job placement. Although it served the services successfully throughout the World War II years, at the war's conclusion, each service developed its own aptitude test for service entry. Eitelberg, Laurence, and Waters (1984) noted, "Though different in structure, primarily with respect to qualifying scores, the service tests were essentially the same with respect to content area, relying on the time-honored items of vocabulary, arithmetic, and spatial relationships."

In 1950, the military returned to a single test, the AFQT, to be used in conjunction with the Selective Service System draft. The AGCT served as the AFQT's model in which the AFQT measured basically the same variables as the AGCT and the previous Army Alpha and Beta tests; however, contrary to the previous tests, the AFQT was specifically designed to be used as a screening device (Karpinos, 1966). Thus, the AFQT was established for the purpose of (a) measuring examinees' general ability to absorb military training and (b) providing a uniform measure of examinees' potential usefulness in the service, if qualified, on the test (Maier, 1993; Uhlaner & Bolanovich, 1952).

MOVING TO AN ALL-VOLUNTEER FORCE

Throughout most of American history, the U.S. military has been composed of volunteers. However, conscription was the primary means of obtaining military personnel during World Wars I and II and the Korean Conflict to the point that its renewal became perfunctory. The decision to move to an

all-volunteer military evolved from criticism of the inequities of conscription during the Vietnam War—who shall serve when not all serve? In the late 1960s, President Richard Nixon established a commission to develop a comprehensive plan for eliminating conscription and moving toward an all-volunteer force. The commission built a case for a volunteer military by pointing out the unfairness of conscription, establishing the feasibility of a volunteer force on economic grounds, and refuting all major arguments against ending conscription and relying totally on volunteers (Lee & Parker, 1977; Gates, 1970).

The commission believed that sufficient numbers of qualified youth could be persuaded to volunteer by increasing military pay to levels more competitive with civilian wages. They disputed claims that total reliance on volunteers would lead to a mercenary force consisting mainly of minorities, the poor, and the uneducated, and loss of civilian control. After much debate within the Administration and Congress and across the country, it was decided that an all-volunteer force was feasible, affordable, and would not jeopardize the nation's security (Rostker, 2006; Defense Manpower Commission, 1976). Thus, the authority for conscription was allowed to lapse on July 1, 1973, and the last conscript entered the Army in December 1972.

With adequate resources and support to attract and retain the brightest personnel, conscription is not needed to meet future military personnel requirements (Bicksler & Nolan, 2006). An all-volunteer force is more expensive than a conscription force in terms of military compensation and funds for advertising and enlistment incentives. However, a voluntary military is less expensive in overall costs (Fredland, Gilroy, Little, & Sellman, 1996; Lee & McKenzie, 1992; Warner & Asch, 1996). It is more stable and career-oriented, thereby leading to extra performance and experience with reduced training and other turnover costs (Oi, 1967). During conscription, 10% of new inductees reenlisted; today's new recruits reenlist at a 50% rate (Rostker, 2006). In short, military service is an economically rational choice for high-quality men and women looking for an edge on life. The military also is a good choice for people who want to serve a greater cause (Bicksler, Gilroy, & Warner, 2004).

During the first years of the all-volunteer force, the AFQT was used to identify individuals who had a reasonable probability of success in service, and other service-specific tests were required for job classification. The Army Classification Battery, the Navy Basic Test Battery, and the Airman Qualifying Examination, just to name a few, were used from the late 1950s to the mid-1970s (Waters, 1997). During this period, the AFQT was administered to military applicants (including draft inductees) at Armed Forces Examining and Entrance Stations (AFEES) across the country for selection purposes. Because women were not subject to the draft, a different aptitude test was used for female applicants for enlistment. The Armed Forces Women's Selection Test was administered to female applicants in lieu of the AFQT from 1956 to 1974. If individuals successfully "passed" the AFQT and were accepted for service, they were sent to basic training, although the specific occupation to which they would be assigned had not yet been determined. During basic training, new enlistees were administered their service's classification tests and were assigned to their appropriate military occupations.

During the mid-1970s, DoD determined that a single test that measured aptitude and job placement was to be used, resulting in the development and implementation of the ASVAB, which is still in use today (Sellman & Valentine, 1981). The ASVAB's creation and implementation enabled DoD to successfully screen applicants, match applicants with job positions, reserve job skill training for applicants if they qualified, and provided a uniform standard measure on which all applicants across the board could be ranked. This was a departure from previous procedures when selection testing was conducted at AFEES during the entrance process (for either enlistment volunteers or draft inductees) and classification testing was accomplished at service basic training centers preparatory to assigning new enlistees to military occupations and sending them for job-skill training.

By combining selection and classification testing at the AFEES, the testing process was to be made more expedient for the newly implemented all-volunteer military. Young people volunteering for enlistment would take one test and come away from the AFEES knowing not only if they qualified for enlistment, but, if qualified, also the military occupation to which they would be assigned.

Thus, the new testing process enabled the services to improve the matching of applicants with available occupations before they actually reported for duty and allowed job guarantees for individuals qualified for enlistment.

With the end of conscription and the advent of the all-volunteer force, there has been a significant change in the composition of new recruit cohorts (Sellman, Carr, & Lindsley, 1996). The percentage of female accessions has more than tripled, rising from 5% in 1973 (Goldman, 1973) to approximately 17% in 2006 among nonprior service members (Manning & Griffith, 1998; U.S. Department of Defense, 2008). Although the services have increased their proportions of women, youth propensity polls indicate that young women are still approximately 50% less likely to indicate an interest in joining the military than are young men (Ramsberger, 1993; Sackett & Mavor, 2004; U.S. Department of Defense, 2008).

The percentage of Black enlisted accessions also rose, with some fluctuation, following the end of the draft (MacGregor, 1981). Increases in the proportion of Black accessions coincided with the ASVAB misnorming, which led to erroneous enlistment of many low-scoring applicants. Thus, representation of Blacks—whose test scores are generally lower than those of Whites—increased during the misnorming period. In the early 1980s, revised standards corrected the ASVAB scoring error. As young Black men and women increasingly viewed the military as an opportunity for upward mobility, a gradual increase in Black accessions ensued through the early 1990s. Participation for active component Black enlisted has remained relatively stable at around 20% into the 21st century (U.S. Department of Defense, 2008).

Hispanics make up a much smaller but growing proportion of the military services than Blacks. Enlisted Hispanics comprised just over 1% in the early 1970s, but by the late 1980s, that percentage had increased to nearly 5%. There has been a steady increase in enlisting men and women of Hispanic descent ever since. However, with 11% of active duty enlisted members counted as Hispanic in 2006, this group remained underrepresented relative to the growing comparable civilian population (17%) (U.S. Department of Defense, 2008).

ASVAB MISNORMING AND JOB PERFORMANCE MEASUREMENT PROJECT

In 1980, the DoD announced that the ASVAB in use since 1976 had been misnormed with the result that scores in the lower ranges were artificially inflated (Jaeger, Linn, & Novick, 1980; Boldt, 1980; Maier & Grafton, 1980; Sims & Truss, 1978, 1979, 1980). In other words, in developing norms for the ASVAB, an error was made in the sample and method used to convert raw scores to percentile scores. As a result, approximately 360,000 young men and women, who had entered service during the period 1976–1980, would have been unable otherwise to meet enlistment standards (Eitelberg, 1988). About one out of every four male recruits across all services in those years would have been disqualified under the aptitude standards the services intended to apply. Black young men appear to have been the biggest beneficiaries of the misnorming. Over 40% of Black recruits during this period had test scores that ordinarily would have kept them out of the military. Hispanics, too, benefited greatly from the misnormed ASVAB. Almost 33% would have been considered ineligible under the correct aptitude standards (Eitelberg, 1988). The quality of Army recruits fell to an all-time low during this period, even lower than during the period of heavy mobilization for World War II (U.S. Department of Defense, 1985).

The ASVAB misnorming episode turned out to be a natural experiment with large numbers of new recruits entering service “unselected.” The misnorming presented a unique opportunity to study, on a large scale, the validity of selection standards in an unrestricted population. The people who were admitted to the military with aptitude scores below the cut-off points were assumed by their supervisors to have had scores above the enlistment standards. Individuals with legitimately qualifying scores did appreciably better than their lower-scoring peers in terms of training performance, promotions, disciplinary problems, and attrition. At the same time, the low-aptitude recruits were able to successfully perform in low- and medium-demand occupations (Greenberg,

1980; Means, Nigam, & Heisey, 1985; Shields & Grafton, 1983). As a consequence of the misnorming, members of Congress and policy-makers in DoD became interested in the methods used to set enlistment standards and to establish recruit quality requirements.

In the congressional view, the fact that the ASVAB traditionally had been validated against success in training rather than on-the-job performance was potentially problematic. Supporting studies regarding the relationship between recruit quality and military performance lacked persuasive power because proxy measures (e.g., attrition, promotion rates, or reenlistment eligibility) were used rather than actual measures of job performance. Congressional scrutiny of the ASVAB misnorming and surrounding issues of recruit quality and entry standards led to the Joint-Service Job Performance Measurement/Enlistment Standards Project—hereafter referred to as the JPM Project.

The JPM Project comprised three phases: (a) determine the feasibility of measuring hands-on job performance; (b) if feasible, validate ASVAB against on-the-job performance; and (c) develop an enlistment standards cost/performance trade-off model that linked recruit quality, recruiting resources, and job performance. The overall project strategy called for each service to develop and demonstrate various job performance measurement approaches that could be used to link enlistment standards to job performance (U.S. Department of Defense, 1991; Wigdor & Green, 1986, 1991).

Each service developed and demonstrated hands-on job performance measures in several military occupations. These job performance measures were used to evaluate certain surrogate measures of performance (less expensive, easier to administer tests or existing performance information) as substitutes for the more expensive, labor-intensive, hands-on job performance tests (Armor & Roll, 1984; Green, Wing, & Wigdor, 1988). The performance tests consisted of tasks selected from the domain of tasks in selected military occupations, on which examinees (job incumbents) were evaluated. These measures were designed to replicate actual job performance yet provide objective evaluation of the performance demonstrated.

Integration of the different service research efforts into a joint service product was accomplished through development of a common data analysis plan. These analyses (a) described the distributions of hands-on performance test scores, aptitude scores, job experience, and educational attainment; (b) assessed the reliability of the hands-on performance test scores; and (c) measured the degree of relationship (i.e., correlation) between the performance test scores and other variables of interest.

These tests were administered to 8,000 incumbent, first-term soldiers, sailors, airmen, and marines assigned to 24 different occupations (U.S. Department of Defense, 1991). The occupations were selected to be representative of all military occupations, with large numbers of recruits entering job skill training (McCloy, 1994). The examinees averaged 25.1 months in service, and the average AFQT score was 55.1 on a 100-point percentile scale (U.S. Department of Defense, 1991).

The average reliability coefficient for the performance tests across all 24 occupations in the JPM Project was .72 (U.S. Department of Defense, 1991). The measures of reliability showed an acceptable degree of consistency in the performance test scores, and the services believed that those scores reflected that a reliable benchmark measure had been developed against which to compare the various surrogate measures of job performance (U.S. Department of Defense, 1991). Those surrogate measures could be used in subsequent selection and classification research.

The correlation between AFQT and hands-on performance tests, corrected for restriction in range, yielded an average validity coefficient of .40 (U.S. Department of Defense, 1991). This level of validity is of interest because the AFQT is a test of general aptitude, whereas the performance test scores reflected observable performance in different types of occupations. Thus, the JPM project established the link between measured aptitude for performing a job and the demonstration of doing it. Considering the nature of the performance test criterion, a validity coefficient of .40 compared well with other military validity studies (Armor & Sackett, 2004).

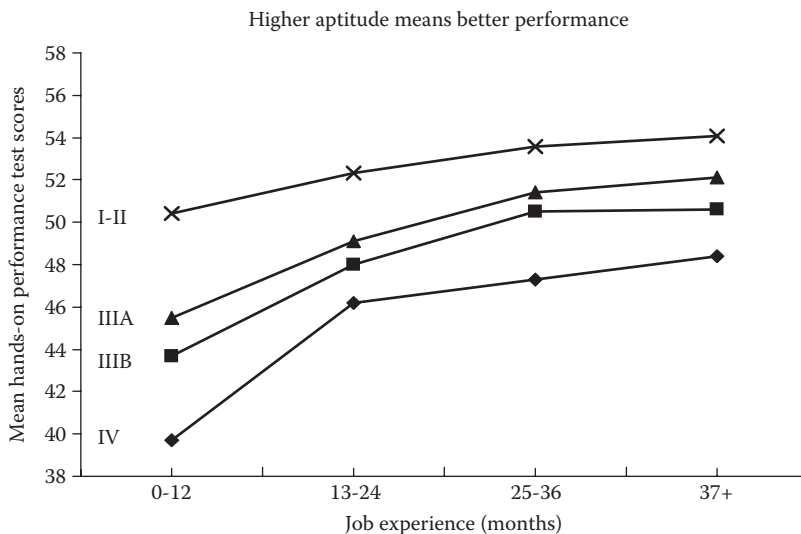
The job performance measurement research performed by the services provided performance measures that closely replicated actual job performance. Rather than assessing, via a paper-and-pencil test, what enlisted personnel might know about calibrating a piece of precision avionics equipment or operating a weapon's targeting system, the services were able to assess how well

enlisted job incumbents did such tasks. Although the two are related, knowledge about a job is not the same thing as being able to do the job. Typically, the (corrected) validities of military aptitude tests for predicting training success or supervisor ratings have ranged between .30 and .60 (Hartigan & Wigdor, 1989).

Research shows a strong relation between ASVAB (including AFQT) scores and success in military job skill training and hands-on job performance across a range of occupations (Campbell, 1990; Claudy & Steel, 1990; Dunbar & Novick, 1988; Earles & Ree, 1992; Holmgren & Dalldorf, 1993; Hunter, Crosson, & Friedman, 1985; Mayberry & Carey, 1997; Welsh, Kucinkas, & Curran, 1990; Wigdor & Green, 1991). The services value recruits with above-average aptitude because they are more trainable and their job performance is superior to that of their lower-scoring peers. Even with on-the-job experience, enlistees with lower aptitude continued to lag behind those with higher aptitude. As is shown in Figure 31.1, below-average (AFQT Category IV) recruits require more than 3 years of experience to attain the level of performance at which the higher aptitude recruits (AFQT Categories I-II) begin (Armor & Roll, 1994; Armor & Sackett, 2004; U.S. Department of Defense, 1991). Higher-aptitude personnel also experience fewer disciplinary problems.

The information shown in Figure 31.1 came from the JPM project (U.S. Department of Defense, 1991). Although collected more than a decade ago, these job performance data continue to be the best source of information about the job performance of enlisted personnel. For one thing, research has consistently demonstrated that cognitive ability, such as is measured by AFQT, is a strong predictor of job performance across a variety of occupations (Campbell, 1990; Hunter & Hunter, 1984; Schmitt, Gooding, Noe, & Kirsch, 1984; Welsh, Watson, & Ree, 1990). In addition, recent interviews with military training specialists responsible for the occupations used in the research reported that the occupations had changed little since the original job performance data were collected. Thus, it is safe to generalize from these data and to conclude that the relation between aptitude, experience, and job performance is still pertinent.

One of the major objectives of the JPM project was development of a mathematical model to link recruit quality, recruiting resources, and job performance. Working with the National Research Council, in 1991 the DoD used that model to establish the DoD recruit quality benchmarks (Sellman, 1997). In general, enlistment standards are based on judgments by service policy-makers as to the level of job performance required. However, standards should be guided by empirical evidence



Note: AFQT percentile: I (93-99); II (65-92); IIIA (50-64); IIIB (31-49); IV (10-30)

FIGURE 31.1 Hands-on job performance scores as a function of aptitude and experience.

of the relationship between recruit quality and the required level of performance. Although it is extremely difficult to specify an absolute value of performance that can be considered sufficient to guarantee successful military mission accomplishment, even so, the research performed within the JPM project developed reliable and valid measures of individual job performance that became the basis for the linkage model.

For years, industrial psychologists contended that job performance was the ultimate criterion for validating selection tests. In fact, S. Rains Wallace (1965), an eminent psychologist, once called it the holy grail of industrial psychology. Measuring job performance is a very expensive proposition. With the support of Congress and the DoD's effort to recover from the embarrassing misnorming episode, \$40 million was made available for the JPM project. Another aspect of this research effort that made it unique was its sustainability. It was widely recognized as a project of great merit and it lasted for over 15 years, spanning five presidential administrations, both Democratic and Republican.

ENLISTED SELECTION AND CLASSIFICATION IN TODAY'S MILITARY

Currently, the U.S. military recruits nearly 200,000 young people annually into full-time, active duty service and another 150,000 into the reserve components (U.S. Department of Defense, 2009). Standards for enlistment are established under the authority of Title X of the U.S. Code (January 2009). Enlistment criteria are based on the needs of the services and are designed to ensure those individuals accepted are qualified for general military duties. These individuals must be able to cope successfully with a wide range of demands occurring in a military situation such as exposure to danger, emotional stress, harsh environments, and the handling or operation of dangerous equipment. Further, the services require all military members to be available for worldwide duty 24 hours a day without restriction or delay. Frequently, this duty is in remote areas devoid of normal outside support.

Operating at the service-wide level are several mechanisms that probably do more to determine the character of entering recruits than do formal enlistment standards. The most important of these is the general recruiting environment—the ever-varying willingness of high-aptitude youth with high school diplomas to enter the military. This willingness cannot be considered part of a service's enlistment standards, but it sometimes directly affects the standards that a service sets. For example, during good recruiting times, a service may stop accepting nongraduates in AFQT Category IIIB (percentiles 31–49) even though they satisfy the entrance standards codified in Title X of the U.S. Code.

Each service attempts to assign the highest quality recruit possible into the various military occupations. Consequently, composite cut scores for occupational classification becomes a compromise between service ideals and fluctuating supply/demand pressures. Service officials set cut scores on the basis of personnel requirements, equipment used, training curricula, retention, the economy, and the availability of recruits with various composite aptitudes.

Because ASVAB is used to determine enlistment eligibility and job placement, it is important to DoD and the services that the test be fair and equitable for all military applicants, no matter their gender or race/ethnicity. Over the years, military personnel researchers have devoted considerable effort to ensure that ASVAB is a valid predictor of job training success and performance on the job and to minimize adverse impact for the various subgroups. Results indicate that ASVAB is valid for minorities and women. Equations for prediction of final school grades from ASVAB were essentially the same for Whites and minorities and men and women (Held, Fedak, Crookenden, & Blanco, 2002; Mayberry, 1997; Wise et al., 1992). Where differences in prediction of school grades were observed, technical training performance of minorities was overpredicted by ASVAB. For women, ASVAB slightly overpredicted technical training performance in nontraditional career fields. No differences were found for traditional military occupations. The Office of the Secretary of Defense asked the Defense Advisory Committee on Military Personnel Testing to review the

Wise et al. research, which looked at applicants across all services. In responding, the chair of that committee noted:

The conclusions from the analyses—that the ASVAB technical composites are fair and sensitive—are clear and compelling, and the use of the same enlistment standards and qualification scores for military occupations for all young people is justified.” (Drasgow, 1992, p. 2)

ENLISTMENT PROCESS

Young men and women interested in joining the military enter the enlistment process by contracting service recruiters. In addition to providing information about service life, opportunities, and benefits, recruiters also begin the initial screening of applicants. Most prospects take an enlistment-screening test at a recruiting office. This enlistment-screening test is used to predict the likelihood of “passing” the AFQT. Estimates are that 10–20% of prospects do not continue beyond this point (U.S. Department of Defense, 2004).

There are multiple requirements that must be met before applicants are selected for service. After recruiters have completed the preliminary screening and prospects have decided to enlist, they can go either to a Military Entrance Processing Station (MEPS³) or a military entrance test (MET) site to take the ASVAB. The military and civilian staffs at MEPS evaluate applicants’ medical⁴ qualifications, aptitude, and moral character standards on the basis of standards predetermined by the services. Some services also require a test of physical ability at the MEPS.

If an applicant achieves qualifying ASVAB scores and wants to continue the application process, a physical examination and background review is conducted at the MEPS. The physical exam assesses medical fitness for military service and includes the measurement of blood pressure, pulse, visual acuity and hearing; blood testing and urinalysis; drug and HIV testing; and medical history. If a correctable or temporary medical problem is detected, applicants may be required to get treatment before proceeding. Other applicants may require a service waiver for some disqualifying medical conditions before being allowed to enlist (Sackett & Mavor, 2006).

Furthermore, applicants must meet rigorous moral character standards. Applicants undergo detailed interviews covering any involvement with civil law enforcement (e.g., arrests, convictions) and some undergo a financial check or computerized search for criminal records. Some types of criminal activity are immediately disqualifying; other cases may offer the possibility of a waiver of the rule, wherein the services examine applicants’ circumstances and make an individual determination of qualification (Putka, Noble, Becker, & Ramsberger, 2004). Moreover, applicants with existing financial problems are not likely to overcome those difficulties on junior enlisted pay. Consequently, credit histories may be considered as part of the enlistment decision.

If the applicant’s ASVAB score, education credentials, medical fitness, and moral character qualify for entry, the applicant meets with a service classification counselor at the MEPS to discuss options for enlistment (Sackett & Mavor, 2003). The counselor considers the applicant’s qualifications along with service training or skill openings, schedules, and enlistment incentives. In this classification process, high-scoring recruits are discouraged from choosing jobs that require only low aptitude, and recruits who want to enter jobs for which they barely meet the standard but who have high aptitudes in other areas, are encouraged to choose jobs for which they are better qualified. Each service has incorporated its algorithms into computerized job reservation systems that service counselors at MEPS use to match the individuals’ desires with the needs of the services so that one component of those needs will be how well recruits’ ASVAB scores suit them for the various jobs.

³ MEPS is the current name given for the 65 enlistment processing centers located across the country; MEPS replaces the earlier term Armed Forces Examining and Entrance Stations.

⁴ Although the Americans with Disabilities Act (ADA) generally precludes employers from administering any type of medical exam before making a job offer, the military services are explicitly exempt from that requirement.

Generally, those who score higher on tests will have more occupational options. Although the process differs by service, specific skills and occupational grouping are arranged similarly to an airline reservation system, with the training “seat” and time of travel (to recruit training) based on the school or the field unit position openings. Using enlistment incentives (cash bonuses or extra money that can be used to cover college costs), recruiters may encourage the applicant to choose hard-to-fill occupational specialties. Ultimately, it is the applicant’s decision to accept or reject the offer. Although some discuss options with their family and friends, others decide not to enlist (Sackett & Mavor, 2006).

RECRUIT QUALITY BENCHMARKS AND ENLISTMENT STANDARDS

How does the U.S. military decide how many high school diploma graduate and above-average aptitude recruits to enlist? The goal is to maximize recruit quality (aptitude and education) while minimizing recruiting, training, and attrition costs. In conjunction with the National Research Council, and based on the results of the JPM project discussed earlier, DoD developed a mathematical model that links job performance to recruit quality and recruiting resources; this model specifies the number of high-quality recruits who will provide the desired level of job performance for the least cost (Harris et al., 1991; McCloy, 1994; Smith & Hogan, 1994; Wise, 1994). Scores from the JPM project define the job performance variable (Green & Mavor, 1994; Wigdor & Green, 1991). Costs reflect training costs, compensation costs, and recruiting costs (e.g., recruiter compensation and money for advertising, education benefits, and enlistment bonuses). Using these relations, the model allows “what-if” analyses to examine how changes in one or more of these variables affect the other variables. For example, the model could answer how decreasing the DoD advertising budget by \$20 million would affect recruit quality and job performance.

What should be the desired level of performance? Recruit quality benchmarks are used to help ensure that recruit performance is sufficient to complete military missions. The model cannot estimate how much quality is enough; rather, policy decision/recruiting policy analysts within DoD set the desired level of performance. Nevertheless, the model can help specify a cohort of recruits that will provide the desired level of performance for the lowest cost.

The performance level identified by the policy analyst is a minimally acceptable value. DoD has chosen the level of performance provided by the 1990–1991 enlisted cohort (the cohort in service during Operations Desert Shield and Desert Storm). Specifying this level of desired performance resulted in recruit quality benchmarks that call for 60% of recruits to score above the 50th percentile on the AFQT (i.e., to be in Categories I–IIIA) and 90% to have high school diplomas (Sellman, 1994). These benchmarks are not enlistment standards that the services use to establish entrance eligibility. Rather, they are recruiting goals that the services strive to meet to maximize performance and minimize recruiting costs. The standards codified in Title X of the U.S. Code are considerably lower (i.e., AFQT scores at the 10th and 31st percentiles for high school diploma graduates and nongraduates, respectively) than the standards actually used by the services for enlistment purposes (Sellman, 2004).

SELECTION FOR OFFICER COMMISSIONING PROGRAMS

Up to this point, we have focused largely on the accession of enlisted members. However, officers are recruited quite differently from enlisted personnel. As mentioned earlier, there are five principal ways to join the U.S. military as an officer: 4-year service academies (Army, Navy, Air Force, Coast Guard, and Merchant Marine), ROTC, OCS/OTS, and direct commissioning (Thirtle, 2001).

Various aptitude and academic criteria are used to screen officer candidates. Generally, the service academies and ROTC scholarship programs evaluate the candidates using a “whole person” approach. Factors such as Scholastic Achievement Test (SAT) or American College Test (ACT) scores, leadership experience, athletic participation, teacher recommendations, high school grade point average

(GPA) and class rank, and extracurricular activities may all be weighed together to derive an applicant numerical score. The service academies draw on highly selective national pools of high school graduates, and their classes look very much like students entering highly competitive civilian universities, with comparable GPA and SAT/ACT scores. Most Army and Air Force cadets and Navy midshipman are nominated by their local U.S. senator or congressional representative (Segal & Segal, 2004).

Selection for nonscholarship ROTC varies by service wherein candidates may be selected based on service-specific test scores in conjunction with fulfillment of other academic, physical fitness, and experience-based criteria. Factors considered for OCS/OTS include the Physical Aptitude Examination, college GPA, letters of recommendation, college major, an interview by a selection board, and scores on service-specific officer selection measures (e.g., Army Officer Aptitude Rating, Air Force Officer Qualifying Test) (Eitelberg, Laurence, & Brown, 1992). Individuals entering a direct commissioning program have completed graduate programs and are not subject to selection testing. Instead, they are evaluated by an entrance board to ensure their adherence to the DoD quality standards for members of their professions (attorneys, physicians, and other healthcare professionals).

Most individuals interested in attending one of the service academies must first receive a congressional appointment.⁵ It is not necessary for individuals to personally know the member of Congress, because most Congressional offices use a strictly competitive process based on college admission test scores, academic grades, and leadership performance in high school and other organizations to make their appointments. Additionally, applicants may not be married or have any dependents to qualify to attend one of the service academies. Should individuals, who are married or have a dependent wish to become an officer, they have the option to complete ROTC or OCS/OTS to obtain their commission.

Once accepted to a service academy, individuals become cadets/midshipmen and receive a Bachelor of Science degree at the completion of their 4-year program. While attending the academy, the cadets/midshipmen are provided free room and board, tuition, medical and dental care, and a monthly allowance. Further, a cadet/midshipman's academy life typically revolves around education, military training, and physical fitness.

In conjunction with their academic studies, the cadets/midshipmen participate in military training in leader and follower roles. As they advance through the academy, they are exposed to a multitude of leadership activities designed to hone their leadership skills in preparation for active duty. Additionally, there is a significant emphasis on physical education, whereby they continually train in intercollegiate sports, intramural sports, clubs, or physical fitness classes. Upon completion of their degree, cadets/midshipmen receive a commission in the U.S. military with an active duty service commitment of 5 years, plus 3 years in the active or inactive reserve. Selection for further training after commissioning may incur an additional active duty or reserve commitment.

The largest source of commissioned officers is ROTC. Historically, ROTC was designed for officers who would enter into reserve status. However, following World War II, officers receiving their commissions via ROTC had the option to enter active duty upon graduation, and in the decades that followed, larger percentages did so. Today, only the Army continues to offer the opportunity to commission directly into the reserve components from ROTC; the majority of Army cadets and all other service cadets/midshipmen commission directly onto active duty. To participate in ROTC, individuals must register for and complete military/naval science classes in addition to normal academic coursework through the university. ROTC classes range from 2 to 3 hours each week in addition to a weekly leadership laboratory.

The ROTC classroom activities include various instructional methods designed to educate cadets/midshipmen on the military culture. Leadership laboratories provide the environment for cadets/midshipmen to hone their leadership skills as the upperclassmen assume military leadership positions within the ROTC unit, and train the underclassmen. In addition cadets/midshipmen must

⁵ Some applicants (e.g., children of military personnel who have been awarded the Medal of Honor, military enlisted personnel on active duty) compete for appointments separately from the Congressional category.

attend various summer training programs throughout their college years: summer cruises for midshipmen and various levels of field training for Army and Air Force cadets. Successful completion of summer training programs is mandatory for all ROTC students.

Although attending ROTC, only scholarship cadets/midshipmen receive some portion of room and board and/or tuition. All contracted cadets/midshipmen (which can include non-scholarship students who are at least sophomores) are eligible for medical and dental benefits and a monthly allowance. Upon graduation, the cadets/midshipmen enter active duty with anywhere from a 2- to 4-year active duty service obligation, depending on whether and what type of scholarship, they received. As with academy cadets/midshipmen, ROTC graduates receiving further training after commissioning (e.g., pilots or nuclear officers) may incur additional active duty obligations.

The most flexible commissioning program is OCS/OTS. This program is designed to accept applicants who currently possess at least a bachelor's degree and is designed to select those with particular skills or aptitudes to fill service-manning requirements not met through the academies or ROTC. Training occurs during one or two short (usually 2 to 4 months) training cycles. This training is unique to each service on the basis of its culture and requirements but is generally similar to basic training for enlisted personnel, but with the added aspects of leadership training. Active duty service commitments upon commissioning range from 2 to 4 years, depending on the service and other factors. Because of the shorter time span required for this commissioning option, OCS/OTS serve as the short-term officer accession valve, in which the services can increase or decrease enrollment on the basis of officer requirements and the projected number of academy and ROTC graduates to ensure that the congressionally authorized supply of commissioned officers is maintained.

The smallest and most specialized commissioning method is through direct appointment. This program is designed for those individuals who currently possess an advanced degree and wish to enter the military in the fields of medicine, dentistry, law, or the chaplaincy. Upon selection, individuals are immediately commissioned and subsequently attend a short training course to prepare them for the military. These officers receive wages comparable to civilian professionals by commissioning into the military at a higher rank commensurate with their expertise and experience. Once on active duty, there are additional bonus pays of varying levels offered to healthcare professionals on the basis of their particular specialty. Further, for certain health professionals, they may apply to the Uniformed Services University of Health Sciences, which offers a salary and free tuition in a program leading to a doctor-of-medicine (MD) degree. In return, graduates owe a 7-year commitment to the military or the U.S. Public Health Service.

OFFICER RETENTION AND ATTRITION

Upon entering active duty or the reserve component, officers' attitudes toward military service are continually monitored by the DoD to ensure that personnel will be available to fill senior-level positions in the future. In recent years, the U.S. Navy, Air Force, and Marine Corps have generally succeeded in retaining the desired numbers of officers but have experienced some challenges in specific career occupations such as medical officers (GAO, 2007). On the other hand, the Army has not retained the desired numbers of officers, projecting a shortage of 3,000 or more officers annually through Fiscal Year (FY) 2013 (GAO, 2007). The assumption is that continued deployments for operations in Iraq and Afghanistan are the cause of the shortfall.

A recent study by the GAO studied officers who were in their 3rd, 4th, 5th, and 10th years of service to assess retention attitudes among the services. These year groups were chosen because they are typical of points when retention-decisions are made (GAO, 2007). This study concluded that retention rates for graduates from the U.S. Military Academy (i.e., West Point) and Army ROTC were 62%, which is 20–30 points below normal. To combat these lower retention rates, the Army instituted three principal measures. In 2007, the Army reduced the amount of time to promote First Lieutenants to Captains from 42 months to 38 months. The second measure was

to implement a higher promotion rate. For 2007, the promotion rate to Captain was 98% and the promotion rate to Major was 97%, which are both substantially higher than the Defense Officer Personnel Management Act's goals of 90% and 80%, respectively (U.S. Government Accountability Office, 2007). Lastly, the Army began offering eligible Captains a retention menu of incentives for additional service to include: graduate school or military school opportunities; branch or post of choice; or a Critical Skills Retention Bonus (CSRB).

OFFICER EXECUTIVE DEVELOPMENT

As previously mentioned, the American military personnel system is a closed system; therefore, the services must grow tomorrow's leaders today. As a consequence, the military sets as a priority the opportunity for lower ranking officers to receive developmental education in preparation for future senior leadership positions.

Although the services promote their people at slightly different times in their careers, each military rank has relatively similar command or responsibility levels (Moore & Trout, 1978). At the company-grade level, officers are put in charge of smaller projects/groups of personnel. During this phase, promotions are granted at regular intervals with very little competition.

At the field-grade level, officers are responsible for larger projects, more equipment (e.g., tanks, ships, aircraft) and more personnel. It is during the field-grade years that individuals typically receive command authority and are put to their ultimate leadership tests: where the mission and people collide. Promotion at the field-grade level becomes more competitive and fewer individuals are advanced to the next higher rank. Most officers, if serving 20 years in the military, will achieve the rank of Lieutenant Colonel/Commander. However, only a select few will be promoted to Colonel/Captain and even fewer will move on to the General/Flag officer category and senior leadership positions.

The general or flag officers typically are responsible for large groups of people with their accompanying equipment and policy creation. These individuals set their sights on the future and establish policy to ensure that the services are capable of executing the missions of today and tomorrow. Promotion at the general/flag officer level is very competitive and comes with assigned senior command or staff positions. Once assigned to a position, individuals will be promoted to the appropriate rank if they have not already been elevated to that rank.

COMMAND SELECTION AND CAREER BROADENING EXPERIENCES

The first point where the services start to identify tomorrow's senior leaders is command selection and career broadening. As officers move from the company-grade officer level to the field-grade officer level, they are considered for command positions. In collaboration between officers, their supervisors, and the service personnel managers, officers' records are submitted to development teams; if approved at that level, they become eligible for command. If selected, individuals then assume command of a unit. This first command opportunity is often perceived by the respective services as a "command test" to see if the officer is capable of leading potentially at higher levels of command and also is worthy of the next level of promotion and accompanying increased responsibilities.

Another facet where officers can stand out among their peers is through career broadening. This program is not solely designed for field-grade officers because many company-grade officers compete and are selected for career broadening. Once selected, these officers leave their career field and fill other positions in nonrelated occupations that are oftentimes considered intern positions. By taking advantage of these opportunities early in their career, officers are exposed to a broader picture of how the services operate at higher levels. Typically officers selected for these career-broadening positions have been selected through a highly competitive process and will be groomed to be future senior leaders.

DEFENSE TRANSFORMATION IN MILITARY SELECTION

The ASVAB has undergone several revisions since 1976 when it became the official Joint-Service selection and classification battery for all services. However, the last comprehensive review of ASVAB content was completed during the early 1990s. Since that review, the ASVAB has undergone two major methodological changes. The first change was transforming the paper-and-pencil form of the ASVAB to a computerized adaptive testing (CAT) version, which was implemented at all 65 MEPS in 1997 (Sands et al., 1997). The second major change was the implementation of item response theory scoring techniques—a more advanced psychometric procedure to develop and tailor test items to an individual examinee's ability level (e.g., McBride, Wetzel, & Hetter, 1997). These methodological changes to military enlistment testing presented the opportunity and possibility of adding new ASVAB content and/or new item formats that could potentially increase the battery's predictive validity for military occupations.

In addition to changes over the past 25 years in the testing environment, there have been changes in the nature of military service (e.g., more diverse missions, more complex organizations and systems, and enhanced technology) that affect the nature of military work and the prerequisite characteristics of military personnel (Levy et al., 2001). Consequently, in 2005, the DoD, in conjunction with the military services, initiated a review of ASVAB by a panel of experts in the areas of personnel selection, job classification, psychometrics, and cognitive psychology to determine if revisions in content and testing methodology were warranted (Drasgow, Embretson, Kyllonen, & Schmitt, 2006).

The panel made several recommendations for ways to streamline the military personnel selection and job classification process. Among others, these included such revisions to the ASVAB system as linking ASVAB test content directly to military job analytic information and training curricula and updating ASVAB content by including nonverbal reasoning tests, information technology/communication literacy tests, and noncognitive measures to enhance selection and classification efficiency. DoD also is considering a proctored Internet application of CAT-ASVAB. Since completing the technical review of the ASVAB in 2006, DoD and the services have pursued implementation of the panel's recommendations (Sellman, Shaw, Waters, & Geimer, 2007) after prioritizing them on the basis of (a) anticipated impact on improving the enlistment process, (b) sufficient research to support the recommendation, (c) cost of additional research, (d) time to implement the recommendation, and (e) cost to implement the recommendation (Brown, Stawarski, Sellman, & Warthen, 2008).

The U.S. military is undertaking fundamental changes to transform itself in response to changes in the world environment. For example, the Army is developing and fielding new combat systems, organizations, and doctrine intended to address global terrorism and more traditional warfare. Fortunately, Army leadership recognizes the importance of its people—soldiers—to the effectiveness of transformation and has begun a series of interrelated research efforts to approach the human side of transformation. The Army's approach continues long-standing research programs covering (a) the selection of individuals into the Army, (b) classification into the correct Army jobs, (c) subsequent promotion to positions of increasing rank and leadership, and (d) the assessment of skills and performance at selected career points.

Recent projects under this approach have focused these programs on occupations, jobs, and organizational structures that do not yet exist. For example, the Army has developed a process for conducting future-oriented job analysis, tied to Army transformation plans. As part of this process, the Army is determining future knowledge areas, skills, and aptitudes (KSAs) for various career points and different (sometimes emerging) Army jobs. The Army is also examining criteria for promotion to leadership positions and the development of a model assessment program for soldiers in Army-wide and job-specific technical KSAs.

Several innovative products and procedures have characterized these projects. For example, the Army has developed several applications of situational judgment tests (SJTs) for use as predictors and criteria and in competency and promotion assessments. There has also been extensive predictor

development including computer-based, faking-resistant personality instruments. An overarching theme has been the development and use of computer-based measures and web-based data collection. This has allowed not only exploration of new testing techniques and capabilities but also the transformation of the approach to field data collection and analysis. These projects have involved criterion-related validation (concurrent and longitudinal) in addition to pilot administrations of assessment measures under operational conditions.

The mission of the three service academies is to educate, train, and inspire men and women to become military officers of character. Selection for service academy admission has traditionally relied primarily on high school academic performance, standardized test scores, activities and honors, and athletics/fitness. The instruments used to assess academic prowess and physical fitness have proven to be good predictors of such performance by cadets/midshipmen. However, in keeping with the mission of the academies there is a new selection component emerging—character and leadership. Although such a component is clearly in line with the mission of the academies, several questions remain. For example, what instrument could be used to predict character and leadership development, and how are those traits demographically distributed among American youth?

In 2005, the Air Force initiated work to review the admission practices at all academies, as well as their character and leadership development programs. This effort also included a review of recruiting and interviewing procedures at civilian institutions in an attempt to identify an existing instrument to assess character and leadership. The results of the U.S. Department of the Air Force (2005) study highlighted the similarities and differences among the admissions programs of the three service academies but concluded that there was no viable instrument for assessing character and leadership. Consequently, the Air Force undertook research to develop and validate an instrument that will measure that construct. If such a device can be developed, it could result in (a) an increase in the number of cadets/midshipmen and subsequent academy graduates innately possessing a high level of character and leadership, (b) an improved recruiting and admissions process, and (c) a higher level of officership among cadets/midshipmen at each academy as well as among newly commissioned officers.

CONCLUSIONS

Since the advent of the Army Alpha and Beta in 1917, the U.S. military has been on the cutting edge regarding personnel selection, and, later, job classification. During World War II, many eminent psychologists participated in the Army Air Corps psychology program, focusing on aircrew selection and supporting measurement techniques (Flanagan, 1948). In the 1980s, the DoD sponsored research to refine item response theory and to develop groundbreaking techniques to calibrate paper-and-pencil tests to computer adaptive versions. This led to implementation of the Computer Adaptive ASVAB—the first and certainly the largest adaptive “employment” test program in use today. The job performance measurement project, conducted over a 15-year period in the 1980s and early 1990s, demonstrated that ASVAB was a valid predictor of hands-on job performance and provided the foundation for the DoD model linking recruit quality and recruiting resources to job performance. This model is used to set recruit quality benchmarks and to establish and defend DoD’s recruiting budget. That the model has been widely accepted by Congressional staffers and analysts at the Office of Management and Budget is testimony to the quality of the science underpinning the effort.

Implementation of the new selection and classification procedures should affect the military in four significant ways: (a) increase personnel productivity, (b) increase job satisfaction and commitment, (c) reduce first-term attrition, and (d) reduce adverse impact against women and minorities. To emphasize the significance of the potential benefits of enhancing military selection and classification, consider that approximately 30% of those who entered the military during FY 2008 will fail to complete their first 3-year term of service. The GAO estimated in 1997 that it cost DoD about \$40,000 to recruit, train, and equip each replacement for an individual who prematurely leaves the service (U.S. General

Accounting Office, 1997). That figure is probably approaching \$45,000 today. Thus, any increase in job performance or decrease in attrition will improve military readiness and save valuable resources.

In summary, as the United States military transforms itself in the 21st century, military selection and classification methods will undoubtedly change as well to meet the needs of the all-volunteer force. Today, as it was several decades ago, the ASVAB continues to serve as the principal screening tool for selection and job classification for enlisted personnel. With the end of conscription and the inception of the all-volunteer force, each new recruit represents an investment and with millions of dollars and national security at stake, those whom we select today will represent us in the future as leaders of the military services.

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