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Military Eligibility and Participation in the All-Volunteer Force

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Why, anybody can have a brain. That's a very mediocre commodity. Back where I come from we have great universities, seats of great learning where men go to become great thinkers. And when they come out they think deep thoughts, and with no more brains than you have. But, they have one thing you haven't got: a diploma.

--The Wizard to the Scarecrow in
The Wizard of Oz (1939)

The Wonderful Wizard was truly a wiz if ever a wiz there was. Everyone has a brain. Some may even have the capacity to think great thoughts. But, in the final analysis, people are just folks, and it doesn't matter a hoot whether your head is stuffed with grey matter or little bundles of straw. The main mark of distinction is the educational equivalent of a red badge of courage: pieces of paper with foreign words, lots of loops and curls, gold seals, and impressive signatures.

In some ways, the leaders of this country's modern military share a perspective not unlike that of the great and Powerful Oz--and the similarities even extend beyond a mutual attachment to the color green. For, in the world of the military's policymakers and data analysts, in the realm of placement officers and recruiters alike, diplomas and degrees hold an almost mystical property. With diploma in hand, accompanied by a reasonably high score on the standardized entry test, the fabled strawman himself could enlist in any one of the Armed Services with favorable opportunities for technical training, special benefits, and career advancement. Moreover, because the amiable Scarecrow is a bonafide recipient of the treasured document, he stands a much better than average chance of fulfilling his initial term of enlistment in praiseworthy fashion.¹

Measures of "Quality" and Eligibility for Military Service

→ "Quality," in the Department of Defense lexicon, generally refers to those characteristics and attributes of military personnel that are considered desirable and that contribute to a more productive, better motivated, and highly capable force. Because of the difficulty in constructing individual profiles and deriving measures of motivation and performance--and because of the wide range of different occupations in the Armed Services--manpower "quality" is customarily described in the shorthand terms of educational level and standardized test scores.

The Armed Services place a high premium on completion of high school.² It is commonly accepted that "possession of a high school diploma is the best single measure of a person's potential for adapting to life in the military."³ Male enlistees who have not completed high school (at time of entry), for example, are about twice as likely as are high school graduates to leave the military before finishing their full first term of active duty. In addition, non-high school graduates typically experience more disciplinary, administrative, and retraining actions.⁴ Consequently, "the active force recruiting programs have concentrated on enlisting high school diploma graduates."⁵ The practical gauge of military recruiting "success" since the end of conscription in December 1972 has been the comparable proportion of high school graduates in the general population--even though the Military Services attempt to recruit as many high school graduates as possible in any given year through the use of quotas, enlistment bonuses and other special incentives, and differential qualifying standards.

As in the case of formal education, the Services would prefer to recruit the "best and the brightest" young men and women from the general population. The experience of the last thirty-five years suggests that individuals who score relatively low on the military's aptitude test tend to be less successful in training programs than those who score in the higher range. In addition, evidence shows that higher-scoring recruits are less likely to have disciplinary problems and more likely to

¹The Cowardly Lion, if so inclined, could serve his country quite effectively along with Toto in the Canine Corps. The Tin Woodman, because of his steely nature, might very well be eligible to serve in one of the Army's Infantry/Armor specialties. And dear Dorothy, of course, could remain close to her home and Auntie Em by signing on with the Kansas National Guard.

²Officers are normally required to have a college degree. The issue of educational quality in the AVF is therefore focused primarily on the enlisted ranks.

³Department of Defense, America's Volunteers (Washington, D.C.: Office of the Assistant Secretary of Defense [Manpower, Reserve Affairs, and Logistics], December 1978), p. 30.

⁴Department of Defense, Defense Manpower Quality Requirements, Report to the Committee on Armed Services of the U.S. Senate (Washington, D.C.: Office of the Assistant Secretary of Defense [Manpower and Reserve Affairs], January 1974); and General Accounting Office, Problems Resulting from Management Practices in Recruiting, Training, and Using Non-High School Graduates and Mental Category IV Personnel (FPCD-76-24) (Washington, D.C.: General Accounting Office, 12 January 1976).

⁵Department of Defense, America's Volunteers, p. 30.

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develop the requisite skills to be effective on the job. "Though there are many high-scoring personnel who prove ineffective and many low-scoring persons who perform well," the Department of Defense points out, "on the average, the higher an individual's [aptitude test] score, the greater the likelihood of successful military performance."⁶

The test used to screen applicants for enlistment is the Armed Services Vocational Aptitude Battery (ASVAB). The ASVAB consists of ten subtests. The scores of four of the subtests (Word Knowledge, Paragraph Comprehension, Arithmetic Reasoning, and Numerical Operations) are combined to produce an Armed Forces Qualification Test (AFQT) score. The AFQT score, supplemented by scores on various composites of aptitude subtests, is used in conjunction with educational, medical, and moral standards to determine an applicant's enlistment eligibility. Scores on aptitude composites are also used to determine an applicant's eligibility to enter training in specific military occupations.

Enlistment Eligibility and Participation in the Volunteer Military: A Portrait of Contemporary Youth

In 1980, the Department of Defense and the Military Services, in cooperation with the Department of Labor, sponsored a large-scale research project to assess the vocational aptitudes of American youth. A national probability sample of approximately 12,000 young men and women, selected from participants in the National Longitudinal Survey (NLS) of Youth Labor Force Behavior, was administered the ASVAB.

This major research endeavor, known as the "Profile of American Youth," marks the first time that a vocational aptitude test has been given to a nationally representative sample. The "Profile" study thus offers an unprecedented opportunity to evaluate the "cross-sectional character" of military enlistees based on a national measure of vocational test performance.

The "Profile" study sample contains approximately equal proportions of males and females, including individuals from urban and rural areas, and from all major census regions. For the purposes of previous analyses, this sample was statistically weighted to correspond with the 1980 national youth population. Since the "Profile" study incorporates the scores of contemporary youth on a similar version of the ASVAB used currently to screen military recruits, it is possible to estimate, with reasonable precision, the numbers and proportions of American youth who would be expected to qualify for military enlistment under present standards. Enlistment eligibility rates for the general population, when combined with information on enlistment behavior, also allow--for the first time--accurate computation of the military "participation rates" of qualified youth.

Numerous attempts have been made throughout the years to fix the limits of the so-called "eligible" population and, therefore, to calculate the military "participation rates" of various demographic subgroups.⁷ The rates of participation for all youth (or specific age cohorts) can be easily determined with Department of Defense statistics (Master/Loss data files) and Bureau of the Census population estimates. However, the "participation rates" of qualified youth--a more "refined" measure of participation--must be based on a reasonable estimation of the number and characteristics of potentially qualified youth. Most attempts to describe the pool of potentially qualified youth have, in the past, hinged upon aptitude test score data compiled for pre-inductees or the aggregate population of applicants/examinees. Consequently, previous estimates of the "participation rates" of potentially qualified youth are subject to serious error.

Each Military Service applies its own aptitude standards in determining eligibility for enlistment. These aptitude standards reflect the diverse requirements of the separate Services, and they typically vary according to educational attainment (high school graduation status) and, at times, according to sex. For example, in the Army, male and female high school graduates during FY 1981 were required to achieve a minimum AFQT score of 16 and a score of at least 85 on one of nine Service-specific aptitude composites. In contrast, Air Force enlistment standards for FY 1981 required that male and female high school graduates achieve a minimum AFQT score of 21; in addition, they were required to attain a combined aptitude composite score (including the Mechanical, Administrative, General, and Electronics composites) of no less than 120.

⁶Department of Defense, Profile of American Youth: 1980 Nationwide Administration of the Armed Services Vocational Aptitude Battery (Washington, D.C.: Office of the Assistant Secretary of Defense [Manpower, Reserve Affairs, and Logistics], March 1982), p. 7.

⁷Examples of previous research include: R.V.L. Cooper, Military Manpower and the All-Volunteer Force (R-1450-ARPA) (Santa Monica, CA: Rand Corporation, 1977), pp. 213-216; B.D. Karpinos, Qualification of American Youths for Military Service (Washington, D.C.: Office of the Surgeon General, Department of the Army, 1962), and several other publications by the same author; C. Kim et al., The All-Volunteer Force: An Analysis of Youth Participation, Attrition, and Reenlistment (Columbus, OH.: Center for Human Resource Research, Ohio State University, May 1980); and Directorate for Manpower Research, Geographic and Racial Differences Among Men Qualified for Military Service (Research Note 72-16) (Washington, D.C.: Office of the Assistant Secretary of Defense for Manpower and Reserve Affairs, July 1972) and subsequent reports by the Manpower Research and Data Analysis Center. The other side of the issue--the characteristics of the population considered unqualified for military service--is treated in The President's Task Force on Manpower Conservation, One-Third of a Nation: A Report on Young Men Found Unqualified for Military Service (Washington, D.C.: Government Printing Office, January 1964).

Higher aptitude scores are required ordinarily for male non-high school graduates and recipients of General Educational Development (GED) high school equivalency certificates in each of the Services. In FY 1981, female non-high school graduates were not eligible for enlistment in either the Navy or the Marine Corps; and female high school graduates who wished to enlist in these Services were required to meet different aptitude standards than those established for males.

Recent analyses by the Human Resources Research Organization (HumRRO) and the Brookings Institution--using the separate Service aptitude standards in effect during FY 1981--have been performed to determine (on the basis of ASVAB results and data on sex and education) the numbers and proportions of American youth (ages 18 through 23) who would qualify for military service.⁸ Aptitude standards for FY 1981 were used because this period (October 1980 through September 1981) coincides roughly with the point of educational attainment established for the "Profile of American Youth" population (i.e., September 1980, or the start of the 1980-81 school year).

Table 1 displays the results of the HumRRO and Brookings analyses. First of all, it is apparent that enlistment "selectivity" varies from Service to Service. Proportionately more American youth, regardless of sex, would be expected to qualify for the Army than for any other Service. At the same time, the lowest proportion of youth would be expected to qualify for the Marine Corps. The stringent Marine Corps "selectivity quotient" is largely the effect of entry restrictions on females. The Navy's debarment of female non-high school graduates also affects the eligibility rate for all youth in this Service. Not shown in Table 1 are the separate eligibility rates for males and females. The estimated eligibility rates for all male youth, by Service, are as follows: Army, 77 percent; Navy, 75 percent; Marine Corps, 72 percent; and Air Force, 63 percent. The estimated eligibility rates for all females are: Army, 80 percent; Navy, 58 percent; Marine Corps, 46 percent; and Air Force, 60 percent.

Table 1
Estimated Percent of American Youth (18-23 Years) Who
Would Qualify for Enlistment in the Military Services
By Racial/Ethnic Group and Educational Level^a

Racial/Ethnic Group and Education ^b	Military Service			
	Army	Navy	Marine Corps	Air Force
White^c				
NHSG	41.7	19.9	22.5	11.2
GED	76.0	70.4	35.1	56.1
HSG	96.4	87.5	79.8	85.1
TOTAL	85.7	4.5	67.7	70.5
Black^d				
NHSG	7.1	3.8	3.9	0.8
GED	35.2	26.6	13.9	11.2
HSG	68.6	45.6	33.6	32.1
TOTAL	48.2	31.7	23.8	21.5
Hispanic				
NHSG	13.6	4.8	5.5	1.5
GED	40.0	35.7	18.8	16.8
HSG	85.7	64.8	54.7	56.7
TOTAL	54.8	39.2	33.3	32.7
TOTAL				
NHSG	31.6	15.0	16.8	8.0
GED	68.0	62.1	31.1	47.4
HSG	92.7	81.6	73.2	77.6
TOTAL	78.7	66.6	59.6	61.5

Source: M. Binkin and M.J. Eitelberg with A.J. Schexnider and M.M. Smith, Blacks and the Military (Washington, D.C.: The Brookings Institution, 1982), p. 38; and special calculations provided by the Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics.

^aEstimates of the percent of youth qualified for military service were calculated on the basis of results from the Profile of American Youth (administration of the Armed Services Vocational Aptitude Battery [ASVAB] to a national probability sample in 1980) and the 1981 education/aptitude standards used by the Armed Services. (It should be noted that eligibility for enlistment would also depend on other factors--including medical and moral requirements.)

^bNHSG is non-high school graduate. GED is recipient of General Educational Development (GED) high school equivalency certificate. HSG is high school diploma graduate or above. The American youth population includes all persons born between January 1, 1957 and December 31, 1962. Educational level was determined as of September 1980 (start of 1980-81 school year).

^cWhite category includes all racial/ethnic groups other than black or Hispanic.

^dBlack category does not include persons of hispanic origin.

⁸See Martin Binkin and Mark J. Eitelberg with Alvin J. Schexnider and Marvin M. Smith, Blacks and the Military (Washington, D.C.: The Brookings Institution, 1982).

The differences in the enlistment eligibility rates for the three racial/ethnic groups displayed in Table 1 are quite substantial. For example, approximately four out of five white youth would be expected to qualify for enlistment in the Army. Just over half of all Hispanic youth, and just under half of all black youth, would meet the minimum aptitude standards established by the Army. And the disparity between racial/ethnic groups is even wider in the other Services. About three out of ten white youth, for instance, would probably fail to qualify for entry into the Air Force, based on FY 1981 minimum aptitude/education standards; in sharp contrast, almost four out of five black youth would probably be rejected by the Air Force.

Substantial variance in the eligibility rates of youth by educational level can also be observed both within and between separate racial/ethnic groups. The enlistment eligibility rates for non-high school graduates, regardless of racial/ethnic group, are considerably below the comparable rates for persons with equivalency certificates or high school diplomas. Minorities who are high school dropouts (without GED certificates), in fact, have little or no likelihood of being able to meet the minimum enlistment criteria established by the Armed Services.

Table 2 displays the estimated numbers of young men and women (totals by racial/ethnic group and Service only) who would be expected to qualify for enlistment. These data give some idea of the approximate number of youth affected by the eligibility rates shown above--as well as the differential impact of Service standards on the supply of qualified applicants. (A forthcoming report by HumRRO will present the percentages and numbers of American youth who would be expected to qualify for military service--according to racial/ethnic group, educational level, gender, and geographic region--under the same standards outlined here.)

Table 2

Estimated Number of American Youth (18-23 Years)
in the General Population and the Estimated Number
Who Would Qualify for Enlistment in the Military Services
by Racial/Ethnic Group^a
(Number in Millions)

Racial/Ethnic Group ^b	Number in general population	Number Qualified for Military Service			
		Army	Navy	Marine Corps	Air Force
White	20.1	17.2	15.0	13.6	14.2
Black	3.4	1.6	1.1	0.8	0.7
Hispanic	1.5	0.8	0.6	0.5	0.5
TOTAL	25.1	19.6	16.7	14.9	15.4

Source: Derived from special tabulations provided by the Office of the Secretary of Defense (Manpower, Reserve Affairs, and Logistics).

^aBase population includes residents of the United States born between January 1, 1957 and December 31, 1962. Base population figures in this table exclude persons for whom education was unknown. Exclusion of these persons reduced base population figures by an average of 1.4 percent below Bureau of the Census estimates. Unknown cases occurred most often among black males (2.2 percent) and least often among Hispanic and white males (1.2 percent).

^bWhite category includes all racial/ethnic groups other than black or Hispanic. Black category does not include Hispanic.

The military "participation rates" of American youth (males only) were calculated with data from the "Profile of American Youth" study and recruiting statistics compiled by the Defense Manpower Data Center. The "participation rate" is defined as the percentage of male youth born between January 1, 1957 and December 31, 1962 who enlisted in the military (for the first time) between July 1973 and September 1981.

Table 3 shows the participation rates, by racial/ethnic group and educational level, for two base populations: (1) all male youth (within the respective category); and (2) all male youth who would be expected to qualify for enlistment under FY 1981 aptitude test standards (by racial/ethnic group and education category). It should be noted that the cross-sectional participation rates displayed in Table 3 actually understate the true percentages of male youth who join the military, since they do not include individuals who either (a) enlist after September 30, 1981 or (b) enter officer programs. It should also be pointed out that eligibility for enlistment would depend on other factors in addition to aptitude and education--including medical and moral requirements.

Table 3

**Military Participation Rates of Male Youth Born Between
1957 through 1962 by Racial/Ethnic Group and Educational Level^a**

Educational Level ^b	Racial/Ethnic Group			
	White ^c	Black ^d	Hispanic	TOTAL
<u>Below High School Graduate</u>				
All Youth	16.6	12.1	5.3	14.5
Qualified Youth	39.0	135.7 ^e	45.7	45.1
<u>GED High School Equivalency</u>				
All Youth	18.6	14.2	14.5	18.0
Qualified Youth	25.5	37.6	29.7	27.0
<u>High School Diploma Graduate and Above</u>				
All Youth	9.8	22.3	10.3	11.2
Qualified Youth	10.2	33.7	11.6	12.2
<u>TOTAL</u>				
All Youth	11.5	18.2	8.3	12.3
Qualified Youth	13.6	41.6	15.3	16.0

Sources: Statistics on qualified youth are derived from data that appear in Department of Defense, Profile of American Youth: 1980 Nationwide Administration of the Armed Services Vocational Aptitude Battery (Washington, D.C.: Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics, March 1982); and special tabulations provided by the Office of the Secretary of Defense.

^aParticipation rate is the percentage of male youth born between January 1, 1957 and December 31, 1962 who enlisted in the military (for the first time) between July 1973 and September 1981. Participation rates are shown for two base populations: 1. all male youth within the racial/ethnic and education category; and 2. all male youth who would be expected to qualify for enlistment under 1981 aptitude test standards (by racial/ethnic and education category). The cross-sectional participation rates understate the true percentage of male youth who join the military since they do not include individuals who a) enlist after 30 September 1981 and b) enter officer programs. Estimates of the number of youth qualified for the military were calculated on the basis of results from the Profile of American Youth (administration of the Armed Services Vocational Aptitude Battery to a national probability sample in 1980) and the 1981 education/aptitude standards used by the Armed Services. (It should be noted that eligibility for enlistment would also depend on other factors--including medical and moral requirements.)

^bFor military personnel, education at time of entry (and initial qualification) into service. Approximately one percent of the male youth population could not be identified on the basis of education; and one percent of military personnel could not be identified on the basis of racial/ethnic group. These unknown cases were not included in the calculations of participation rates.

^cWhite category includes all racial/ethnic groups other than black or Hispanic.

^dBlack category does not include persons of Hispanic origin.

^eDuring FY 1976-80, the Armed Services unknowingly accepted volunteers who did not meet eligibility standards because of errors in test calibration. These errors affected principally non-high school graduates with low aptitude scores. The unusually high "participation rate" for black non-high school graduates reflects the fact that many more black youth in this category were accepted for military service than would have qualified with the correctly calibrated test.

The attraction of the military for minority youth is vividly portrayed in Table 3. Black and Hispanic youth who are qualified for military service have generally enlisted in proportionately greater levels than their white counterparts. This is particularly true for blacks: as of September 1981, almost 42 percent of all potentially qualified black males in the United States (born in 1957 through 1962) have entered military service. One out of three black male youth who had a high school diploma or a GED, and would probably qualify for enlistment, had enlisted by September 1981--while the comparable rate for black high school dropouts is a whopping 136 percent. (This unusually high rate reflects the fact that ASVAB misnorming during FY 1976-80 affected principally the eligibility of non-high school graduates with low aptitude test scores. Many more black youth in this category consequently were accepted for military service than would have qualified with the correctly calibrated test.) In contrast, the participation rate for potentially qualified white high school graduates is 10 percent, and the overall rate for white males who would qualify for enlistment is about 14 percent.

Perhaps an even more revealing aspect of youth participation lies in the fact that potentially qualified youth who do not have a high school diploma or equivalency certificate--regardless of race--find military service an especially appealing job or education alternative. Almost half of all high school dropouts who could probably pass the military's aptitude test standards had enlisted; and more than one out of four qualified GED recipients had made the same choice. In fact, the impact of the Armed Services as a place of opportunity, equal acceptance and involvement, regardless of prior social disadvantage or pre-existing handicap, has helped to make the military a traditional channel for social mobility. The participation rates displayed in Table 3 tend to confirm that both the image and the promise of "opportunity" are still quite strong.

Some General Observations

As a matter of fact, our fantastic friends from the Wizard of Oz may pass the military's education/aptitude requirements. Their perseverance in getting to the Emerald City and the Scarecrow's diploma make them good risks insofar as the completion of their first term of duty. With "passing" scores on the AFQT, they would be eligible to join the enlisted ranks. It is highly questionable, however, whether Dorothy's three strange companions could ever meet the medical standards established for military eligibility. (And, alas, the poor Scarecrow himself would surely be a fire hazard.)

In the real world, nevertheless, the Military Services are faced with the task of selecting--from among almost a million potential recruits each year--hundreds of thousands of the nation's very "best" prospects. And for several hundred thousand young men and women annually, acceptance or rejection by the Armed Forces will affect not only their immediate opportunities for employment and training, but the total sum of their early "life chances" and the eventual course of their working life. For some young men and women, service in the nation's military may even be a sort of crossroad or junction between a path to socioeconomic "failure" or "success."

Recognition of the consequences of personnel screening decisions in the Armed Forces--on the individual "life chances" of today's youth as well as the nation's own defense capabilities--has operated to place the military's enlistment criteria under greater scrutiny than ever before. As the authors of one recent study observe: "Whether the standards used for enlistment, job classification, and assignment are as valid as adherence to them implies is an open question. While in many cases present standards are based on years of experience and are the products of extensive and rigorous research, in others they appear to be nothing more than legacies of the conscription era when there was virtually no pressure on the armed forces to justify their manning criteria."⁹

Congress has strongly urged the Department of Defense and the Military Services to develop an empirical research and analytical foundation for enlistment standards presently in use.¹⁰ Indeed, major efforts are currently underway to validate existing standards and to expand the selection and classification measures applied by the military (particularly aptitude test scores). Research is also in progress now to include consideration of various high school credentials, additional aptitude test scores, high school academic records, and attendance and behavioral records in an effort to refine further the recruit screening process. For example, it has been noted that, with the wide and almost limitless variety of high school "graduation" standards being used in the various states; school districts, and individual secondary schools, the current educational standards applied by the Armed Forces appear almost arbitrary. More "precise" standards, it is felt, can be developed to coincide with the substantial changes that have occurred in the secondary school systems of this country over the past two decades. Clearly, some applicants who should not be allowed to enlist are being accepted; on the other hand, it is quite possible that many individuals who would probably perform well in the military are being eliminated from consideration due to educational standards that are outdated, unnecessarily rigid, imprecise, and overly generalized. Current and future research efforts--including testing research, an assessment of educational and moral standards, a reexamination of medical criteria, and the ongoing analysis of the "Profile of American Youth" data base--should help the scientific and policymaking community evaluate the standards presently used by the Armed Forces as the basis for their personnel decisions--and, at the same time, reach a more complete understanding of the relationship and role of the military in society.

⁹Binkin and Eitelberg, Blacks and the Military, p. 155.

¹⁰Department of Defense, Department of Defense Efforts to Develop Quality Standards for Enlistment, Report to the House and Senate Committees on Armed Services (Washington, D.C.: Office of the Assistant Secretary of Defense [Manpower, Reserve Affairs, and Logistics], December 1981), p. 1.