# Navy Personnel Research and Development Center

Sen Diego, CA \$2152-6800 TR 87-32 August 1987



# AD-A184 375 AD-A184 375

Estimating the Youth Population Qualified for Military Service

Approved for public release; distribution is unlimited.



87 9 1 144

### NPRDC TR 87-32

August 1987

### Estimating the Youth Population Qualified for Military Service

Ervin W. Curtis, Ph.D. Jules I. Borack, Ph.D. Stephen R. Wax

### Reviewed by Murray Rowe



Released by B. E. Bacon Captain, U.S. Navy Commanding Officer

and

J. S. McMichael, Ph.D. Technical Director

Approved for public release; distribution is unlimited.

Navy Personnel Research and Development Center San Diego, California 92152-6800

SECURITY CLASSIFICATION OF THIS PAGE		A	DA184	375
	REPORT DOCU	MENTATION P	AGE	
Ta. REPORT SECURITY CLASSIFICATION		16. RESTRICTIVE A	ARKINGS	
UNCLASSIFIED 28. SECURITY CLASSIFICATION AUTHORITY		3 DISTRIBUTION /	AVAN ABUITY O	
28. SECURITY CLASSIFICATION AUTHORITY				
26. DECLASSIFICATION / DOWNGRADING SCHEDU	DLE	unlimited.		elease; distribution is
4 PERFORMING ORGANIZATION REPORT NUMBE	R(S)	5. MONITORING C	RGANIZATION R	REPORT NUMBER(S)
NPRDC TR 87-32				
68. NAME OF PERFORMING ORGANIZATION	65 OFFICE SYMBOL	7a. NAME OF MO	NITORING ORGA	NIZATION
Navy Personnel Research and	(If applicable)			
Development Center	Code 61			
5c. ADDRESS (City, State, and ZIP Code)		7b. ADDRESS (City	, State, and ZIP	Code)
San Diego, CA 92152-6800				
Ba. NAME OF FUNDING / SPONSORING	85. OFFICE SYMBOL	9 PROCUREMENT	INSTRUMENT ID	ENTIFICATION NUMBER
ORGANIZATION	(If applicable)			
Headquarters, U.S. Marine Corps	MR		· · · ·	
8c. ADDRESS (City, State, and ZIP Code)		10 SOURCE OF FL	كالالباب المنصب بجبانها فيعاف الم	
		PROGRAM ELEMENT NO.	PROJECT NO.	TASK WORK UNIT NO. ACCESSION NO
Washington, DC 20380-0001		63732M	C0073	C0073-01 01.02
1 TITLE (Include Security Classification)				
Estimating the Youth Population	Qualified for Mili	itary Service		
2 PERSONAL AUTHOR(S)				
Curtis, Ervin: Borack, Jules: and				
13a, TYPE OF REPORT 13b. TIME CO Interim FROM <u>8</u>	OVERED 3. Jun TO <u>86 Jun</u>	14. DATE OF REPOR		
16 SUPPLEMENTARY NOTATION		<u> 1987 Augu</u>	ST.	34
17. COSATI CODES FIELD GROUP SUB-GROUP	18. SUBJECT TERMS (	Continue on reverse	if necessary and	d identify by block number)
05 09	Recruiting, re			
	demographic ar		quaimed	military available,
19. ABSTRACT (Continue on reverse if necessary				
	•			
<sup>3</sup> In order to efficiently assign	n recruiters, equ	itably allocate	recruiting g	goals, and effectively use
limited advertising resources, location and size of the current	ne U.S. Marine	Corps requires	s detailed h	nowledge of geographic
report describes the developmen	t of a methodolog	v to estimate a	n quanned i	the number of male high
school graduates, 17 to 21 years	old. that can be	expected to au	alify for mi	litary service. Estimates
by year, racial/ethnic group, and	U.S. Marine Corr	os recruiting di	strict are gi	ven as examples. Use of
the estimates by the Personnel P	rocurement Divisi	on of Headquar	ters, USMC	is described.
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT		21. ABSTRACT SEC	URITY CLASSIFIC	ATION
UNCLASSIFIED/UNLIMITED SAME AS I	RPT. DTIC USERS			UNCLASSIFIED
22. NAME OF RESPONSIBLE INDIVIDUAL				22c. OFFICE SYMBOL
Curtis, Ervin	0.04.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.4.	(619) 225-7		Code 61
DD FORM 1473, 84 MAR 83 AF	Redition may be used un All other editions are of			CLASSIFICATION OF THIS PAGE
			ហ	NCLASSIFIED
	<i>.</i>			

-----

### FOREWORD

This report describes the development of a methodology to estimate and project the number of male, high school graduates, 17 to 21 years old, in each U.S. county, that can be expected to qualify for military service. This market for recruits is often referred to as the "Qualified Military Available" or QMA. The QMA projections are used by Headquarters, United States Marine Corps, Personnel Procurement Division (MR) to allocate recruiters among recruiting districts.

The effort was conducted under subproject C0073-01.02, Qualified Military Available, sponsored by the Manpower Systems Integration and Procedures Section (MPI-40) and the Marketing Branch (MRM) and Policy and Analysis Section (MRRP) of the Personnel Procurement Division.

v

B. E. BACON Captain, U.S. Navy Commanding Officer J. S. MCMICHAEL Technical Director

### SUMMARY

This report describes a methodology for estimating the number of male, high school graduates, 17 to 21 years old that can be expected to qualify for military service under existing aptitude and physical standards. These estimates of the "qualified military available" or QMA are generated by racial/ethnic group within Marine Corps recruiting districts and stations. The estimates and projections through 1990 indicate the size and location of the market for potential recruits. The Marine Corps has used the QMA estimates to allocate its recruiter force and recruiting goals more efficiently and equitably.

After explaining the estimation methodology, the report presents QMA estimates for each year, 1984 through 1990 by aptitude category, recruiting district, and racial/ethnic group. They reveal a decline in the national QMA, a shift from the Northeast to Southwest in the location of QMAs, and a movement in the QMA racial/ethnic mix toward a larger Hispanic share.

# CONTENTS

Page	:
TRODUCTION 1	
Problem	L
A ESTIMATION METHODOLOGY 3	3
The Base Population3Estimating the Educationally Qualified3Estimating the Mentally Qualified3Estimating the Physically Qualified11	33
SULTS	3
Using the QMA Estimates	;
NCLUSIONS AND RECOMMENDATIONS	;
FERENCES 17	,
PENDIX A—QUALIFIED MILITARY AVAILABLE (QMA) BY YEAR (1984-90), MARINE CORPS RECRUITING STATION, AND RACIAL/ETHNIC GROUP A-0	)
PENDIX BCLUSTER SIZE AND COUNTY REPRESENTATION	)

# LIST OF FIGURES

		age
1.	Estimating QMA: A process of elimination	2
2.	Geographic locations of recruiting districts	2
3.	Mean AFQT of Hispanic high school graduates as a function of percent of adult Hispanics with > 12 years of education in the county	6
4.	Estimated AFQT categories of the four county clusters	7
5.	AFQT category distributions and mean AFQT for Blacks as a function of the socio-economic status and educational level of the county	8
6.	Formation of the five county clusters for the White/Other group	9
7.	AFQT category distributions and Mean AFQTs for White/Other PROFILE individuals	10
8.	Percent "draftees" disqualified for medical reasons on initial examination, by race (1953-1971)	11
9.	Percent disqualified for medical-physical reasons only	12
10.	National QMA estimates and projections	13
11.	QMA estimates by USMC recruiting district, 1984 and 1990	14
12.	Percent distribution of QMA by racial/ethnic group (1984-1990)	15
13.	Recruiter reliefs across Marine Corps recruiting districts	16

### INTRODUCTION

### Problem

In each year since 1980, the Marine Corps (USMC) has enlisted over 35,000 individuals without prior military service. Most of the enlistees have been male, high school graduates between the ages of 17 and 21 years old. The USMC deploys nearly 2,500 recruiters nation-wide to obtain these enlistees. Efficient assignment of recruiters, equitable allocation of recruiting goals, and effective use of limited advertising resources require a detailed knowledge of the geographic location and size of the current and future markets for young men qualified for military service. The market is often referred to as the "qualified military available" or QMA.

Until recently, the lack of adequate demographic data prevented estimation of meaningful geographically-disaggregated QMA populations.

### Objective

The objective of this effort was to estimate and project the number of male, high school graduates, 17 to 21 years old, in each recruiting district and station, that can be expected to qualify for military service under existing aptitude and physical standards. Currently, the estimates and projections cover the period 1984-1990 and are updated annually.<sup>1</sup> This report describes the estimation methodology and the supporting data, and displays the QMA results.

### Overview of QMA Estimation

QMA was estimated as a process of elimination. The QMA population consists of individuals who have a high school education, receive an acceptable score on an aptitude test, and pass a physical examination. Using all 17-21 year olds as a base, an estimate was made of the proportion that were high school graduates (including those with GED certificates). The non-graduates were then subtracted from the base. Next, from this "educationally qualified" base, an estimated number of low-aptitude individuals was removed. The remaining sub-population was then divided into groups representing aptitude ranges or categories. Finally, a constant proportion of each group, representing the physically disqualified, was removed. The remaining population is the QMA. The estimation process is pictured in Figure 1.

QMA estimates were derived hierarchically by year (1984-1990) for the 3,137 U.S. counties, for the 47 USMC recruiting stations, for each of the 6 USMC recruiting districts, and for the nation. Figure 2 shows the location of the recruiting districts.

1

<sup>&</sup>lt;sup>1</sup>Male youth population "estimates" and "projections" are used in the derivation of QMA numbers for current and future years, respectively. For simplicity, the term "estimate" is used throughout this report to represent both estimated and projected data.





### QMA ESTIMATION METHODOLOGY

### The Base Population

The QMA estimation began with an estimated base population composed of all 17-21 year old males residing within a county. The group was subdivided by age (e.g., 17, 18, ...) and by racial/ethnic group (Black, Hispanic, and White/Other). The population estimates excluded institutionalized individuals, and those persons not residing in a household (e.g., living on a military base or in a college dormitory). These data derive from 1980 Census files, principally the 5 percent "Public Use Micro Sample" (PUMS) (U.S. Bureau of the Census, 1983). Annually, the 1980 population data were aged to generate estimates for future years (e.g., 1988, 1989). Bureau of the Census projections were used to correct for migration and immigration changes. A final adjustment corrected for a small proportion of Hispanics also classified as Black.

### Estimating the Educationally Qualified

From each estimated racial/ethnic group base population, an estimate of those "educationally qualified" for service was generated. An "educationally qualified" individual has graduated from high school or has received a GED. Estimates of high school completion rates were derived from the educational attainment data contained on the PUMS file. The file contains appropriately disaggregated estimates for each large county (population greater than 100,000) and for "county groups" -- a group of contiguous counties with a population in excess of 100,000. Consequently, for many counties, the high school completion rate was based on data from neighboring counties, as well as their own.<sup>2</sup>

Since the military services actively recruit high school seniors (17 year olds) who are expected to graduate, they were included in the estimates of educationally qualified individuals. That is, the number of 18-22 year old high school graduates was used as an estimate of 17-21 year olds available for recruitment one year earlier. For example, to obtain estimates of 17-21 year old high school graduates for 1988, high school completion rates were applied to the base population of 18-22 year old males expected in 1989.

### Estimating the Mentally Qualified

The next step in estimating QMA was to apportion the "educationally qualified" population into aptitude qualification groups. Aptitude qualification refers to achievement of a minimal score or higher on the Armed Forces Qualification Test (AFQT). The AFQT scale is segmented into categories based upon percentile scores. These categories are used as both minimum entrance criteria and as standards within the Marine Corps for technical school eligibility. The categories and their corresponding percentile scores are shown in Table 1. Although the USMC currently classifies "aptitude qualified" as I-IIIb (AFQT percentiles 49-100), the minimally acceptable score has varied over time. Therefore, in addition to estimating the number of individuals exceeding specific AFQT scores, the numbers in specific categories (e.g., I-IIIa, IIIb) were also estimated.

<sup>&</sup>lt;sup>2</sup>NPRDC receives these high school graduate population estimates and projections from the Defense Manpower Data Center.

Table	1
-------	---

Category/Grade	Percentile Score					
I	93-99					
II	65-92					
Illa	50-64					
ШЬ	31-49					
IVa	21-30					
IVь	16-20					
IVc	10-15					
V	01-09					

### AFQT Categories/Grades

Until 1980, the AFQT had not been administered to a nationally representative sample of the youth population. Data on AFQT distributions of military applicants could not be generalized to the population of young men.<sup>8</sup> Then, in 1980, the Department of Defense, in conjunction with the Department of Labor, administered the AFQT to a representative sample of 11,878 youths as part of the National Longitudinal Survey (NLS) (Department of Defense, 1982). From the sample, known as the Profile of American Youth (often referred to as "The PROFILE"), estimates of the percentage of individuals in each AFQT category were possible (Bock and Moore, 1984).

Ideally, the PROFILE sample would have been large enough to enable direct calculation of AFQT category distributions for each county. However, this was not possible. Many of the 3,137 counties have small populations, few recent high school graduates, and even fewer Black and/or Hispanic graduates. Therefore, the estimation of county-level AFQT category distributions required the following procedures and assumptions.

First, a dataset was established by merging individual respondent data from the NLS with the corresponding record from the PROFILE. Then, this large set of variables was analyzed to identify those that were highly correlated with AFQT scores and were available at the county level from other sources of data (e.g., Census files). The most highly correlated variable was race/ethnicity. This finding meant that QMA could not be estimated accurately without accounting for each county's racial/ethnic mix. At that point, the sample was split into the three racial/ethnic group classifications--Black, Hispanic, and White/Other. Then, within each group, different combinations of variables that best predicted AFQT scores were identified. Other variables that were highly correlated with AFQT and available at the county level included level of education (e.g.,

<sup>&</sup>lt;sup>3</sup>Unlike the preceding conscription environment, AFQT test-takers in the All-Volunteer Force (AVF) era do not constitute a representative sample of all young men. Instead, they represent only the portion of the population who volunteer. Statistically, the sample of test-takers suffers from "selectivity bias". This bias would skew the estimate of the AFQT category distribution. Estimating the AFQT category distribution requires an unbiased sample of young men, one that represents <u>all</u> qualified individuals in an area, including those who do not choose to volunteer.

high school diploma, college degree, parental education), and socio-economic status (e.g., Father's occupation). "Level of Education" alone provided maximum prediction for both the Hispanic and White/Other groups, while a combination of "Level of Education" and "Father's Occupation" best explained Black scores.

In order to infer county-level AFQT distributions from a PROFILE subgroup (e.g., Hispanics), counties were grouped into homogeneous clusters. Then, the PROFILE individuals from the counties in a given cluster served as a representative sample for that cluster. Clustering was based on Census-type variables considered surrogates of the predictor variables. Table 2 relates the predictor and surrogate variables.

### Table 2

E thnic Group	Profile Predictor Variable	Census/Other Surrogate Variables
Hispanic	Level of education	Percent of adult Hispanics in county with 12 or more years of education
Blacks	Level of education and father's occupation	Percent of adult Blacks in county with > 12 years education and socio- economic status indicator of county (SESI)
White/Other	Level of education	High school and college completion rates for adults

### **Predictor and Surrogate Variables**

All counties, including those without PROFILE representation, were grouped into a few homogeneous clusters based on the surrogate variable(s) value(s) of each racial/ethnic subgroup. Boundary values were chosen to yield roughly equal-sized PROFILE subsamples across the clusters. This procedure increased the likelihood of accuracy across the clusters.

For example, within the Hispanic group, counties were clustered into four groups representing ranges of educational attainment ("Percent of the Adult Hispanics in the counties with 12 or more years of education"). Hispanic AFQT scores were examined by cluster to confirm the surrogate's predictive potential. Figure 3 demonstrates that the mean AFQT (Y-axis) increased as a function of educational attainment in the counties (X-axis).



Figure 3. Mean AFQT of Hispanic high school graduates as a function of percent of adult Hispanics with > 12 years of education in the county.

Next, the distribution of the PROFILE participants across AFQT categories was computed for each cluster. Figure 4 illustrates the estimated AFQT category distributions of the four clusters. The shaded portion of each bar represents the percentage of 17-21 Hispanic high school graduates estimated to belong in categories I-IIIa. The solid portion is the IIIb percentage. Taken together, the entire bar represents the I-IIIb percentage. Note specifically the increase in the I-IIIa percentage across clusters as the level of educational attainment in the counties rises. This distribution was then used to represent the AFQT category distribution of Hispanic 17-21 year old educationally qualified males in all counties belonging to the cluster.<sup>4</sup> Appendix B lists the number of PROFILE participants by cluster, the number of counties they represent, and the total number of counties represented by each cluster.

For the Black group, two PROFILE variables combined to best predict AFQT scores: level of education and father's occupation. Two county-level variables were used as surrogates: educational attainment of adult Blacks in the community, and an indicator of the overall socio-economic status of the county. The latter variable, known as the Socio-Economic Status Indicator or SESI, is based on income levels, home ownership statistics, and educational, occupational, and environmental characteristics that prevail in the county. SESI was constructed by Donnelly Marketing Information Services in collaboration with Simmons Market Research prior to this research project.

<sup>6</sup>This methodology assumes: (1) that the PROFILE Hispanics, for example, from a cluster of counties are representative of <u>all</u> 17-21 year old educationally-qualified Hispanics in all counties in the cluster and (2) that the AFQT scores of a given subpopulation, e.g., 17-21 year old Hispanic high school graduates, are not appreciably different from county to county within a cluster. These assumptions are supported by the sampling methods used to derive the PROFILE. The National Longitudinal Survey sampled 202 geographically dispersed county-sized areas selected by standard area probability methods. The objective was to obtain sufficient numbers of individuals from urban and rural areas, as well as from all geographic regions. In addition, a weighting scheme was devised to insure national and regional representativeness within the major racial/ethnic groups.



Percent of Adult Hispanics with > 12 Years of Education

Figure 4. Estimated AFQT categories of the four county clusters.

The Black group of high school graduates was first split in half based on county SESI, yielding two groups of 439 and 418 individuals with mean AFQTs of 52.9 and 60.2, respectively, a statistically significant difference. Then, each of two SESI groups was split at its median on county educational attainment (percent of adult Blacks with  $\geq 12$  years of education), producing the four clusters pictured in Figure 5. The AFQT category distribution of the Blacks in the clusters were then used to estimate the aptitude qualification rates for Black high school graduates in the corresponding counties.

"Level of education" best explained AFQT scores of the White/Other PROFILE individuals. Because the sample size was relatively large (N = 2,287), two surrogate county-level variables (high school and college completion rates) and five clusters were used. Figure 6 demonstrates how the variables were split to form the five county clusters.

The first split separated the White/Other group into three sub-groups based on county-level college completion rates. The first sub-group, representing 25 percent of the individuals, came from counties with college completion rates of 21.4 percent or less. The second sub-group came from counties with completion rates between 21.4 percent and 29.4 percent. The remaining 50 percent of the individuals came from counties with completion rates in excess of 29.4 percent.

The second division, based on county-level high school completion rates, formed the five clusters shown at the right in Figure 6. For example, Cluster 1 (N = 289) contains those individuals whose counties had a college completion rate under 21.4 percent and a high school completion rate under 84 percent. Figure 7 displays the AFQT category distributions derived for the five clusters.

Finally, the county-level AFQT category distributions were normalized to the national distribution. Because of its larger sample size, the national distribution was felt to be more accurate than the county-level estimates. The normalization procedure was intended to compensate for some of the estimation error at the county level. The procedure aggregated the county-level distributions and compared the aggregate to the national distribution computed from the PROFILE sample separately for each racial/ethnic group. For each AFQT category, a ratio of the aggregate percentage to the national percentage was formed. The ratio was then used to normalize each county-level percentage for that AFQT category.

7



<sup>a</sup>Percent of adult Blacks with > 12 years of education.

Figure 5. AFQT category distributions and mean AFQT for Blacks as a function of the socio-economic status and educational level of the county.



Percent of White/Other PROFILE Graduates Figure 6. Formation of the five county clusters for the White/Other group.

9





### Estimating the Physically Qualified

Determining the size and composition of the QMA requires estimating the percentage of the population meeting educational and aptitude standards which is also physically qualified. Physical failure rates of military applicants to the All-Volunteer Force are biased by self-selection. More representative rates were sought in draft-era data. Yet, an initial examination of those data yielded several surprises. Figure 8 shows the percent of conscriptees, by race, that were disqualified on the initial physical examination over an 18-year period (Karpinos, 1972). To conclude, as the figure suggests, that young Americans were progressively less able to pass a military physical exam and that Blacks were significantly healthier than Whites would be unwise. Instead, the steadily rising disqualification rates during the late 1960's and early 1970's probably reflects attempts by many individuals to avoid military service during the Vietnam conflict. However, this does not explain the Black-White differences evident throughout the 18-year history. One explanation was provided by the U.S. Surgeon General who pointed out that many physical problems go unnoticed if not reported by the examinee or revealed in a medical history (Karpinos, 1967). Because Blacks had less exposure to physicians and medical care, it was likely that fewer infirmities were detected or reported. As access to health care and nutrition have become more widespread, it is reasonable to assume a narrowing of the differential.



Figure 8. Percent "draftees" disqualified for medical reasons on initial examination, by race (1953-1971) (Karpinos, 1972).

To derive a physical disgualification rate, the draft-era data had to be adjusted to account for the somewhat unrepresentative group of individuals who took the physical exam. For example, disabled, or otherwise obviously unfit individuals were disqualified by their draft boards prior to examination. Others, expecting to be drafted, either enlisted or joined reserve programs. Neither group appeared in the draftee sample. Karpinos (1967), correcting for these biases, found that the adjusted disqualification rates clustered around 14 percent. Figure 9 shows these adjustments for five sets of data. His estimates were reinforced by the findings of a special study of 18-year olds recommended by President Kennedy's Task Force on Manpower Conservation (U.S. Department of Labor, 1964). The Task Force had proposed that upon reaching 18 years of age, young men should be promptly classified, and if eligible for conscription, sent as soon as possible for aptitude and physical testing. During the 18-month study, over 380,000 individuals were examined, and a disgualification rate of 16.9 percent was obtained (Karpinos, 1966). Three percent of the examinees failed both the aptitude and physical examinations, leaving 13.9 percent who failed only the physical exam. Finally, adjusting for those individuals who had already enlisted reduced the physical disqualification rate to 13.5 percent.



Figure 9. Percent disqualified for medical-physical reasons only (Karpinos, 1966, 1967).

Based on the evidence from these studies, a physical disqualification rate of 14 percent was applied to the otherwise qualified population regardless of ethnic group, or geographic location.

### RESULTS

Applying the methodology described in the preceding section, estimates of the QMA by ethnic group, AFQT category, and county were produced for years 1984 through 1990.

Figure 10 displays the national-level base population (labeled BASE) from 1984 to 1990. The middle curve (HSG) depicts the projected educationally qualified, i.e., high school graduates. The I-IIIb curve represents the most frequently used definition of QMA. The I-IIIb population is expected to decline through 1987, remain fairly stable through 1989, and then decline again in 1990. A more restrictive definition of QMA, the I-IIIa's are also shown. Its projected trend parallels that of the I-IIIb's.



Figure 10. National QMA estimates and projections.

Figure 11 displays the distribution of the QMA (defined as I-IIIb's) among the six Marine Corps recruiting districts for 1984 and 1990. The estimates indicate a shift in market share away from the Northeast (District 1), Mid-Atlantic (District 4), and North Central (District 9) districts. Much of the shift is attributable to increased migration toward the South and Western U.S. Appendix A lists high school graduates and QMA (defined by I-IIIb) estimates by district and recruiting station for 1984 through 1990.

QMA is also expected to undergo a shift in its racial/ethnic group composition. Figure 12 displays the distribution of QMA (I-IIIb) by group and year. The Hispanic group's "share" of QMA is expected to increase significantly (from 5.61 to 6.60 percent) between 1984 and 1990. The Black group is also expected to grow, but at a lesser rate. By contrast, the White/Other group proportion is declining. Historical differences in racial/ethnic group birth rates, as well as Hispanic immigration patterns are often offered as explanations for these trends.





۰.



Figure 12. Percent distribution of QMA by racial/ethnic group (1984-1990).

Given the limited PROFILE sample sizes and the unavailability of certain countylevel data (e.g., educational attainment statistics for the racial/ethnic subpopulations in small counties), QMA estimates for individual counties cannot be recommended, and are not presented here. Conversely, the aggregated estimates--for the nation and by the recruiting district and station --are recommended for use in identifying trends in the overall size of the QMA and its geographic and ethnic distributions.

Maintaining accurate QMA estimates depends on acquiring data that capture shifts in the demographic attributes of counties. For example, the data must pick up changes in racial/ethnic mix, high school graduation rates, and aptitude distributions. The current QMA estimation methodology relies heavily upon the 1980 census and subsequent Bureau of Census projections. Unfortunately, no projections of Hispanics at the county level, or even at the state level, were available. In addition, no careful tracking of high school graduation rates for the racial/ethnic subpopulations has been conducted at the county level, nor has any projections of the rates been attempted. Evidence from at least one county (Los Angeles, California) suggest that the shift in the racial/ethnic distribution of young men within counties may be greater than that in the current data. Similarly, high school completion results maintained by Los Angeles County differed considerably from those provided by DMDC. While these findings are for a single county and the discrepancies may be due, in part, to definitional and/or measurement inconsistencies, they do indicate a need for caution at the county level, and a need for more accurate sources of data.

### Using the QMA Estimates

Since Fiscal Year (FY) 1985, the Personnel Procurement Division of Headquarters, USMC has used the QMA estimates to allocate recruiters and recruiting goals. In FY86, the first major shift in allocation of recruiters to districts based on these data was

undertaken. The apparent success of the reallocation is measured in the marked decline in the number of recruiters relieved for failure to perform. Figure 13 shows the number of recruiters relieved during all of FY85 (prior to the reallocation), as well as the number relieved in the first six months of FY85, and those relieved during the first six months of FY86 (after the reallocation). In most districts, the FY86 year-to-date (YTD) reliefs are considerably less than the FY85 YTD numbers. While acknowledging that many factors can affect recruiter attrition, it is believed that this realignment of recruiters to better match the recruit market, will tend to equalize recruiters' opportunity to succeed.



MARINE CORPS RECRUITING DISTRICT

Figure 13. Recruiter reliefs across Marine Corps recruiting districts.

### CONCLUSIONS AND RECOMMENDATIONS

The QMA estimates are useful for identifying national and/or regional trends in the market for recruits. The Marine Corps has found the data especially useful for allocating its recruiters and recruit quotas among its districts and stations.

Because they are produced at the county level, the QMA estimates can be aggregated to represent any of the four services' recruiting regions. However, insufficient sample size and the unavailability of some county level data prevent recommending the use of individual county QMA estimates.

いたい たたいなませい ビンシンシング 課 またい いいい いたい

Updating the QMA estimates depends on acquiring data that accurately captures shifts in the racial/ethnic population mix of counties, changes in the high school graduation rate of the racial/ethnic groups in each county, and changes in the aptitude distribution within counties. It is imperative that the search for more current, accurate sources of county-level population, educational attainment, and aptitude data continue.

### REFERENCES

- Bock, D. R., & Moore, E. G. J. (February 1984). <u>Profile of American youth:</u> <u>Demographic influences on ASVAB test performance</u>. Washington, DC: Office of Assistant Secretary of Defense (Manpower, Installations, and Logistics).
- Department of Defense. (March 1982). <u>Profile of American youth: 1980 nationwide</u> <u>administration of the Armed Services Vocational Aptitude Battery</u>. Washington, DC: Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics).
- Karpinos, B. D. (April 1966). Review of the results of the examination of 18 year-old youths for military service. Supplement to health of the Army. Washington, DC: Medical Statistics Agency, Office of the Surgeon General, Department of the Army.
- Karpinos, B. D. (March 1967). Results of the examination of youths for military service, 1966. <u>Supplement to health of the Army</u>. Washington, DC: Medical Statistics Agency, Office of the Surgeon General, Department of the Army.
- Karpinos, B. D. (June 1972). <u>Draftees: Disqualifications for military service for medical</u> <u>reasons--an analysis of trends over time</u>. Alexandria, VA: Human Resources Research Organization.
- U.S. Bureau of the Census (1983). <u>Census of population and housing, 1980: Public-use</u> <u>microdate samples technical documentation</u>. Washington, DC: U.S. Government Printing Office.
- U.S. Department of Labor. (January 1964). <u>One-third of a nation: A report of young men</u> found unqualified for military service. Washington, DC.

### APPENDIX A

# QUALIFIED MILITARY AVAILABLE (QMA) BY YEAR (1984-90), MARINE CORPS RECRUITING STATION, AND RACIAL/ETHNIC GROUP

FY	STATION NUMBER		BLACK		WHITE/OT	ADUATES TOTAL	BLACK	HISPANIC	AVAILABLE NHITE/OT	(QKA) Total
1984	1922		3235	1340		96374	1102	788	67218	69108
			6361	2719		159548	1999	1566	112221	116896
	1932	BUFFALC	4934	1317	72557	78808	1795	738	53448	55981
			7581	3426	90062	101069	2569	1765	68022	72356
		LONG ISLAND		7842	95381	116505	5219	4747		82541
		MANCHESTER	393	558	62618	63569	145 5539	365 5726		46800 106669
	1979	NEWARK New York City	16411 32685	10668 20392	125479 61768	152558 114845	9278	10301		66607
		1 (NORTHEAST)		4B262	750132	883276	27646	25996		616958
	4926	BALTINORE	35558	3724	119717	157999	10933	2339	88774	102046
	4934	SO. CHARLESTON	1834	741	57502	60077	581	468	40158	41207
		CINCINNATI	12677	1392	123392	137461	4705	849		95128
		CLEVELAND	12826	1852	112545	127223	5022	1043		88178
	4968	LOUISVILLE	6916	1117	77910	85943	2086	653		58163 103126
		PHILADELPHIA HARRISBURG	24535 2434	3216 951	124036 103633	151787 107018	7421 882	1742 486		75657
		PITTSBURG	5987		103833	114533	2376	441		80662
			20634	1669	73965	96268	5106			60477
		4(MID-ATLANTIC)			899486		39112			704644
	6928	BIRHINGHAM	40539	2198	94009	136746	10241	1337	68090	79668
	6960	ORLANDO	17172	7544	112778	137494	5082	4497		92519
		JACKSONVILLE		20575	76109	125303	7031	12954		75929
		MACON	49395	2200	130387	183082	11859	1999		109053
		NASHVILLE		1836	116496	143455	7509	1102		92463
			33808	2504	109376	145688	8479 50201	1430 23319		87913 537545
		6(SD-ATLANTIC)		37957	639155	871768				
		ALBUQUERQUE	3596	29717	54020	87333	984	17704		58569 91461
		DALLAS	21991 4108	10241 9891	106225 106671	138457 120670	7419 1645	5255 6062		87583
		DENVER Houston	20478	15754	82760	118992	6198			76316
		KANSAS CITY		2287	81158	90B10	2399			6370B
		LITTLE ROCK	7815	1081	68427	79323	2504			52054
		NEW ORLEANS	30831	3764	82593	117188	7067			69590
	8982	OKLAHOMA CITY	7840	2743	95745	106328	2752			75018
		omaha	1558	1029	73697	76284	602			55782
		SAN ANTONIO	5080	41541	46356	92977	1564			59540
		B(SOUTH CENTRAL)		118048		1028362	33134	66684		689621
		ST. LOUIS	12321	1652	125411	139384	3629	1050		96582
		CHICAGO	37004	14604	154942	206550	12341	7662		136702
		DES MOINES DETROIT	1812 21306	1275 2753	73281 119813	76368 143872	665 7122	793 1700		55247 96379
		INDIANAPOLIS	7380	1580	106599	115559	2418	947		80335
		LANSING	8134	2663	107472	118269	2982	1538		82853
		MINNEAPOLIS	2147	1664	161021	164832	844	1071		121070
		MILWAUKEE	4193		119453	125495	1386	970	87729	90085
	DISTRICT	9 (NORTH CENTRAL)	94297	28040	967992	1090329	31387	15731	712135	759253
		SAN FRANCISCO	14634	24645	145538	184817	5912			131785
		SEATTLE	4647		142085	150934	1832			111372
		LOS ANSELES	29590		160272	254921	11964	34175		168038
		PHOENIX	5326	16049	131276	152651	1949	9844 1629		109951
		PORTLAND	1386 6622	2852 22130	88772 101194	93010 129946	546 2451	1629		68395 89147
		SAN DIEGO	6678		118422	149811	2672			106080
		12(WEST)	<b>68883</b>		887559	1116090	27326			784768
	NATIONAL	TOTAL	678791	407377 A-1	4941976	6028134	229422	3624361	4092789	566003

FY	s74710x Number	NAME	BLACK H	IISPANIC N	PLONA GRA	TOTAL	BLACY H	MILITARY HISPANIC N		(Bhá) Total
1652	1937	ALBANY	3147	1327	87521	91995	1070	780	64097	6594
4 . 4 4		BOSTON	6164	2695	143842	152705	1937		108346	11183
		BUFFALO	4746	1305	68995	75046	1730	729	50821	5328
			7442	<b>345</b> 7		96904	2523	1782	64957	6926
	1420				86005		5002	4634	69190	7862
		LONS ISLAND	12/34	7660	90934	111328		362	43997	4449
		NANCHESTER	382	559	59525	60465	- 140			
			16019	10553	119457	146029	5402	5656	90832	10189
		NEW YORK CITY		20096	<b>58</b> 040	109873	9012	10152	44189	633
	DISTRICT	L (NORTHEAST)	<b>B</b> 2371	47656	714319	844346	26816	25650	536429	5888
		BALTINORE	34364	3685	113206	151255	10567	2315		975
	4934	SO. CHARLESTON	1781	752	54868	57401	561	472	38319	393
	4938	CINCINNATI	12251	1391	117506	131148	4555	842	85291	906
	4940	CLEVELAND	12491	1854	107593	121938	4884	1045	78499	844
	4958	LOUISVILLE	6658	1134	74360	82152	2017	659	52909	555
		PHILADELPHIA	23784	3182	117960	144926	7193	1723	89360	982
		HARRISBURG	2333	946	98649	101928	845	495	70705	720
		PITTSBURG	5837	770	103126	109733	2316	451	74492	772
			19842	1686	70360	9188E	4906	1080	51647	576
			119341	15400	857628	<b>992</b> 369	37844	9072	625876	6727
				9107	80550	130955	9925	1333	64852	761
		BIRMINGHAM	39210	2193	89552					
		ORLANDO	16794	7499	109017	133310	4975	4465	80164	898
		JACKSONVILLE	27531	20035	72333	119899	6759		53139	725
	6970	HACON	47691	3295	124782	175768	11457	1995	91096	1045
	6976	NASHVILLE	24446	1964	111066	137376	7304	1116	79922	863
	6992	RALEISH	32356	2471	103591	138418	8111	1414	73869	833
	DISTRICT	6(SO-ATLANTIC)	188028	37357	610341	835726	48531	22932	443042	5145
	B924	ALBUQUERQUE	. 3479	28903	51391	83773	953	17219	37936	561
	8942	DALLAS	21252	10071	101665	132988	7166	5168	75404	877
		DENVER		9810	102493		1597		76764	843
		HOUSTON		15495	79111	114313	5965		59360	73
		RANSAS CITY		2282	77404	86843	2331	1456	57074	608
		LITTLE ROCH	9500	1094	65154	75748	2410	647	46570	498
					78667	111956	6788	2322	57299	66
		NEW OFILEANS	29571	3718						
		OKLAHOMA CITY	7536	2729	91386	101651	2640	1609	67410	710
		OMAHA	1493	1035	70532	73060	575	681	52155	534
	8998	SAN ANTONIO	4912	40315	44105	89333	1513	22220	33375	57:
	DISTRICT	B(SOUTH CENTRAL)	108594	115452	761909	985955	31939	65210	563347	660
	9804	ST. LOUIS	12181	1671	120014	133866	3563	1058	87962	925
	9936	CHICAGO	36152	14617	147525	198294	12061	7672	111093	120
	9946	DES MOINES	1778	1281	70260	73319	650	795	51566	530
		DETROIT	20791	2774	114974	138539	6950	1710	84006	928
		INDIANAPOLIS	7258	1586	102085	110930	2381	946	73702	77(
		LANSING	7928	2640	102469	113037	2914	1523	74670	
		MINNEAPOLIS	2108	1697	154250	158055	826	1090	114149	116
			4108		113950	119922	1357	976	83655	854
		MILWAUKEE 9(NORTH CENTRAL)	92304	1864 28130	925528	1045962	30702	15770	680803	7272
							E170	12007	105144	1258
		SAN FRANCISCO	13954	24047	138272	176273	5639	14823		106
		SEATTLE	4453	4162	135740	144355	1762	2540	102204	
		LOS ANGELES	28358	93399	151008	242732	11465	33298	114852	1596
		PHOENII	5165	15837	126241	147243	1893	9705	94383	105
	12990	PORTLAND	1356	2851	84756	88963	530	1629	63233	65:
	12995	SACRAMENTO	6363	21752	96751	124866	2349	11646	71567	855
	12999	SAN DIEGO	6427	24263	112743	143433	2573	13091	85751	1014
		12(WEST)	66076	156278	845511	1067865	26211	86732	637134	7500
	NATIONAL	TOTAL	656714	400273	4715236	5772223	225366	3486631	3914040	547

.

;γ		STATION NAME		SCHOOL D		ADUATES Total	BUALIFIED BLACK H	MILITARY HISPANIC	AVAILABLE HITE/OT 	(DHA) TOTAL
1980						90009	1066 1930	783	62643	64492
		BOSTON	6129	2752	140889	149770	1930	1589	106122	109641
		BUFFALC	4688	1357	67146	73191	1709	764	49466	51939
	1950	HARTFORD	7502	3565	84087	95154	2545	1834	63507	67885
	1965	LONS ISLAND		7664	88798	108974	4915	4639	67564	77118
		MANCHESTER	379	569	57931	58878	139	367	42825	43331
		NEWAR		10683	116355	142937		5723	88473	99545
		NEW YORK CITY	31457	20231		107358		10224	42383	61540
		1 (NORTHEAST)		48157		826271		<b>2</b> 5923		575492
	4926	BALTINORE	33807	3717	110506	148030	10405	2338	<b>8</b> 2638	95382
	4934	SO. CHARLESTON	1752	762	53643	56157	555	477	37462	38494
		CINCINNATI	12146	1414	114658	128218	4513	858	83226	88597
		CLEVELAND	12415	1905	104998	119319		1074	76578	82509
	4948	LOUISVILLE	6547	1170	72690	80407		680	51716	54379
	4700	PHILADELPHIA	23434	3200	114686	141322	7091	1736	86875	95702
			2297	955	96194	99446		489	68928	70250
			5801	786	100665	107252		459		75470
			19499	1735	68565	89799		1113	50343	56272
		RICHMOND 4 (MID-ATLANTIC)		1755				9224	610471	657055
		BIRHINGHAM		2244	<b>B74</b> 10	128522	9844	1353	63304	74501
		ORLANDO	36868 16843	7641	107929	132413	4994	4551	79355	88900
								12564	51724	70967
		JACKSONVILLE		19970	70431	117592	6679			
		MACON	47126	3365	122369	172850	11334	2035	89341	102710
	6976	NASHVILLE	24374	1923	108524	134821	7290	1147	78096	86533
	6992	RALEIGH	31689	2504	100590	134782	7947	1431	71726	B1104
	DISTRICT	6(SD-ATLANTIC)	186090	37647	597253	820990	48088	23081	433546	504715
	8924	ALBUQUERQUE	3449	28825	50082	82356	947	17178	36960	55085
	8942	DALLAS	21031	10140	99819	130990	7103	5199	74040	86342
	8944	DENVER	3970	<b>999</b> 7	100865	114832	1588	6120	75550	83258
		HOUSTON		15607	77543	112568	5881	7928	58184	71993
		KANSAS CITY		2312	75676	85099		1477	55797	59584
		LITTLE ROCK				74086			45394	
		NEW DRLEANS	29063	3758	76777	109598	6679	2345	55906	64930
		OKLAHOMA CITY	7406	2748	89426	79580	2599	1618	65968	70185
		OMAHA	1467	1053	69216	71736	566	693	51162	52421
				40172			1499	22137	32560	56198
		SAN ANTONID 8(SOUTH CENTRAL)	4873 107216		43021 - 745963	88066 968911	31562	65356	551521	648439
	00/4	ST. LOUIS	12338	1719	117623	131680	3592	1080	86206	90878
							12065	7850	108263	128178
		CHICAGO	36182	14964	143778	194924				
		DES MOINES	1773	1307	69008	72088	644	808	50657	52109
		DETROIT	20739	2873	113061	136673	6931	1771	82594	91298
		INDIANAPOLIS	7292	1625	100039	108956	2390	971	72231	75592
		LANSING	7918	2679	100044	110641	2910	1541	72894	77345
	9972	MINNEAPOLIS	2124	1748	151564	155436	832	1121	112156	114109
	9974	MILWAUKEE	4095	1923	111186	117204	1352	1011	81611	83974
	DISTRICT	9(NORTH CENTRAL)	92461	28838	906303	1027602	30716	16153	666612	713481
		SAN FRANCISCO	13632	24040	134497	172169	5502	14827	102276	122605
	12802	SEATTLE	4375	4208	132953	141536	1730	2565	100112	104407
	12968	LOS ANGELES	27847	63344	145793	236984	11257	33296	110889	155442
		PHOENIX	5148	16049	124233	145430	1885	9833	92866	104584
		PORTLAND	1357	2899	82885	87141	531	1667	61820	64018
		SACRAMENTO	6270	21917	94781	122968	2320	11732	70111	84163
		SAN DIEGO	6335	24412		140684	2535	13175	83614	99324
		12(WEST)	64964	156869		1046912	25760	87095	621688	734543
	NATIONAL	τοτΔι .	650135	402887	4607614	5660636	771977	1401071	3833725	542008

• •

	STATION	STATION Name	HIGH	SCHOOL D	IPLONA GR	ADUATES	QUALIFIED	HILITARY	AVAILABLE	(QKA)
FY		NAME	BLACK		WHITE/OT	TOTAL	BLACK	HISPANIC	WHITE/OT	IUIAL
1987	1072					82925			61812	
176,		BOSTON	6145	2815	138795	147758		1628		108108
			4700	1371	65861	71932		769	48527	51014
		HAPTFORD		3733	82810	94109	2559		62555	67034
		LONG ISLAND		7769	87480	107655	4872	4699	66559	76130
	1971	HANCHESTER	373	576	57045	57995	139	372	42174	
	1979	NEWARE NEW YORK CITY	15654	10875	113697	140226	5269			97545
	1980	NEW YORK CITY	31272	20418	53444	105134	8885	10321		<b>59</b> 897
	DISTRICT	1 (NORTHEAST)	81284	48929	683521	813734	26454	26345	513311	566110
		BALTIMORE	33373	3766	108821	145950	10297	2366	81373	<b>94</b> 036
	4934	SO. CHARLESTON		769	52948	55464	547	478	36978	38003
		CINCINNATI	12185	1424	113133	126742	4524	864	82127	87515
			12337	1955	102836	117128	4816	1102	74968	80885
		LOUISVILLE	6569	1195	71553	<b>793</b> 17	1988	696	50925	53609
		PHILADELPHIA	23068	3233	112310	138611	6994	1752	85076	93822
		HARRISBURG	2293	967	94558	97818	830	491	67762	69083
		PITTSBURS	5721	788	<b>78</b> 285	104794	2268	460	70963	73691
		RICHMONE		1778	67990	<b>89</b> 260	4821		49920	
	DISTRICT	4(MID-ATLANTIC)	116785	15875	B22434	955094	37085	9341	600092	646518
	6928	BIRMINGHAM	~ 38768	2290	86112	127170	9823	1388	62383	73594
	6960	DRLANEC	17074	7852	107930	132856	5058	4675	79342	89075
	6961	JACKSONVILLE	27185	20141	69501	116827	6672	12672	51043	70387
	<b>69</b> 70	MACON	47137	3442	121435	172014	11341	2076	<b>88</b> 670	102087
	6975	NASHVILLE	24446	1963	106985	133395	7332	1168	77008	<b>8</b> 5508
		RALEIGH		2552	99106	133198	7905	1455	70671	80031
	DISTRICT	6(SO-ATLANTIC)	186150	38240	591070	815460	48131	23434	429117	500682
			3465	29188	49371	82024	954	17383	36441	54778
		DALLAS	21119	10393	99621	131133	7129	5333	73880	B6342
			4012	10287	100654	114953	1607		75379	83280
		HOUSTON		16031	77288	112814	5907		57980	72021
		KANSAS CITY		2373	74648	84142	2315	1517	55026	58858
		LITTLE ROCK			62814			670		47960
		NEW ORLEANS	28946	3796	75745	108457	6656	2370	55162	64188
		OFLAHONA CITY	7364	2810	88775	98949	2581	1653	65494	69728
		DHAHA	1458	1073	68667	71198	564	698	50771	52033
		SAN ANTONIC 8(SOUTH CENTRAL)	4917 107353	40684 117778	42701 740284	88302 965415	1516 <b>31624</b>	22420 66472	32315 547343	56251 645439
		CT 1 0111C	1055/			174510	7:47		<b>8</b> 5215	89973
		ST. LOUIS CHICAGO	12556 36220	1770 15333	116242 140317	130568 191870	3647 12081	1111 8043	105653	125777
		DES MOINES	1768	13333	68366	71465	646	824	50177	51647
		DETROIT	20715	2932	111602	135249	6923	1811	81525	90259
		INDIANAPOLIS	7349	1663	98817	107829	2410	993	71338	74741
		LANSING	7924	2753	98728	109405	2916	1583	71928	76429
		MINNEAPOLIS	2151	1799	150362	154312	845	1150	111293	113289
		MILWAUKEE	4098	1956	109299	115343	1351	1024	80203	82578
		9 (NORTH CENTRAL)	92771	29537	893733		30821	16539	657332	704692
	12800	SAN FRANCISCO	13459	24381	132360	170200	5436	12033	100650	121119
		SEATTLE	4363	4312	132132	140807	1726	2625	99486	103837
		LOS ANGELES	27667	64099	142545	234311	11186	33702	108417	153305
		PHOENIX	5206	16417	123648	145271	1910	10064	92435	104409
		PORTLAND	1356	2933	81831	86120	531	1678	61033	63242
		SACRAHENTO	6274	22349	93902	122525	2323	11971	69456	83750
		SAN DIEGO	6351	24940	108636	139927	2543	13461	82627	98631
		12(WEST)	64676	159431	815054		25655	88534	614104	728293
	NATIONAL	TOTAL	649019		4546096 A-4	5604905	230665	3361299	3791734	541149

Y	STATION NUMBER		BLACK I	HISPANIC	WHITE/OT	TOTAL	BLACK	HISPANIC	AVAILABLE WHITE/OT	
1989	1922		3193			88520		B46		6338
	1930		6160	2892	136689	145741	1940	1669	102956	10656
	1932	BUFFALC	4701	1390	64864	70955	1719	781	47789	5028
	1950	HARTFORD		3825	81735	93143	2565	1967	61739	6627
		LONS ISLAND		7936	86851	107224	4885	4803	66081	7577
		MANCHESTER	376	594	56824	57794	139	387	42014	4254
			15420	10963	111481	137864	5198	5885	84762	
		NEW YORK CITY		20608	51572	103141	8796	10419		5847
		1 (NORTHEAST)	80831	49634	673917	804382	26332	26757	506052	55914
	4926	BALTIMORE	33183	3842	108109	145134	10265	2416	80840	9352
	4934	SO. CHARLESTON	1762	791	52422	54975	554	490	36606	3765
		CINCINNATI	12225	1449	111882	125556	4538	881	81220	8663
		CLEVELAND	12167	2007	100766	114940	4753	1133	73434	7932
		LOUISVILLE	6629	1220	70812	78661	2002	711	50392	5310
		PHILADELPHIA	22775	3309	110707	136791	6915	1794	83859	9258
		HARRISBURG	2310	992	93604	96906	834	510	67085	6842
			5624				2235	463	69309	7200
		PITTSBURG		796	96033	102453				
		RICHHOND			67905	89327		1173	49873	558
	DISTRICT	4(MID-ATLANTIC)	116254	16249	812240	944743	36940	9571	592618	6391
		BIRNINGHAM		2355	85329	126543		1422	61808	730 896
		ORLANDO	17380	8112	108329	133821	5149	4826	79635	
		JACKSONVILLE		20403	69134	116967		12836	50759	703
		HACON	47383	3555	121354	172292	11406	2147	88619	1021
	6975	NASHVILLE		1999	106098	132720	7387	1181	76359	849
	6992	RALEIGH	31717	2639	98734	133090	7959	1505	70430	798
	DISTRICT	6(SO-ATLANTIC)	187392	39093	588978	815433	48503	23917	427610	5000
			3529	29700	48961	82190	974	17677		547
	8942	DALLAS	21440	10790	99941	132171	7236	5530	74108	868
	8944	DENVER	4064	10526	100760	115350	1629	6455	75472	835
	8952	HOUSTON	19766	16569	77354	113689	5988	8413	58032	724
	B962	KANSAS CITY	7133	2410	74022	83565	2320	1533	54588	584
	8964	LITTLE ROCK	9456	1164	62442	73062	2394	685	44619	476
		NEW ORLEANS	29097	3891	75360	108348	6684	2430	54890	640
		OKLAHONA CITY	7414	2891	88855	99160	2598	1704	65545	698
		OMAHA	1469	1094	68193	70756	567	708	50423	516
		SAN ANTONIO	5029	41446	42729	89204	1549	22846	32335	567
		B(SOUTH CENTRAL)		120481	738617	967495	31939	679B1	546144	6460
	9904	ST. LOUIS	12693	1811	115080	129584	3678	1132	84363	891
		CHICAGO	35931	15632	136994	188557	11981	8194	103153	1233
		DES MOINES	1763	13852	67579	70691	639	834	49616	510
		DETROIT				133378	6904	1823	80196	889
			20655	2949	109774		2407			739
		INDIANAPOLIS	7336	1711	97649	106696		1020	70499	
		LANSING	7932	2831	97837	108600	2917	1629	71300	758
		NINNEAPOLIS	2158	1839	149399	153396	847	1172	110556	1125
		MILWAUKEE 9(NORTH CENTRAL)	4080 92548	1982 30104	107713 882025	113775 1004677	1349 30722	1043 16847	79037 648720	814 6962
		SAN FRANCISCO	13463	24967	131337	169767	5437	15397	99866	1207
		SEATTLE	4404	4464	132384	141252	1743	2718	99706	1041
		LDS ANGELES	27748	65489	140808	234045	11219	34439	107096	1527
		PHOENIX	5249	16857	124087	146193	1921	10326	92745	1049
		PORTLAND	1348	2993	81092	85433	529	1714	60491	627
		SACRAHENTO	6317	22911	93532	122760	2334	12276	69197	838
	12999	SAN DIESO	6422	25643	108147	140212	2573	13836	82255	<b>98</b> 6
	DISTRICT	12(WEST)	64951	163324	811387	1039662	25756	90706	611346	7278
	NATIONAL	TOTAL	650373	418855	4507164	5576392	235779	3332490	3768461	5421

	STATION	STATION	HIGH	SCHOOL DI	IPLONA GRI	ADUATES	QUALIFIED			(DX#1
FY	NUMBER	NAME	BLACK H	ISPANIC I	HITE/OT	TOTAL	BLACK. I	HISPANIC	WHITE/OT	TOTAL
1989	1877	ALBANT	3122	1454	BI647	88643	1064	B61	61542	63467
1197		BOSTON	5864	2811	134492	143167	1848	1622	101293	104763
		BREEVE	4596	1374	6391B	69898	1671	771	4706?	49509
		HARTFORD	7157	3593	B0141	90891	2424	1851	60529	64604
	-		12448	8137	85898	106483	4886	4924	65355	7516
		LONG ISLAND	389	632	58174	59195	. 141	408	43039	4358
		NANCHESTER NEVARI	15017	10741	110584	136342	5069	5771	<b>B4</b> 080	94920
		NEW YORK CITY		20233	50909	101032	8493	10231	38761	5748
		1 (NORTHEAST)	78483	48975	668183	795641	25596	26439	501666	55370
								0407	61767	9445
		BALTINORE	32849	3973	109391	146213	10179	2493	81787	
		SD. CHARLESTON	1760	839	52002	54601	556	516	36307	3737
		CINCINNATI	11859	1497	110471	123829	4409	908	80157	8547
		CLEVELAND	12106	1959	99959	114024	4736	1098	72938	7877:
		LOUISVILLE	6625	1255	70670	78550	1986	734	50266	5298
		PHILADELPHIA	22485	3353	111051	136889	6842	1817	84109	9276
		HARRISBURG	2337	1029	93711	97077	847	526	67169	6854
		PITTSBURG	5497	803	94056	100356	2179	467	67858	7050
	4994	RICHMOND	19586	1857	68444	<b>8</b> 9887	4910	1177	50293	5638
	DISTRICT	4(HID-ATLANTIC)	115104	16567	809755	941426	36644	9736	590884	63726
	6925	BIRMINGHAM	38752	2431	85966	127149	<b>98</b> 35	1470	<b>62</b> 277	7358
		ORLANDO	18066	8530	110861	137457	5355	5074	81504	9193
		JACKSONVILLE	28242	21070	70271	119583	6941	13250	51603	7179
		MACON	47897	3664	123255	174816	11530	2214	90014	10375
		NASHVILLE	24135	2061	106419	132615	7213	1229	76554	8499
		RALEIGH	32761	2745	100720	136226	8241	1576	71855	B167
		6 (SO-ATLANTIC)		40501	597492	827846	49115	24813	433807	50773
	DISIKILI	GIDUTHILMHIJU)	187833	40301	J7/47L	82/040	47113	24013	433807	30773
	8924	ALBUQUERQUE	3688	30963	49765	84416	1018	18424	36722	5616
		DALLAS	22374	11519	102165	136058	7555	<b>5</b> 893	75773	8922
		DENVER	4038	10679	103142	117859	1617	6547	77257	8542
		HOUSTON	20486	17419	77932	115837	6198	8842	58443	7348
	8962	KANSAS CITY	6970	2474	73752	83196	2274	1568	54401	5824
		LITTLE ROCK	9324	1225	63494	74043	2376	719	45382	4847
		NEW ORLEANS	29914	4062	76621	110597	6902	2525	55B00	6522
		OKLAHOHA CITY	7636	3050	90753	101439	2681	1807	66949	7143
	8984	OMAHA	1497	1146	67489	70132	579	741	49942	5120
	8998	SAN ANTONIC	5285	43561	43710	92556	1637	24020	33075	587.
	DISTRICT	B(SOUTH CENTRAL)	111212	126098	748823	986133	32837	71086	553744	65760
	9804	ST. LOUIS	11831	1815	113329	126975	3466	1133	83040	876
		CHICAGO	34084	15020	133635	182739	11377	7883	100633	11989
		DES MOINES	1704	1368	65926	68998	622	840	48419	498
		DETROIT	19304	2826	104963	127093	6466	1741	76694	849(
		INDIANAPOLIS	6979	1705	95632	104316	2289	1017	69065	7237
		LANSING	7686	2841	97196	107723	2818	1637	70869	7532
		MINNEAPOLIS	2043		148487	152381	800	1174	109866	11184
				1851	107208	132381	1289	1048	78706	B104
		MILWAUKEE 9 (NORTH CENTRAL)	3895	1978	866376	983306	29127	16475	637292	68285
	DIDIKICI	7 (AUKIN LEAIKAL)	87526	29404	6663/6	102200	27127	10419	037272	0010
		SAN FRANCISCO	13693	26043	132662	172398	5525	16050	100884	1224
		SEATTLE	4528	470B	135010	144246	1795	2865	101687	10634
		LOS ANGELES	28954	69137	144224	242315	11705	36356	109692	15775
	12989	PHOENIX	5420	17786	128868	152074	1989	10895	76340	10922
	12990	PORTLAND	1284	3051	80921	<b>85</b> 256	505	1746	60362	6261
	17005	SACRAMENTO	6562	24216	95708	126486	2428	12974	70806	8620
	14174			27070	110308	144062	2677	14606	83899	10118
		SAN DIEGO	6684	21010	110000	144007	ZUII	11000	03017	10110
	12999	SAN DIEGO 12(WEST)	67125	172011	827701	1066837	26624	95492	623672	74578
	12999	12(WEST)		172011	827701		26624		623672	

FY	STATION NUMBER	NANE				ADUATES Total		NILITAPY HISPANIC		(DHA) Total	
1990	1922	ALBANY	3038	1437	79980	B4455	1037	843	<b>585</b> 70	60450	
••••		BOSTON	5681	2799	128192	136672	1793	1610	96554	99957	
		BUFFALC	4369	1380	60208	65957	1588	770	44337	46695	
		HARTFORD	7054	3585	76693	87332	2389	1847	57927	62163	
	1965	LONS ISLAND	11971	7922	81888	101781	4700	4793	62305	71798	
	1971	NANCHESTER	381	<b>6</b> 30	54653	55664	139	404	40422	40965	
		NEWARK	14408	10518	104638	129564	4859	5658	79556	90073	
		NEW YORK CITY	28732	19703	47435	95870	8169	9965	36114	54248	
	DISTRICT	1 (NORTHEAST)	75634	47974	633687	757295	24674	25890	<b>475</b> 785	526349	
	4926	BALTIMORE	31240	3939	103367	138546	9708	2474	77297	B9479	
	4934	SD. CHARLESTON	1710	866	49457	52033	539	531	34530	35600	
		CINCINNATI	11452	1495	104903	117850	4254	905	76119	81278	
		CLEVELANC	11451	1941	94061	107453	4477	1089	68584	74150	
		LOUISVILLE	6361	1292	67111	74764	1910	745	47745	50400	
		PHILADELPHIA	21167	3247	104078	128492	6449	1767	78832	87048	
	_	HARRISBURG	2247	1016	89167	92432	819	522	63908	65249	
		PITTSBURG	5209	824	88794	94827	2064	491	64038	66583	
		RICHMOND	18707	1877	64750	85334	4689	1190	47581	53460	
	DISIRICI	4(HID-ATLANTIC)	109544	16499	765688	891731	34909	9704	558634	603247	
	6928	BIRMINGHAM	37278	2462	81178	120918	9470	1497	58812	69779	
	6960	ORLANDO	17500	<b>83</b> 60	105024	131884	5190	4962	77932	88084	
		JACKSONVILLE	27036	20109	66289	113434	6629	12645	48655	67929	
		MACON	45971	3655	117310	166936	11077	2208	85688	98973	
		NASHVILLE	23448	2123	101121	126692	7029	1271	72759	81059	
		RALEIGH	31143	2726	94803	128672	7830	1556	67640	77026	
	DISTRICT	6(SO-ATLANTIC)	182376	39435	566725	788536	47225	24139	411486	482850	
	8924	ALBUQUERQUE	3523	29699	46735	79957	968	17679	34479	53126	
		DALLAS	21414	11154	96794	129362	7218	5715	71790	84723	
		DENVER	3939	10498	98351	112788	1572	6429	73675	81676	
		HOUSTON	19405	16887	73557	109850	5871	8569	55145	69585	
		KANSAS CITY	6731	2437	69776	78944	2195	1547	51464	5520ć	
		LITTLE ROCK	8974	1219	59693	69885	2292	707	42667	45666	
		NEW DRLEANS	28417	4053	72049	104519	6548	2530	52463	61541	
		OKLAHONA CITY	7274	2987	85807	96068	2551	1763	63295	67609	
		DMAHA San Antonio	1437	1135	64035	66607	556	739	47365	48660	
		B(SOUTH CENTRAL)	5023 106138	41797 121866	41711 708508	88531 936512	1555 31326	23024 68702	31562 523905	56141 623933	
	9804	ST. LOUIS	11620	1812	108083	121515	3408	1125	79211	83744	
	9936	CHICASO	33068	14956	126024	174048	11031	7844	94884	113759	
	9946	DES MOINES	1660	1366	62978	66004	603	835	46244	47687	
	9948	DETROIT	18677	2826	100303	121806	6251	1743	73279	. 81273	
		INDIANAPOLIS	6819	1713	91118	99650	2237	1017	62806	69060	
		LANSING	7460	2817	92051	102328	2738	1623	67108	71469	
		MINNEAPOLIS	2014	1871	141070	144955	789	1190	104413	106392	
		MILWAUKEE	3770	1966	101522	107258	1248	1031	74516	76795	
	DISTRICT	9(NORTH CENTRAL)	<b>85</b> 088	29327	823149	937564	28310	16408	605461	650179	
		SAN FRANCISCO	13033	25136	124643	162812	5256	15493	94775	115524	
		SEATTLE	4328	4653	128326	137307	1716	2829	96658	101203	
		LOS ANGELES	27093	65983	133716	226792	10955	34719	101706	147380	
		PHOENIX	5260	17602	124043	146905	1924	10788	92733	105445	
		PORTLAND	1250	3003	76752	81005	493	1717	57260	59470	
		SACRAMENTO	6231	23541	90530	120302	2294	12612	66957	81863	,
		SAN DIEGO	6365	26232	103696	136293	2546	14161	78873	95580	•
	DISTRICT	IZ(WEST)	63560	166150	781706		25184	92319	588962	706465	
	NATIONAL	TOTAL	622340		4279463 A-7	5323054	237162	3164233	3593023	518819	
	the other that form is				•• •						

# APPENDIX B

## CLUSTER SIZE AND COUNTY REPRESENTATION

Racial/ Ethnic Group	County Cluster <sup>a</sup>	Number of Profile Individuals in Cluster	Number of Counties Represented in Profile	Total Number of Counties in Cluster
Hispanic	1	112	20	540
	2	117	24	515
	3	117	29	1075
	4	101	43	1007
	Total	448	116	3137
Black	1	233	55	995
	2	206	41	787
	3	209	52	563
	4	209	62	792
	Total	857	210	3137
White/	1	289	98	1157
Other	2	282	72	516
	3	268	75	533
	4	792	150	654
	5	656	120	227
	Total	2287	515	3137

<sup>a</sup>See text for cluster definition.

### DISTRIBUTION LIST

Assistant Secretary of Defense (Force Management and Personnel) Defense Manpower Data Center, Arlington (4) Assistant Secretary of the Navy (Manpower and Reserve Affairs (OASN) (M&RA)

Deputy Assistant Secretary of the Navy (Manpower)

Assistant CNO for Long-Range Planning and MANTRAPERS (OP-01B6)

Assistant for MPT Research and Development and Studies (OP-01B7)

Head, Enlisted Strength Planner (OP-135C)

Commander, Navy Recruiting Command (Code 22)

Commandant of the Marine Corps (MPI-20)

Commander, Air Force Human Resources Laboratory, Brooks Air Force Base, Manpower and Personnel Division (AFHRL/MO)

Commander, Air Force Human Resources Laboratory, Brooks Air Force Base, TSRL/Technical Library (FL 2870)

Superintendent, Naval Postgraduate School

Director of Research, U.S. Naval Academy

Defense Technical Information Center (DTIC) (2)