A RAND NOTE

TWO-YEAR COLLEGES AND VOCATIONAL SCHOOLS
AS SOURCES OF MILITARY MANPOWER

Richard J. Shavelson, Gus W. Haggstrom,
Thomas J. Blaschke

October 1984

N-2193-MIL

Prepared for

The Office of the Assistant Secretary of Defense/
Manpower, Installations and Logistics

Rand
1700 MAIN STREET
P.O. BOX 2138
SANTA MONICA, CA 90406-2138

The research described in this report was sponsored by the Office of the Assistant Secretary of Defense/Manpower, Installations and Logistics under Contract MDA903-83-C-0047.

The Rand Publications Series: The Report is the principal publication documenting and transmitting Rand's major research findings and final research results. The Rand Note reports other outputs of sponsored research for general distribution. Publications of The Rand Corporation do not necessarily reflect the opinions or policies of the sponsors of Rand research.

Published by The Rand Corporation

A RAND NOTE

TWO-YEAR COLLEGES AND VOCATIONAL SCHOOLS AS SOURCES OF MILITARY MANPOWER

Richard J. Shavelson, Gus W. Haggstrom, Thomas J. Blaschke

October 1984

N-2193-MIL

Prepared for

The Office of the Assistant Secretary of Defense/ Manpower, Installations and Logistics

Rand
1700 MAIN STREET
P.O. BOX 2138
SANTA MONICA, CA 90406-2138

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

PREFACE

This Note is a progress report on the findings of the Rand research project, "Exploratory Studies of the Recruiting Market in Two-Year Colleges and Postsecondary Vocational Schools." It builds on work presented in an earlier Note: Shavelson et al., *Potential for Military Recruiting from Two-Year Colleges and Postsecondary Vocational Schools*, The Rand Corporation, N-1946-MRAL, January 1983.

Over the next eight years, the military services' requirements for "high-quality" recruits are projected to increase, while the size of the manpower pool continues to shrink. The two-year colleges and postsecondary vocational schools may provide a recruiting market that can be tapped to fill the military's manpower requirements. This study examines the recruiting potential of these institutions and assesses the military's current recruiting programs for attracting enlistees with one or more years of postsecondary education.

SUMMARY

Recruiting shortfalls might well be expected in the next eight years because, as the military's requirements for high-quality personnel increase, the number of high school graduates will decline. This study examines the recruiting potential of two-year colleges and postsecondary vocational schools as a means for meeting the military's needs for nonprior service (NPS) high school graduates in the next decade. The purposes of the study are to ascertain whether there are sufficient numbers of potential high-quality enlistees in these institutions to warrant special recruiting efforts and to assess the military's current recruitment programs for attracting recruits having a year or more of postsecondary education.

We find that these institutions contain sufficiently large numbers of men of enlistment age--roughly 800,000 to 1,000,000 in any given year--to constitute an attractive recruiting market. However, a large number of these students are prior servicemen--perhaps as many as 300,000.

With respect to the quality of students, virtually all two-year college freshmen are high school graduates, single, and within the prime recruiting age range (18-21 years). More than half report that they are above average in scholastic performance, and available test data indicate that the majority are above average in ability.

To date, the two-year colleges and postsecondary vocational schools have not supplied large numbers of NPS accessions. Contrary to popular belief, the services actively recruit from these institutions, and they have designed four programs specifically tailored to penetrate this market. Current recruiting consists of direct contacts with students by recruiters whose assigned areas include these institutions and contacts by (other) recruiters when students return home for holidays and vacations. The results of special programs by the Army, Navy, and Marine Corps to attract recruits from the two-year colleges and vocational schools have not produced large numbers of enlistees; these attempts highlight the difficulties associated with recruiting in this market and provide lessons for designing new programs.

To identify recruiting tactics and incentives that are effective in recruiting from postsecondary collegiate institutions, we sought recruiting "hot spots" across the nation. This search proved futile. College enlistment rates appear to be uniformly low across the nation. However, an examination of college enlistment rates using regression techniques shows some variation across areas associated with economic and demographic factors. Interestingly, areas with high proportions of students enrolled in two-year colleges have significantly higher college enlistment rates. After accounting for economic and demographic factors known or suspected to be associated with enlistment rates, we could isolate no areas that exhibited extraordinary numbers of enlistments with some college, given the sizes of the college population in those areas.

As a final attempt to identify recruiting tactics and incentives that might prove successful in penetrating the market, "successful" Army and Air Force recruiters--recruiters who had recruited seven or more individuals with one to three years of college--were interviewed along with regular recruiters. Successful and regular recruiters did not differ markedly either in personal characteristics or in recruiting tactics used with postsecondary students. Their characterization of the similarities and differences between the high school and college markets and their recommendations for increasing accessions from two-year colleges and vocational schools may prove helpful in formulating future recruiting programs.

Our findings suggest that recruiting in the two-year colleges and vocational schools may be considerably more costly than recruiting in high schools. Special enlistment incentives may be required, as well as special procedures for selecting and training recruiters. Also, it appears possible that the effectiveness of high school recruiting could be diminished by diverting outstanding recruiters from high schools into colleges and vocational schools. As yet, no systematic attempt has been made to determine whether enlistees from these postsecondary institutions perform better in the military than do high school graduates, but we have found that enlistees with one or more years of postsecondary education have lower attrition rates than those with less

education. The question remains, "Are two-year college and vocational school students worth the extra effort and cost?" In deciding whether to develop a recruiting program specifically designed for the target market, these issues deserve serious consideration.

ACKNOWLEDGMENTS

We are indebted to Steve Sellman of Accession Policy, Zahava Doering and Sue Bridges of the Defense Manpower Data Center, and Richard Fernandez of The Rand Corporation for their careful and constructive reviews of this Note. However, we alone are responsible for any shortcomings.

CONTENTS

PREFACE iii

SUMMARY v

ACKNOWLEDGMENTS ix

FIGURES xiii

TABLES xv

Section
I. INTRODUCTION 1

II. CHARACTERISTICS OF TWO-YEAR COLLEGES AND POSTSECONDARY VOCATIONAL SCHOOLS 4
The Institutions 4
The Two-Year Colleges 6
Summary 11

III. RECRUITING PROGRAMS 12
Current Recruiting Policy 14
Recruiting Programs Designed for the Market 14
Summary and Implications for Recruiting 21

IV. THE SEARCH FOR RECRUITING HOT SPOTS 25

V. RECRUITERS' VIEWS OF THE TARGET MARKET AND RECOMMENDATIONS FOR PENETRATING IT 53
Identification of Successful Recruiters 54
Procedures for Conducting the Interviews 57
Findings from Interviews with Successful and Regular Recruiters 58
Summary and Implications for Recruiting 68

VI. CONCLUSIONS AND RECOMMENDATIONS 72
Monitor the Postsecondary Market 72
Conduct Additional Research on the Postsecondary Market 73

Appendix
COLLEGE RECRUITING PERFORMANCE MEASURES BY STATE AND LARGE METROPOLITAN AREA 77

REFERENCES 89

FIGURES

2.1. Aptitude of males by postsecondary school plans: High School and Beyond aptitude test battery 8

2.2. Percentage of FY82 NPS male enlistments in mental categories I-IIIA by educational attainment 9

2.3. First-term attrition as of September 1981: males in the FY78 cohort 10

3.1. Targets of recruiting opportunity in two-year colleges and vocational schools 13

4.1. Accessions with some college per 1000 in college population base, by state 31

4.2. College population base 38

4.3. Full-time enrollment in two-year colleges 39

4.4. Number of accessions with some college, FY82 40

4.5. Accessions with some college per 1000 in college population base, by Military Enlistment Processing Station 41

5.1. MEPS with "successful" recruiters 56

TABLES

2.1. Characteristics of Freshmen in Two-Year Colleges 7

3.1. Recruiter Assignments to the Army College Recruiting Program 15

3.2. Army College Recruiting Program's Strategies for Recruiting in Market 17

3.3. NPS Accessions into Marine Corps CCEP 18

4.1. College Recruiting Performance Measures by State, Fiscal Year 1982 28

4.2. Recruiting Performance Measures by Location, Fiscal Year 1982 34

4.3. Logistic Regression Equations Relating College Enlistment Rates to Factors Affecting Recruiting (SMSAs, NECMAs, and Nonmetropolitan Areas for Each State) 46

4.4. Logistic Regression Equations Relating College Enlistment Rates to Factors Affecting Recruiting (Large Metropolitan Areas and Their Relative Complements Within States) 48

4.5. Logistic Regression Equations Relating College Enlistment Rates to Factors Affecting Recruiting (50 States and D.C., and MEPS Areas) 50

5.1. Distributions of Accessions with Some College per Recruiter 55

5.2. Recruiters' Perceptions of High Schools and Postsecondary Institutions 59

5.3. Recruiters' Perceptions of Students 61

5.4. Recruiters' Recommendations for Recruiting from the Postsecondary Market 66

A.1. College Recruiting Performance Measures by State and Large Metropolitan Area, Fiscal Year 1982 79

I. INTRODUCTION

Although accession goals are currently being achieved, recruiting shortfalls might well arise in the near future unless military recruiting markets are expanded and recruiting and compensation strategies changed (Korb, 1982; Weinberger, 1982). Concern about potential near-term recruiting shortfalls comes, in part, from projections that the number of male enlistees with high school diplomas, as a percentage of the number of male high school graduates, will have to rise from 15.2 percent in 1981 to 18.8 percent in 1990 in order to meet currently projected recruiting requirements (Shavelson, Haggstrom, and Winkler, 1983). Military recruiting, then, will have to increase by one-fourth its "take" of nonprior service (NPS) male high school graduates aged 17-21 years.

To prepare for increasing, or at least maintaining, the number of male NPS high school graduate enlistees, this study examines an alternative recruiting market--the two-year colleges and postsecondary vocational schools. There are several reasons for doing so. The reasoning goes as follows. Most students in these institutions are high school graduates and are above average in ability. Unlike their peers who enter four-year colleges or take jobs in the civilian labor force, they might be seeking job skills or financial support for additional education--opportunities that military service can provide. Since large numbers of students attend these institutions, the market is large enough to be considered a secondary recruiting market, with the added attraction that students are concentrated in easily identified locations. For these and other reasons, two-year colleges and vocational schools appear to be a potentially favorable recruiting market.

The purposes of this study, in broad terms, are to examine data on this postsecondary education market--the institutions and their students--to ascertain whether (a) there are sufficient numbers of potential enlistees in these institutions for recruiting to prove fruitful, (b) most of the students in the market meet enlistment

standards, (c) the market can be penetrated, and (d) enlistees from the market perform well as military personnel. Particular attention is paid to factors affecting market penetrability.

In Section II, we briefly review and update the findings on the institutions and their students (see Shavelson et al., 1983). Our findings, by and large, support accession policymakers' sense that these institutions contain sufficiently large numbers of men of enlistment age to warrant consideration as a secondary recruiting market. Virtually all freshman are high school graduates, single, and within the prime recruiting age range (18-21 years). More than half report that they are above average in academic ability.

In Section III, we describe recent attempts by the Army, Navy, and Marine Corps to penetrate the market. These branches have made several attempts to recruit from these postsecondary institutions. To date, they have not produced large numbers of enlistees.

Section IV examines college enlistment rates by states and other geographical areas. This examination was undertaken to isolate economic and demographic factors related to college recruiting and to pinpoint locations that provide unusually large numbers of enlistees with college education. The search for recruiting "hot spots" was motivated by the expectation that, if unusually effective recruiting areas could be found, recruiting strategies that were effective in those areas might be transported to other recruiting areas. This search, however, proved futile. Once economic and demographic factors are accounted for, penetration rates vary little across the nation.

The fifth section presents the findings from interviews of recruiters who were identified as unusually successful in recruiting from the target market. These "successful" recruiters were surprised to find that they had been singled out as being unusually successful. They did not differ markedly from regular recruiters either in personal characteristics or in the recruiting tactics that they employed. However, the recruiters' characterizations of the differences between high school and postsecondary students and their suggestions for increasing the number of enlistees from the postsecondary schools may prove helpful in formulating a recruiting program for the market.

Section VI presents our *tentative* recommendations. They focus on additional information needed to evaluate the recruiting potential of the market for two reasons. First, this study, to date, has documented the difficulty encountered by past recruitment efforts and the inherent uncertainty of the market. Second, this Note is a progress report; substantial work remains to be completed before recruiting recommendations can be made with some confidence.

II. CHARACTERISTICS OF TWO-YEAR COLLEGES AND POSTSECONDARY VOCATIONAL SCHOOLS

This section briefly characterizes two-year colleges and postsecondary vocational schools, and the students attending these institutions. Portions of this section are drawn from our earlier work (Shavelson et al., 1983), which provides a more comprehensive treatment.

THE INSTITUTIONS

The institutions of interest in this study are the postsecondary educational institutions that offer degrees and certificates below the bachelor's degree. These institutions may be either collegiate or noncollegiate, public or private.

Characteristics of Noncollegiate Institutions

Noncollegiate institutions include publicly supported institutions such as adult education centers and area vocational schools, private nonprofit occupational institutes, and specialized proprietary institutions such as cosmetology schools, business/office colleges, and flight training schools. All emphasize occupational training. In 1980, there were 7,625 such institutions (812 public and 6,813 private) enrolling roughly 1.5 million students. The mean enrollment in the public institutions was 556 students while the mean enrollment in the private schools was 153 students (Broyles and Davis, 1982; Pepin and Wells, 1981).

Characteristics of Collegiate Institutions

Within collegiate institutions, we distinguish two- and four-year institutions and focus on the former. A two-year college is accredited to award an associate degree as its highest degree. This definition encompasses junior colleges, characterized as academic; community colleges, characterized by their broad curricula covering academic, vocational, and remedial education; and technical institutions, characterized by their vocational curricula. Compared to noncollegiate

institutions, two-year colleges are fewer in number but have much larger student bodies. The National Center for Education Statistics (NCES; Broyles and Davis, 1982) estimated that, in 1980, there were 1,289 two-year colleges (949 public and 340 private) enrolling roughly 4.5 million students (4,069,462 in public and 180,565 in private colleges).[1] The greatest market density for potential enlistees exists in public two-year colleges with a mean enrollment of 4,395 students as compared to 663 in private two-year colleges.

Whether public or private, large or small, two-year colleges are widely dispersed and found in every state and several territories. Yet, the two-year colleges are mainly concentrated in 10 populous states: California, Florida, Illinois, Michigan, New York, North Carolina, Ohio, Pennsylvania, Texas, and Washington. These 10 states account for roughly 50 percent of all two-year colleges and almost 70 percent of all students enrolled in them (Shavelson et al., 1983).

Over the past ten years, the major source of financial support for public, two-year colleges has shifted from the community to the state. Today, state aid provides 60 percent of the income for these colleges.

In this era of fiscal retrenchment and deficit spending by states, student enrollments take on particular significance to these institutions since their revenues depend primarily on attendance. For this reason, military recruiting is viewed by these institutions as a potential competitor for their students, their financial source of survival (personal communication, D. Parnell, President, American Association of Community and Junior Colleges, May 1983). If military recruiting threatens to reduce their enrollments, either indirectly by reducing the size of their share of the high school graduate market or, more importantly, by recruiting their students, these institutions may resist military recruiting on their campuses. However, to the extent that the military provides funding for their students and jobs for their graduates, these institutions will probably prove to be cooperative and will help facilitate recruiting.

---

[1]Data on private-college enrollments are from 1978; a total of 4,425,637 two-year college enrollments was reported by Dearman and Plisko (1981).

THE TWO-YEAR COLLEGES

From their characteristics and overall enrollments, two-year colleges appear to provide a potentially important secondary recruiting market, especially if recruiting can be carried out in a manner perceived by these institutions as cooperative. However, a closer look at the students themselves may reveal limitations. Many might not meet enlistment standards, and those that do may be unwilling to consider military service as an occupational alternative. We consider, here, the extent to which these colleges have high quality men and women that the military seeks to recruit.

Numbers of Students

Unfortunately, estimates of the number of males and females falling in the 18 to 21 year age range vary from one data base to another. NCES estimated opening fall 1980 enrollment in two-year colleges at about 4.5 million; the Bureau of the Census estimated about 3.1 million. The former is probably an overestimate because many students enroll in the fall but fail to complete a single term; the latter is probably an underestimate because of the difficulty of adequately counting students in a survey, particularly the transient, older, and part-time students.

For sex and age breakdowns of two-year enrollments, the best data available are provided by the Bureau of the Census (1980). Of the estimated 3.1 million students enrolled in 1980, 42 percent (1.3 million) were males and 55 percent of these men (721,000) were between 18 and 21. Seventy-nine percent of the 18 to 21 year old men (570,000) were full-time students. Of the 1.8 million women, 45 percent fell within the prime age range and of these roughly 800,000 students, 75 percent were full-time (600,000).

Profile of Two-Year College Students

Intuition suggests that most two-year college freshmen are single high school graduates who are above average in ability. Data on the two-year college freshman classes of 1981 and 1982 (Astin et al., 1981, 1982) give credence to this intuition (see Table 2.1).

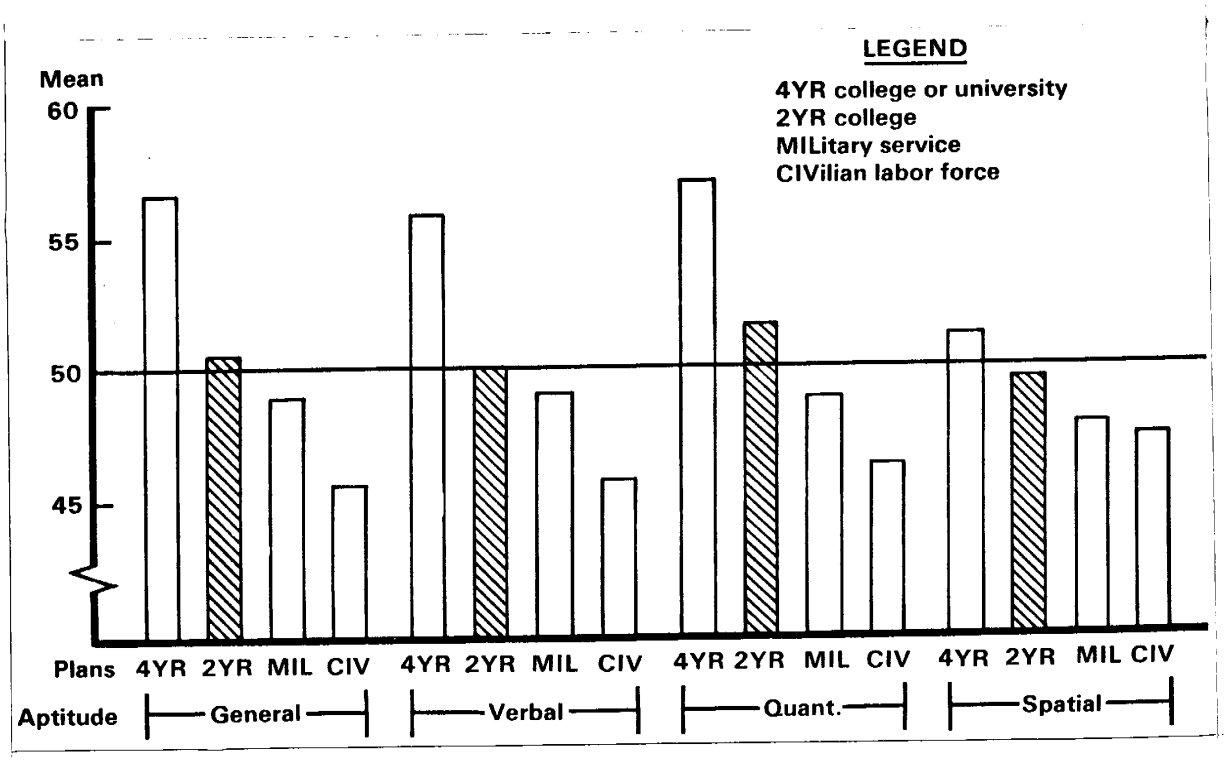
Table 2.1

CHARACTERISTICS OF FRESHMEN IN TWO-YEAR COLLEGES

	Percent of Two-Year College Freshmen[a]			
	Males		Females	
Manpower Needs	1981	1982	1981	1982
High school				
Graduates	98.0	98.4	97.9	98.2
GED	1.3	1.1	1.3	1.3
Above average				
>B average in high school	47.5	48.4	65.1	65.7
In top 40% of class	44.8	44.3	52.6	51.6
Single	99.1	98.3	98.3	98.0
Prime age range (18-21 years)	94.8	96.4	92.8	94.2
No disability	93.5	93.3	93.7	94.0

[a] Full-time freshmen with no prior college experience. From Astin et al. (1981, 1982).

The ability data for the freshman classes, however, are based on self-reports, not aptitude or achievement tests. To validate these self-reports, we examined aptitude test scores for 1980 high school seniors planning to enter two-year colleges and other postsecondary sectors (four-year colleges, the civilian labor force, or military service; Shavelson et al., 1983). Data on high school seniors planning to enter these various postsecondary sectors were used because the only other representative aptitude data were over 10 years old (Kanouse et al., 1980). Nevertheless, analyses of these older aptitude data based on seniors planning to enter the four sectors in the spring of 1972, and those seniors who actually entered those sectors in the fall of 1972, revealed virtually identical aptitude profiles (Shavelson et al., 1983). For this reason, the aptitude profile of 1980 seniors planning to enter one or another of the four sectors was interpreted as a reasonably accurate ability profile of the freshman class of 1980, and is presented in Fig. 2.1. (In this figure, general aptitude is a composite of



SOURCE: Shavelson et al., 1983.

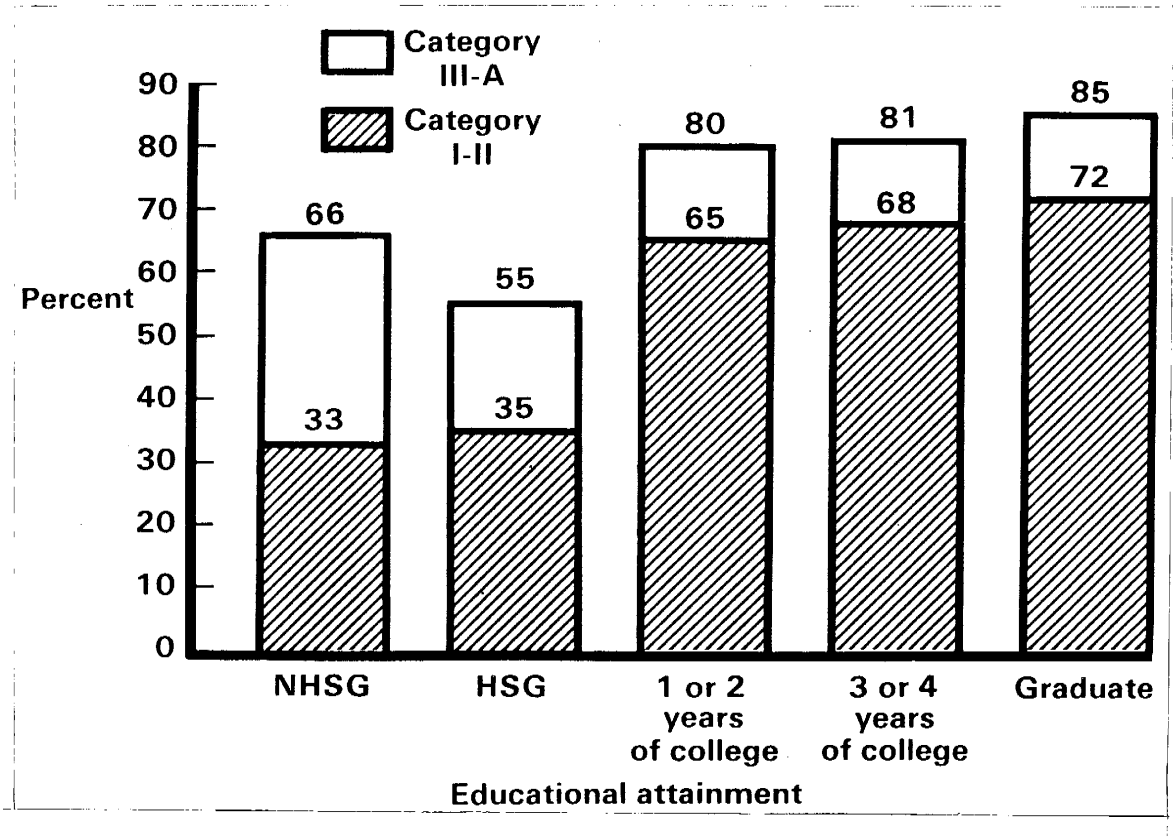
Fig. 2.1 -- Aptitude of males by postsecondary school plans: High School and Beyond aptitude test battery

verbal, quantitative, and spatial aptitudes; the scores on each aptitude measure are standard scores with a mean of 50 and a standard deviation of 10.) These data confirm the students' verbal reports and accession policymakers' intuition. On average, students planning to enter two-year colleges have aptitude test scores that fall at or close to the population mean; they tend to score lower than students planning to enter four-year colleges but higher than students planning to enter military service or the civilian labor force.

We also checked whether the aptitude profile of the FY82 accessions with one or two years of college reflected the higher ability profile of the two-year college students. To this end, we compared mean Armed Forces Qualification Test (AFQT) scores across educational attainment

categories of 1982 nonprior service (NPS) enlistees (Fig. 2.2).[2] The AFQT data in Fig 2.2 reflect the higher quality that was observed in the college populations presented in Fig. 2.1. Enlistees from two-year colleges, then, might be expected, on average, to have higher AFQT scores than enlistees without a college background.

As a final step in determining the "quality" of the students in the target market, we sought data on the "performance" of enlistees from the high school and college markets (Shavelson et al., 1983). In this

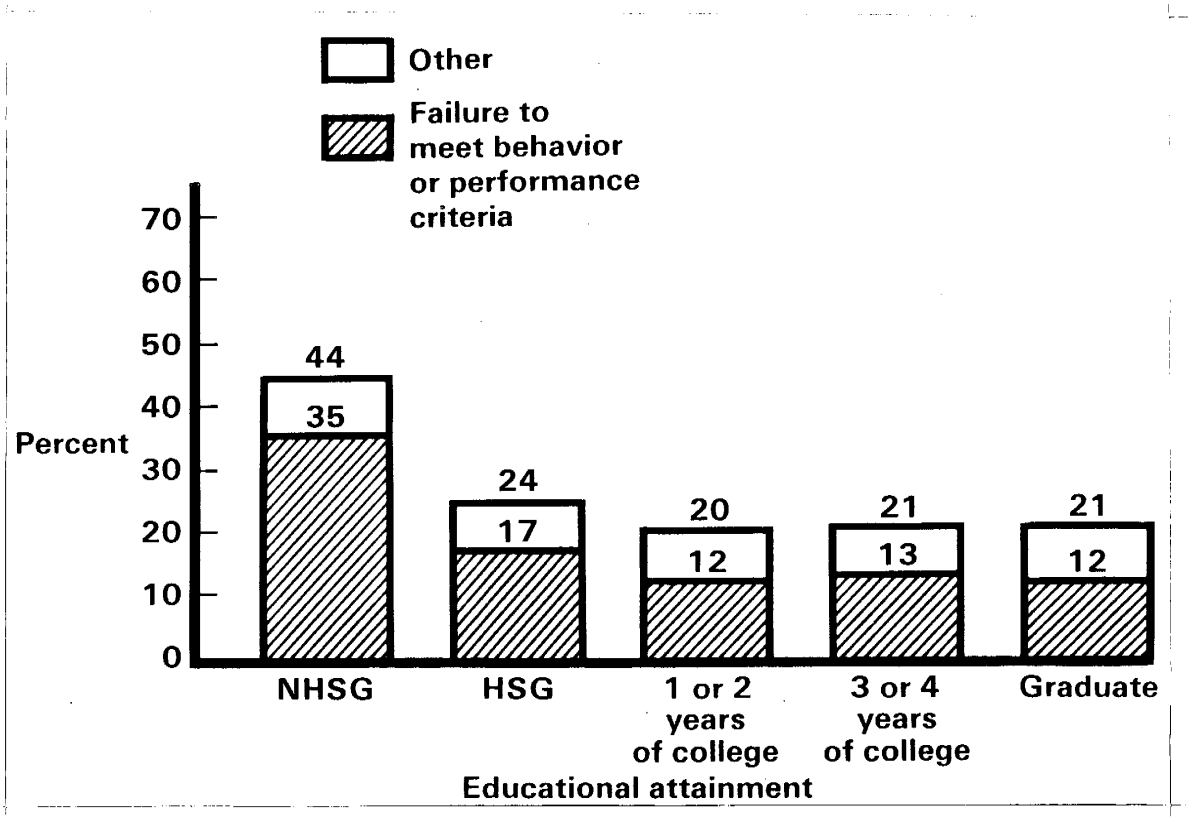


SOURCE: Shavelson et al., 1983.

Fig. 2.2 -- Percentage of FY82 NPS male enlistments in mental categories I-IIIA by educational attainment

[2]Unfortunately, NPS accession data at the DoD level do not permit us to determine whether an enlistee with some college came from a two- or four-year college. Moreover, the data set does not permit us to identify those enlistees who left college to enter military service before they completed a full year of their postsecondary education.

analysis, we examined first-term attrition and reasons for leaving the service. The data came from the cohort of NPS enlistees who entered military service in FY78 and served through September of 1981. We were especially interested in attrition, reasoning that military life might represent a bigger adjustment for enlistees with some college, leading them to separate before their first term was completed. This clearly was not the case (Fig. 2.3). Enlistees with some college had lower attrition than other enlistees, and the former were less likely to separate because of a failure to meet behavior or performance criteria.



SOURCE: Shavelson et al., 1983.

Fig. 2.3 -- First-term attrition as of September 1981: males in the FY78 cohort

SUMMARY

The two-year colleges and postsecondary vocational schools are small in number and enrollments compared to high schools, but sufficiently large to be considered a secondary recruiting market. Of the public and private, collegiate and noncollegiate institutions, public two-year colleges have, by far, the greatest enrollments. Moreover, roughly 50 percent of these institutions and 70 percent of the students can be found in just 10 populous states, further increasing market density. Although attractive, these institutions may view military recruiting as a potential competitor for high school graduates and their students.

Freshman entering these institutions meet intuitive expectations. Virtually all are high school graduates, fall within the prime recruiting age range, are single, and most are above average in ability. Moreover, NPS accessions with some college background reflect the ability distribution of students in two- and four-year colleges.

III. RECRUITING PROGRAMS

Contrary to popular belief, the military currently recruits two-year college and postsecondary vocational school students and has, over the past three years, launched three programs and designed another specifically to increase the number of accessions from these schools. These students are currently recruited in their postsecondary institutions or at their homes. If a postsecondary institution falls within a recruiting area, the recruiter is expected to make his or her presence known to administrators, faculty, and students. Since hometown recruiters normally follow up high school graduates for two years after graduation, postsecondary students are also contacted, especially during holidays and vacation, by their local recruiters. (For details, see Section V.)

To help locate the four programs specifically designed for two-year colleges and vocational schools in relation to other postsecondary sectors, a schematic of the market is presented in Fig. 3.1. Students graduating from high school enter the two-year colleges, vocational schools, or other postsecondary-school sectors. For those students entering the two-year colleges and vocational schools, the military has three targets of recruiting opportunity: (1) when students enter these institutions, (2) when they stop out of them,[1] and (3) when they graduate.

Special incentives for Target 1, the *entry* phase, might include scholarships in academic or occupational programs with commitments to enlist in critical occupational specialties after graduation. However, since students and their parents have traditionally financed their education in two-year colleges and vocational schools, the services have avoided this alternative. The cost of scholarships (etc.) might outweigh the return on such investments, and therefore less risky incentives are sought such as those that might be identified at Targets

[1]The term, "stop out," is used to describe students instead of "drop out" because stop outs are likely to return to school the next semester or academic year whereas drop outs do not.

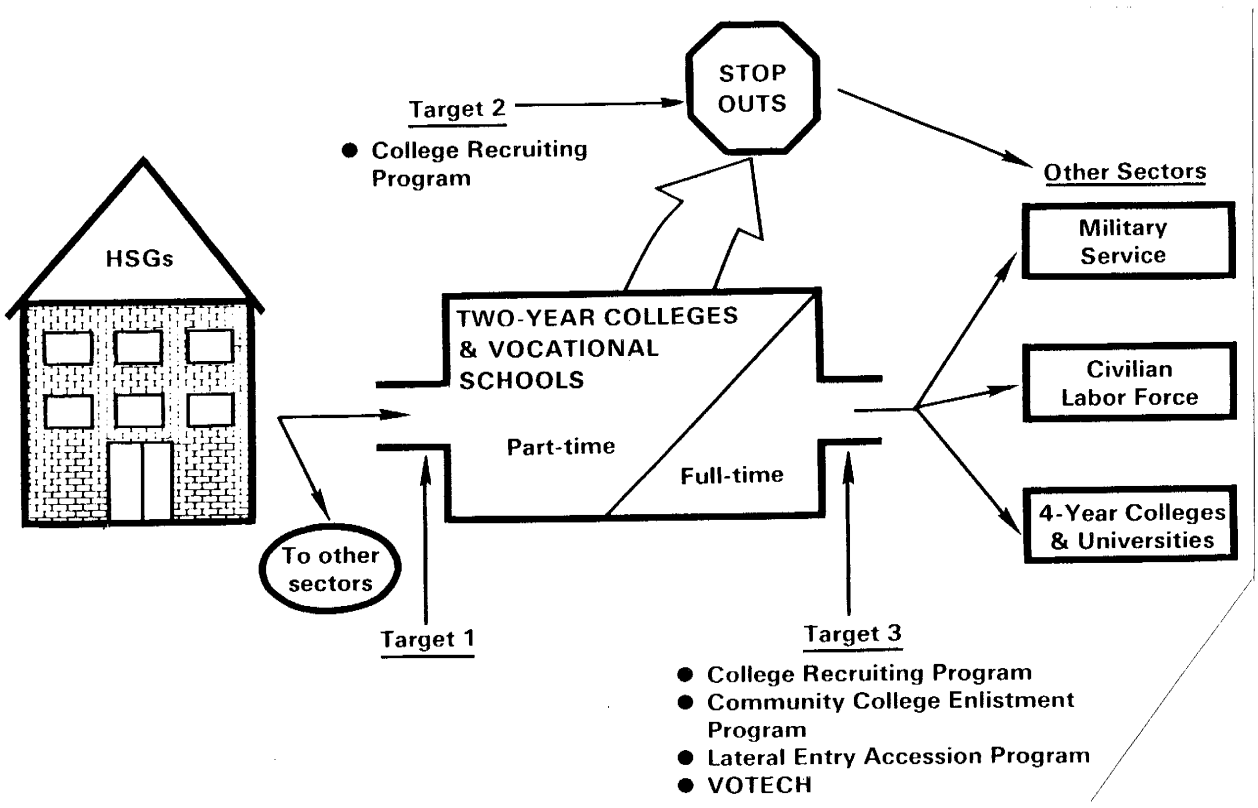


Fig. 3.1 -- Targets of recruiting opportunity in two-year colleges and vocational schools

2 and 3. Hence, to date, special incentives for attracting students at entry to two-year colleges have not been pursued. Nevertheless, this is one target area where two-year colleges would be economically motivated to cooperate with military recruiting.

Target 2 reflects a characteristic of the market, namely, the high turnover of students. Many students "stop out" of school for academic, financial, or personal reasons, and the provision of postservice educational benefits, enlistment bonuses, and job skill training may be particularly attractive to these students by enabling them to continue their education after military service. Although a temptation to military recruiters, these students represent a recruiting target that potentially conflicts with the goals and economic necessities of the institutions. Recruiting these students would directly conflict with the institutions' attempts to bring the students back into the "fold."

Perhaps this greater potential for conflict than cooperation with the postsecondary educational institutions explains why only one of the four programs designed to penetrate the market has focused on stop outs.

The third target--the graduates--might be addressed by providing jobs at advanced pay grades (based on college units completed), or additional education (e.g., ROTC, educational benefits, certain skill training, bonuses). The institutions are quite likely to cooperate with recruiting objectives geared to their graduates. For this reason, and because graduates are easier to identify than stop outs, each of the four programs has focused on recruiting graduates.

CURRENT RECRUITING POLICY

Each of the four services has a policy that directs recruiters to follow up high school seniors for two years after they graduate. This means that recruiters periodically contact postsecondary students, especially at their homes during vacation times. In addition, recruiters are required to make routine contact with these institutions and to make their presence known to students, faculty, and administrative staff. Thus, two-year college students are not being ignored by recruiters at present.

A major difference between the high school market and the two-year college market is that, although most students live with their parents within a 50 mile radius of the college, they are dispersed across many recruiting areas, whereas most high school students live within the same recruiter's recruiting area. Hence, a recruiter working the two-year college market may lose a potential recruit to the home recruiter, and quotas are not met by numerous "assists." Given this uncertainty, recruiters may be reluctant to work the colleges extensively; the high school market is more certain and, by virtue of its size, promises a bigger and more direct payoff.

RECRUITING PROGRAMS DESIGNED FOR THE MARKET

In the past three years, the Army's College Recruiting Program, the Marine Corps' Community College Enlistment Program, and the Navy's Lateral Entry Accession Program and Vocational and Technical Skills Training Project have been designed specifically to increase enlistees

from the market, and the first three have been implemented. To date, none of those implemented have been overwhelmingly successful but all provide important insights for improving recruitment strategies. For this reason, each is reviewed briefly here.

Army College Recruiting Program

The purpose of the Army's College Recruiting Program (CRP) was to "increase accessions in mental categories (MC) I-III from the nation's colleges and universities for the Army, and to support officer procurement programs" (USAREC Regulation No. 601-75, p. 1, February 2, 1982). Early in FY80, U.S. Army Recruiting Command (USAREC) received Congressional authority to add 255 active Army recruiters in an attempt to penetrate two- and four-year colleges. College-designated CRP recruiters were required to fill a minimum of two active Army contracts per month with NPS high school graduates in categories I-III. Category IV and prior service contracts were credited only as overproduction.

In order to comply with USAREC Regulation No. 601-75, District Recruiting Commands (DRCs) absorbed the cost of the CRP until the U.S. Army Recruiting Command formally authorized the CRP recruiters. Although most DRCs tried to implement the program and, in many cases, assigned proven successful recruiters to the CRP, initial difficulties launching the program foreshadowed additional problems. CRP recruiters never reached full strength in terms of the number actually authorized by the U.S. Army Recruiting Command (190) or assigned (Table 3.1). Indeed, data on CRP assignments for the 1981 calendar year reflect the

Table 3.1

RECRUITER ASSIGNMENTS TO THE
ARMY COLLEGE RECRUITING PROGRAM

College Recruiters	February 1981	July 1981	January 1982
Authorized[a]	65	150	190
Assigned	147	102	110

[a] Goal=255 college recruiters.

DRCs' initial enthusiasm for the program, the lag and shortfall in recruiter authorizations, and the subsequent loss of enthusiasm as CRP assignments fell below authorizations (Table 3.1).

Potential conflict with the colleges over competition for their students became a concern. USAREC issued guidelines to recruiting personnel to "reassure college officials that the Army wants students to stay in school and not seek to recruit students out of the classroom into the Active Army" (USAREC Regulation No. 601-75, p. B-1). Moreover, recognizing that recruiting for the Army Reserves presented much less of a threat to the colleges than for the Active Army, the Recruiting Command modified the CRP early in FY82 to include recruiting for the Army Reserve Components.

Nevertheless, even with these modifications, accession goals for the CRP were not realized. For example, average recruiter production per month for the first quarter of FY82 was 0.84 active contracts and 0.89 reserve contracts, totaling 1.73 contracts altogether (Memorandum from Lt. Col. D. L. Benchoff, Director, Program Analysis and Evaluation, USAREC, March 10, 1982).

In addition to shortfalls in staffing and contracts, and potential conflicts with colleges, the dual recruiter scheme--high school recruiters and college recruiters--proved devisive. High school recruiters were required to turn over to college recruiters any potential enlistee who had some college in his or her background.

It became apparent to Lt. Col. Benchoff and many others that "the college program has enjoyed less than overwhelming success across the command" (Memorandum, March 10, 1982). By early FY83, the CRP was phased into the existing management system. All recruiters now recruit in both the high schools and colleges. Nevertheless, the experience with the CRP gave rise to useful recommendations for recruiting in the market (USAREC Reg. No. 601-75), the most germaine of which are summarized in Table 3.2. These recommendations might enter into the design of new programs.

Table 3.2

ARMY COLLEGE RECRUITING PROGRAM'S STRATEGIES
FOR RECRUITING IN MARKET[a]

Links with Institutions

- Establish institutional links through college president.
- Assure officials that students will not be recruited out of their classrooms.
- Establish a point of contact and build a "stop out" list using such sources as:
  - Director of Student Affairs.
  - Placement officers.
  - Registrar.
  - Department chairmen.
  - Student government officers.
  - Veteran Administration representatives.
  - Students in the delayed entry program.
- Coordinate recruiting activities with ROTC program on campus.

Recruiter Strategies

- Assure college officials that students will not be recruited out of their classrooms.
- Emphasize to "stop outs" the possibility of continuing their education after military service.
- Be thoroughly knowledgeable about *all* Army programs, opportunities, and incentives.
- Use local advertising outlets.

Recruiter Selection

- Select recruiters who:
  - Understand college market.
  - Understand academic and political sensitivities of college communities.
  - Understand demographics of colleges.
  - Present outstanding appearance in uniform.
  - Manage budgets effectively.
  - Have a proven sales record.

[a] USAREC Reg. No. 601-75.

Marine Corps' Community College Enlistment Program

On August 6, 1981, the Commandant of the Marine Corps authorized the nationwide implementation of the Community College Enlistment Program (CCEP), effective October 1981. The program was open to men and women who met the usual enlistment standards and were second-year students, graduates with associate degrees, or students who had completed special college courses in areas such as welding, drafting, or electical construction. CCEP's goal was to obtain, using regular Marine Corps recruiters, 600 high-quality accessions annually who would fill any one of over 150 technical or administrative occupational specialties. Initially, enlistment incentives included a guaranteed occupational specialty, guaranteed four-year assignment in that specialty, appointment to private first class upon enlistment (E-2), consideration for promotion to corporal (E-4) upon completion of 13 months active duty (normally about 25 months), consideration for promotion to sergeant (E-5) after 25 months (normally 40 months), and bonuses for certain occupations. In FY82, guaranteed consideration for promotion to sergeant after 25 months of service was dropped.

Data on the extent to which CCEP met its goal of 600 NPS accessions are presented in Table 3.3. Over time, CCEP's enlistments have increased but the program has not yet met its goal. Apparently recruiters have experienced some success in enlisting community college students. Increases in enlistments, in large part, were attributed to "walk-ins" based on advertising, referrals from the officer procurement program in four-year colleges and universities, and unemployment (Lt.

Table 3.3

NPS ACCESSIONS INTO MARINE CORPS CCEP

Status	FY80	FY81	FY82	FY83	FY84 to 4/24
Enlistments	6	36	312	447	442
Accessions	1	29	196	376	420

Col. J. Murphy, Marine Corps Recruiting, CCEP, personal communication, April 1982).

Navy's Lateral Entry Accession Program

The Navy's Lateral Entry Accession Program (LEAP) was a small, experimental program that sought civilians whose skills could be used almost immediately to fill shortfalls in certain petty officer ratings. LEAP provided lateral entry into 13 critical ratings out of 76 general ratings at pay grades ranging from E-4 to E-6. Its goal was 250 lateral entry accessions per year.

In addition to the usual enlistment criteria, LEAP established the following requirements, depending upon pay grade: one to three years of vocational training, two to six years of job experience, and one-half to one year of supervisory experience. Perhaps LEAP's most unique feature was the requirement that the candidate pass a job-knowledge test in the critical rating for which the candidate applied.

The program was first implemented in Ohio and Michigan, two of the states hardest hit by the recession and unemployment, for the period August to December 1982. The program consisted of an extensive media (newspaper and radio) campaign aimed at those men in the civilian labor force and in two-year colleges and vocational schools most likely to qualify. In addition, Navy recruiters, with the assistance of educational specialists, were encouraged to establish links with two-year colleges and vocational schools in an effort to enlist college students into a delayed entry program (DEP). By enlisting students into the DEP, they could complete their educational programs, and LEAP did not openly compete with colleges for their students.

In the three and a half months, LEAP accounted for only 14 NPS lateral entry accessions. This number was attributed, in part, to the fact that the job-knowledge test proved to be extremely difficult to pass, not only for the enlistment candidates but also for men performing the critical jobs in the Navy (M. Baker, NPRDC, personal communication, May 1983).

LEAP was implemented four months later in Arkansas, Oklahoma, and North Central Texas. By June 1983, it became apparent that the market would not support an adequate number of lateral entry accessions. As a consequence, LEAP was replaced by a new program.

Navy's Vocational and Technical Skills Training Project

The Navy's current plan to penetrate the market--the Vocational and Technical Skills Training Project (VOTECH)--is an outgrowth of LEAP. It too focuses on lateral entry for NPS accessions into critical petty officer ratings. Unlike LEAP, however, VOTECH attempts to establish a reciprocal relationship with two-year colleges and vocational schools. The educational institutions, at their own expense, are expected to modify their existing curricula in order to establish degree or certificate programs that provide the knowledge and skills specified by the Navy as required for the ratings. In return, the Navy guarantees lateral entry to the graduates of these programs if they pass the Navy's job-knowledge test for the rating, in addition to meeting the usual NPS enlistment standards. The Navy stands to gain high-quality NPS accessions in critical skills while the colleges and vocational schools are able to attract talented students by offering a guaranteed job upon graduation.

VOTECH is in a formative stage. The concept has been presented to two-year colleges and vocational schools in California with a positive response. For example, approximately 585 schools received letters that briefly described VOTECH and were asked if they were interested and would like additional information. Over 400 schools responded; only two indicated a lack of interest. Nevertheless, problems that arise in establishing reciprocity between potential competitors will emerge as VOTECH is implemented. For example, what will happen if, as in LEAP, very few graduates pass the Navy's job-knowledge test? Furthermore, the payoff, NPS lateral entry accessions into critical ratings, will not be known for several years.

SUMMARY AND IMPLICATIONS FOR RECRUITING

Military recruiting is currently conducted in the two-year colleges and vocational schools. This recruiting comes about in two ways. First, recruiters typically follow up students for a year or two after they graduate from high school. Those students pursuing higher education will be contacted by recruiters, especially during holidays and vacations. Second, recruiters are expected to treat two-year colleges and vocational schools in their recruiting areas in much the same manner as high schools, making contact with administrators and students.

The Army, Marine Corps, and Navy have launched recruiting programs specifically designed to increase enlistments from two-year colleges and vocational schools. The Army assigned college designated recruiters to the market; the Marine Corps offered rapid advancement through its ranks; and the Navy offered lateral entry into critical petty officer ratings upon passing a job-knowledge test. None of these programs met its recruiting goal, but each attests to the difficulties of recruiting postsecondary students.

Each of these programs provides important lessons for designing new programs. To be successful, recruiting programs probably should encompass the features discussed below.

Cooperation Between the Postsecondary Institutions and Military Recruiters

Cooperation seems most likely to occur through the military's providing financial support for students (e.g., scholarships, for entering students, with a service requirement); by providing jobs to graduates in occupational specialities for which they have been trained, perhaps with lateral entry; or by expanding programs of financial support for talented students to complete a bachelor's degree (e.g., ROTC).

Conflict may arise when military recruiting focuses on stop outs--those students who enter and leave two-year colleges each semester or academic year. The institutions are motivated to bring them back into the fold. These students might be more likely to be attracted by

financial, educational, and job-skill benefits than students who remain in school and graduate.

For military recruiting to be successful in this market, especially as enlistment incentives are presently conceived, a compromise needs to be found that will enable the military to recruit stop outs and yet not conflict with the educational goals or financial well-being of the institutions. For example, in return for lists of stop outs from the schools, the services might offer lists of separatees planning to return to the same area. These lists might include separatees' academic credentials based on prior education and academic credits gained during military service. Whether such arrangements would be sufficient to induce institutions to cooperate with military recruiters remains to be determined.

With the present fiscal constraints and uncertainty surrounding two-year colleges, the time is right for military recruiting to forge links with them. Indeed, the two-year colleges have attempted to forge links with the Department of Defense. Once established, there is a good chance that these links will endure when the target institutions are in stronger financial shape.

Modification of the Incentive Structure for Recruiters

Experience with CRP, CCEP, and LEAP suggests that, without a revision in the present recruiter incentive system, recruiters will not be motivated to recruit from two-year colleges and vocational schools. The risk of shortfalls in meeting monthly goals is the major disincentive.

A change in incentive structure might be accomplished in a variety of ways. Recruiters might be assigned monthly goals for a certain number of high-quality enlistments from the market. But adding goals might create a morale problem if there are no changes in incentive structures (see Section V). For example, greater credit toward monthly quotas might be given for enlistments from the postsecondary institutions than for high school seniors or graduates.

A second disincentive for working these institutions arises from the territorial structure of military recruiting. As observed in the CRP, recruiters may be reluctant to recruit college students because, in

the end, they may not receive credit for their work. A college-designated recruiter might get the credit as in the CRP or, as discussed in Section V, the student might enlist in his or her home recruiting area during vacation. Some provision might have to be made for crediting "assists."

Selection and Training of Recruiters

Because of its college-designated recruiters, only the CRP dealt (indirectly) with recruiter selection. The CRP's recommendations for selection (Table 3.2) suggest selection criteria and topics for training. A caveat, however, is in order. There are two kinds of costs associated with this recommendation: (1) costs of selection and training, and (2) costs of taking outstanding recruiters out of the high school market.

Use of College-Designated Recruiters

The use of college-designated recruiters (cf. the CRP) might reduce the selection and training costs associated with penetrating the market. However, without some modification of the current incentive system, the CRP has shown that benefits accrued by the use of college recruiters may be countered by the disincentives and morale problems introduced into the regular recruiter force. If college recruiters are to be used, changes in the overall recruiting incentive system should be made to counteract negative spinoffs.

Use of Targeted Media Campaigns

LEAP's experience with media campaigns targeted on civilians with skills that fit critical petty officer ratings were expensive and did not lead to a substantial number of lateral entry accessions. However, this experience does not lead to a recommendation to eliminate advertising as a means for penetrating the postsecondary institutions for three reasons. First, the media campaign used by LEAP cast a considerably broader net than a campaign focused on these institutions. Second, LEAP was a short-term program and the full effects of media

campaigns are realized well after they are implemented. Third, some of the shortfalls in lateral entry goals were associated with other aspects of the program, such as the difficulty of the job-knowledge test. (See Section V for additional discussion of media.)

IV. THE SEARCH FOR RECRUITING HOT SPOTS

Enlistees with college training have not constituted a large percentage of the total number of NPS accessions in the armed forces. In FY82, for example, only one of every 12 enlistees had one or more years of college. Of the 25,500 recruits in this category, approximately one-fourth were college graduates, most of whom were slated for officers' training. This section focuses on the other 19,200 enlistees with some college, who represent only a tiny proportion of the military-eligible population in this educational attainment category. The magnitude of the latter is evidenced by the fact that, in 1980, there were 5.0 million persons of age 24 or less in the civilian labor force with one to three years of college. Also, in the fall of 1981, there were 6.4 million full-time undergraduate students enrolled in the nation's colleges and universities, of whom 1.8 million were in two-year colleges. Taken together, these statistics indicate that the 19,200 enlistees with some college amount to less than 0.2 percent of the civilian population of age 24 or below in the same educational category.

Nevertheless, the percentage might be much higher in certain parts of the country where some recruiters have developed highly successful tactics for attracting college students. If so, their successes deserve to be singled out and studied for application to the rest of the nation.

This section provides an analysis of recruiting performances across states and other areas to determine economic and demographic factors that affect college recruiting and to pinpoint recruiting "hot spots" that provide unusually large numbers of enlistees with some college. Our analysis builds on the assumption that, with the great variety of recruiters and recruiting tactics in existence across the four services and across the nation, there must be some eminently successful recruiting environments and/or tactics that can be exploited in framing successful recruitment policies for the rest of the country. Since economic conditions, attitudes toward military service, and college recruiting practices vary widely across recruiting districts, measures

of recruiting performance for geographical areas can be treated as observations from a natural experiment in which factors that affect recruiting are varied. Using the areas as units of analysis, one can employ regression techniques to examine how recruiting success depends on the observable factors associated with the individual areas.

As will be seen later in this section, college recruiting performance is not very well explained by the demographic and economic characteristics that are usually incorporated in analyses of this type. Given that college recruiting has been a peripheral activity of military recruiters and the fact that so little is known about the extent or nature of this activity, we had anticipated this result from the outset. Our plan was to use the "residuals" from the regression analysis to pinpoint those areas of the country which appear to perform unusually well *after* allowing for observable local conditions, such as demographic and economic factors, that might enhance or impede military recruiting. Carrying out this plan requires answering a number of questions:

- What measure(s) of recruiting performance should be used?
- What geographical areas should constitute the units of analysis?
- What factors should be considered in comparing recruiting performances across areas?
- What methods should be used in predicting recruiting performance as a function of explanatory factors?
- How can one test for the existence of hot spots?
- How can the hot spots be identified?

The first question seems easy to answer at first blush: Use the number of enlistees from two-year colleges and vocational schools as the measure of recruiting performance. However, the available data on enlistments from the Defense Manpower Data Center (DMDC) do not permit distinguishing the enlistees who were recruited while attending college, let alone those who were recruited from the target institutions. The best information that we have for identifying these students are the enlistees' educational attainment classifications at the time of entrance into service. This allows us to group enlistees into the

following postsecondary educational categories: (1) one year of college, (2) two years of college, (3) three to four years of college, and (4) college graduate.

Given the impossibility of getting counts of two-year college and vocational students among the enlistees with one to two years of college, we decided to focus on the number of enlistees with "some college," i.e., the number with one or more years of college who are not college graduates. It should be noted that this number may exclude large numbers of recruits who entered college but dropped out early and were classified as having less than a year of postsecondary education at service entry.

Table 4.1 shows how the states compared in terms of numbers of recruits with some college during FY82. As might be expected, California and New York, the states with the largest populations, were the states of residence for the largest numbers of recruits with some college. To eliminate the dependence of the measure of recruiting performance on population size, we propose a *college enlistment rate* that is the ratio of the number of recruits with some college to the *college population base*, which is the sum of the full-time undergraduate enrollment in that state and the number of individuals of age 24 or less in the labor force with one to three years of college. These enlistment rates for states are given in the last column of Table 4.1A. The sources of the data for calculating the college population base will be given later in this section.

The uniform smallness of the college enlistment rates would seem to suggest that no state qualified as a college recruiting hot spot in 1982. Since the overall college enlistment rate for the entire United States was a paltry 1.6 enlistments per thousand persons in the college population base, it is clear that the military attracts only a tiny proportion of this population. Among individual states, Florida and South Carolina topped the list with college enlistment rates of approximately 2.7 per thousand. At the bottom of the list are Kansas and Utah, with enlistment rates of less than 0.9 per thousand.

These enlistment rates can be challenged on several grounds. For one thing, the college population base contains large numbers of individuals who are ineligible for military service and substantial

Table 4.1

COLLEGE RECRUITING PERFORMANCE MEASURES
BY STATE, FISCAL YEAR 1982

A. BOTH SEXES

State	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Alabama	5695	4317	475	157	69701	29092	82272	181065	2.62
Alaska	295	252	15	1	6753	2752	4135	13640	1.10
Arizona	3973	2994	233	76	68524	27107	56727	152358	1.53
Arkansas	3157	2492	221	57	32984	7784	45161	85929	2.57
California	23636	17725	1540	463	646397	308890	369907	1325194	1.16
Colorado	3752	2689	240	99	75515	16795	78475	170785	1.41
Connecticut	3731	2824	266	73	72519	14189	61841	148549	1.79
Delaware	883	713	44	16	13274	4360	16245	33879	1.30
District of Columbia	796	639	55	19	16456	0	35273	51729	1.06
Florida	15348	11316	1067	370	188759	89874	115019	393652	2.71
Georgia	8661	6765	545	192	95337	25470	90729	211536	2.58
Hawaii	1079	879	93	23	25613	9880	19151	54644	1.70
Idaho	1359	1028	97	26	21000	8038	19841	48879	1.98
Illinois	12932	10171	742	246	265364	99883	202269	567516	1.31
Indiana	8779	7261	426	130	98928	20197	132685	251810	1.69
Iowa	4247	3402	334	73	70837	27128	71158	169123	1.97
Kansas	2300	1768	117	39	60866	15723	60370	136959	0.85
Kentucky	4890	3769	299	89	59596	17164	71968	148728	2.01
Louisiana	3775	2882	240	76	79517	6929	101374	187820	1.28
Maine	2257	1905	116	53	20491	4419	24504	49414	2.35
Maryland	6374	5154	386	120	91116	29915	70462	191493	2.02
Massachusetts	6884	5300	386	165	160575	41661	185944	388180	0.99
Michigan	15341	12514	752	202	216816	76620	184365	477801	1.57
Minnesota	5684	4468	327	124	120636	23667	103816	248119	1.32
Mississippi	3110	2338	328	74	47289	31586	44986	123861	2.65
Missouri	7048	5400	397	116	100879	20838	113143	234860	1.69
Montana	1159	923	74	17	16660	1671	24006	42337	1.75
Nebraska	2120	1646	148	46	43768	8809	43544	96121	1.54
Nevada	1131	859	62	21	16609	2501	9753	28863	2.15
New Hampshire	1718	1289	98	60	20356	4460	28431	53247	1.84
New Jersey	8250	6506	389	165	151716	46074	108722	306512	1.27
New Mexico	2059	1678	98	25	24513	4455	29691	58659	1.67
New York	22058	16875	1205	415	397569	173714	402661	973944	1.24
North Carolina	8399	6454	785	270	109634	62025	124484	296143	2.65
North Dakota	628	467	79	15	22086	6679	21382	50147	1.58
Ohio	18091	15109	734	261	208834	58219	226260	493313	1.49
Oklahoma	2342	1721	167	38	65181	17912	69815	152908	1.09
Oregon	4293	3214	284	86	57007	29868	53132	140007	2.03
Pennsylvania	15838	12847	846	361	211095	63786	247908	522789	1.62
Rhode Island	1180	887	63	24	24821	5506	35047	65374	0.96
South Carolina	5013	3887	403	178	61158	28338	60229	149725	2.69
South Dakota	1058	773	90	26	18414	587	24683	43684	2.06
Tennessee	5890	4543	361	173	85280	25286	100304	210870	1.71
Texas	14818	10791	972	314	311045	100183	267889	679117	1.43
Utah	1063	775	91	43	45631	9718	49299	104648	0.87
Vermont	818	666	44	23	11525	1832	18916	32273	1.36
Virginia	7108	5548	524	198	99679	36658	115047	251384	2.08
Washington	5912	4394	509	117	98075	64872	76871	239818	2.12
West Virginia	2662	2055	191	52	26894	4391	42852	74137	2.58
Wisconsin	6289	4852	391	104	111398	39170	125114	275682	1.42
Wyoming	505	366	44	7	11205	4662	7203	23070	1.91
50 States and D.C.	296388	230090	18393	6118	4975895	1761337	4675063	11412295	1.61

Table 4.1

COLLEGE RECRUITING PERFORMANCE MEASURES
BY STATE, FISCAL YEAR 1982

B. MALES

State	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Alabama	5095	3859	370	130	33231	12807	40092	86130	4.30
Alaska	269	229	13	1	3109	1359	2078	6546	1.99
Arizona	3528	2626	178	67	34898	14236	31536	80670	2.21
Arkansas	2801	2211	171	46	15800	3529	22738	42067	4.06
California	21002	15582	1212	391	313159	157738	187487	658384	1.84
Colorado	3305	2337	176	80	37490	9214	41105	87809	2.00
Connecticut	3277	2469	208	57	32131	6790	30044	68965	3.02
Delaware	772	618	35	13	5898	1755	7086	14739	2.37
District of Columbia	683	545	43	12	6750	0	16862	23612	1.82
Florida	13509	9831	828	301	87769	42774	63023	193566	4.28
Georgia	7703	5977	437	144	44245	12064	45311	101620	4.30
Hawaii	965	786	79	18	12046	5073	9137	26256	3.01
Idaho	1209	907	77	24	10545	3541	11057	25143	3.06
Illinois	11737	9176	610	212	128004	49601	104849	282454	2.16
Indiana	7910	6490	357	111	48460	12103	67868	128431	2.78
Iowa	3773	3021	268	55	33265	13789	36712	83766	3.20
Kansas	2065	1574	96	29	30118	7969	31431	69518	1.38
Kentucky	4332	3314	233	65	27519	7072	35546	70137	3.32
Louisiana	3354	2557	181	54	38330	3313	50742	92385	1.96
Maine	1984	1671	92	41	9593	2562	12329	24484	3.76
Maryland	5649	4542	304	95	40904	13702	33701	88307	3.44
Massachusetts	6172	4749	298	130	69469	15081	92643	177193	1.68
Michigan	13611	11002	591	173	104018	36438	94830	235286	2.51
Minnesota	5114	4018	271	100	57664	12009	51549	121222	2.24
Mississippi	2709	2038	256	56	22010	14590	21755	58355	4.39
Missouri	6275	4777	309	95	47724	10348	57960	116032	2.66
Montana	1021	806	55	15	8091	745	12970	21806	2.52
Nebraska	1879	1455	120	34	21240	4842	22496	48578	2.47
Nevada	994	745	46	19	8558	1301	5290	15149	3.04
New Hampshire	1492	1100	75	51	9143	2227	14217	25587	2.93
New Jersey	7459	5818	331	136	72000	21479	53477	146956	2.25
New Mexico	1787	1449	64	21	11556	2362	15580	29498	2.17
New York	19543	14763	962	336	186322	81369	198402	466093	2.06
North Carolina	7345	5661	602	204	49566	28486	60727	138779	4.34
North Dakota	547	410	57	14	10569	3896	11029	25494	2.24
Ohio	16139	13378	572	222	101597	27467	118023	247087	2.31
Oklahoma	2112	1533	138	34	34348	9829	36805	80982	1.70
Oregon	3798	2810	223	74	27566	16059	28128	71753	3.11
Pennsylvania	14092	11384	674	288	100016	34612	124587	259215	2.60
Rhode Island	1069	802	52	18	11210	2771	17234	31215	1.67
South Carolina	4444	3459	319	136	27487	14270	29610	71367	4.47
South Dakota	917	670	65	23	8361	100	12709	21170	3.07
Tennessee	5291	4061	280	146	40601	11831	50313	102745	2.73
Texas	13216	9524	773	259	155749	51266	138761	345776	2.24
Utah	975	710	80	39	23096	5563	27229	55888	1.43
Vermont	709	574	34	19	4925	975	8811	14711	2.31
Virginia	6306	4899	409	164	43903	17799	54084	115786	3.53
Washington	5207	3818	405	101	46404	33445	39055	118904	3.41
West Virginia	2415	1862	154	41	12540	2095	22050	36685	4.20
Wisconsin	5477	4182	308	84	53637	19739	63649	137025	2.25
Wyoming	459	330	37	5	5959	2224	4119	12302	3.01
50 States and D.C.	263496	203109	14528	4983	2368593	866209	2368826	5603628	2.59

numbers of individuals whose propensities to enlist are essentially zero. Since few college women consider military service as a career option, the male college enlistment rates given in Table 4.1B might be more meaningful. South Carolina and Mississippi top the list with 4.47 and 4.39 enlistments per thousand; Kansas and Utah are lowest with approximately 1.4 per thousand.

Even if one multiplies these rates by factors of from two to four to allow for the fact that the college population base contains several cohorts of high school graduates, the overall male enlistment rates would still be less than two percent in all states. Also, it is noteworthy that all eight states with college enlistment rates above 2.5 per thousand are in the South, where military recruiting has traditionally been stronger and military pay scales compare more favorably with civilian wage rates. Figure 4.1 shows how the college enlistment rates vary across states.

With the thought that there may be areas within states that qualify as recruiting hot spots, we also calculated the college enlistment rates for the 305 metropolitan areas that result from combining the Standard Metropolitan Statistical Areas (SMSAs) with their counterparts in New England, the New England County Metropolitan Areas (NECMAs). Table A.1 in the appendix lists the college enlistment rates for the 39 metropolitan areas with populations exceeding a million in 1980, as well as for the regions of the states that do not lie in large metropolitan areas.

Among the large metropolitan areas, the two with the highest college enlistment rates in 1982 were San Antonio, Texas (2.97), and Indianapolis, Indiana (2.92). Since San Antonio is the location of several large military installations and Indianapolis has Ft. Benjamin Harrison nearby, the relatively high performances of these areas may be attributable in part to the large military presence in these areas. Also, the headquarters for the Air Force Recruiting Service is at Randolph Air Force Base, San Antonio.

Even though San Antonio topped the list for large metropolitan areas, its college enlistment rate was only ten percent above the rate for the entire state of Florida. This would seem to suggest that the

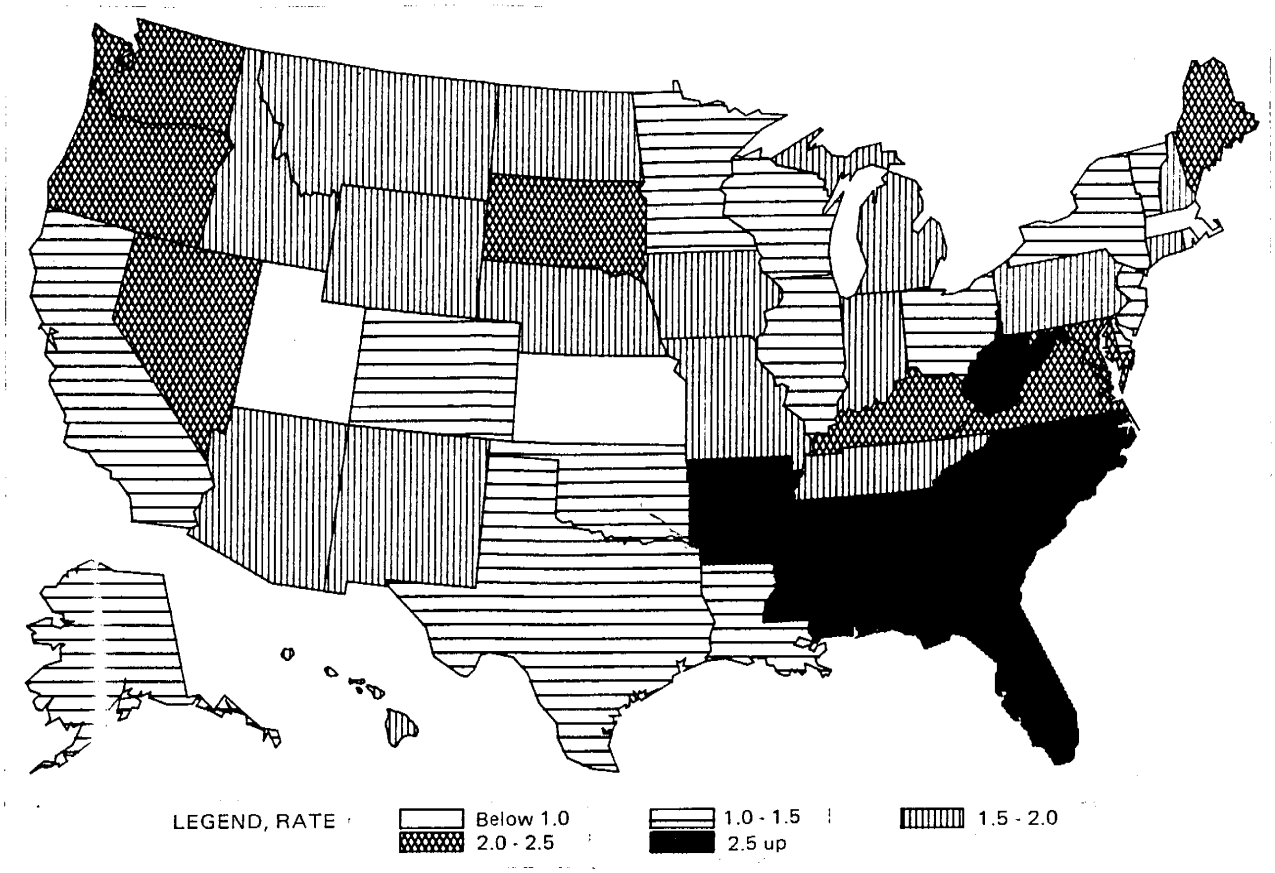


Fig. 4.1 -- Accessions with some college per 1000 in college population base, by state

college recruiting hot spots, if they exist, are in smaller metropolitan areas and in nonmetropolitan areas. As Table A.1 shows, the very large metropolitan areas tend to have low college enlistment rates. For example, Florida is the bellwether state for college recruiting with a rate of 2.71 per thousand, but the rate for Miami--1.60 per thousand--is almost the same as that for the entire United States, and the rate for the part of Florida outside its three large metropolitan areas is 3.02.

Among all SMSAs, the one containing Pascagoula and Moss Point, Mississippi, has the highest college enlistment rate at 15.36 per thousand, but this is based on only 28 enlistments and a college population base of 1,823. Among the SMSAs that have college population bases exceeding 5,000, the SMSAs with the highest college enlistment rates are Fayetteville, North Carolina (6.95), and Pensacola, Florida

(6.81). Both SMSAs are in states that have relatively high enlistment rates, and both are close to large military installations-- Fort Bragg, North Carolina, and Pensacola Naval Air Station.

The SMSAs that have the lowest college enlistment rates have much in common. They are Lawrence, Kansas (0.09); Bloomington-Normal, Illinois (0.12); State College, Pennsylvania (0.31); Columbia, Missouri (0.32); Ft. Collins, Colorado (0.32); Champaign-Urbana-Rantoul, Illinois (0.36); and Bloomington, Indiana (0.38). All are relatively small SMSAs that contain large state universities, and none has a two-year college. Thus, their college population bases contain disproportionate numbers of four-year college students. While the extremely low college enlistment rates in these SMSAs suggest that undergraduates at four-year college have very low enlistment propensities, another explanation is that the college enlistment rates are distorted for small SMSAs that have relatively large numbers of student "immigrants," i.e., students whose home of record lies outside the SMSA that contains the college. The reason is that the numerator of the enlistment rate is based on the number of enlistments from that SMSA (derived using county codes for the enlistees' *home of record*), and the denominator includes full-time undergraduate enrollments for all colleges in the SMSA, whether or not those students' homes of record are in the SMSA. We suspect that, in the SMSAs with extremely low college enlistment rates, a student's home of record is more likely to be outside the SMSA that contains the college. If so, areas with large numbers of student immigrants (e.g., Lawrence, Kansas) will have artificially low enlistment rates, and those areas with more student emigrants than immigrants (e.g., nonmetropolitan Florida) will have inflated rates.

Since the available data on enlistments with some college do not permit us to ascertain where the enlistees attended college, our more detailed analysis of the factors that affect college recruiting will use aggregate data for states and "MEPS areas," i.e., areas served by the Military Entrance Processing Stations. Since the boundaries of the MEPS areas ordinarily coincide with boundaries of the individual services' recruiting districts, the MEPS areas provide more suitable units of analysis for examining variability in recruiting performance.

Table 4.2 provides the enlistment data and college enlistment rates for MEPS areas analogous to those reported earlier for states. Figure 4.2 shows the boundaries of the MEPS and indicates the sizes of their college population bases. The full-time undergraduates in the two- and four-year colleges constitute 15 and 41 percent of the college population base on average. The two-year portion of the college population base is inordinately concentrated in California, as Figure 4.3 indicates. Of the full-time two-year students in the United States, one in six attends school in California, whereas California accounts for only 8 percent of the four-year college students. Figure 4.4 shows how the MEPS areas compared in terms of overall numbers of recruits with some college in FY82.

Figure 4.5 shows how enlistment rates vary across MEPS areas. The five MEPS that had the highest college enlistment rates in FY82 were Beckley, West Virginia (3.64); Raleigh, North Carolina (3.25); Boise, Idaho (3.19); Montgomery, Alabama (3.12); and Fort Jackson, South Carolina (2.85). The bottom five were San Diego, California (0.75); Salt Lake City, Utah (0.80); Amarillo, Texas (0.87); Anchorage, Alaska (0.89); and Houston, Texas (0.96). Since the top five performers had college enlistment rates that were three to five times higher than those in the bottom five, the wide disparities in the enlistment rates call for investigation. If the differences are entirely due to differences in demographic and economics factors or to inherent randomness in the enlistment counts, that would support the hypothesis that variation in recruiting tactics is not important. On the other hand, if the observed differences are primarily attributable to recruiting practices, this would suggest that the college recruiting performances of the lowest performing MEPS can be improved by a factor of two or three by adopting the practices of the top performing MEPS.

To examine how college recruiting varies from location to location, we have gathered information on enlistments and factors related to recruiting at four levels of aggregation: (1) county, (2) metropolation area, (3) MEPS area, and (4) state. Insofar as possible, for each of these levels we obtained the following data:

Table 4.2

RECRUITING PERFORMANCE MEASURES
BY LOCATION, FISCAL YEAR 1982

A. BOTH SEXES

Name	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Albany, NY	2820	2179	187	69	42742	25685	49773	118200	1.58
Baltimore, MD	9525	7593	627	209	134270	39884	115162	289316	2.17
Beckley, WV	1905	1461	152	32	18855	5781	17086	41722	3.64
Boston, MA	6896	5300	375	168	159686	38639	180508	378833	0.99
Buffalo, NY	4835	3734	275	79	74248	31616	75629	181493	1.52
Cincinnati, OH	5141	4289	218	85	56023	15944	60847	132814	1.64
Cleveland, OH	8490	7169	280	108	100740	23950	92120	216810	1.29
Columbus, OH	4777	3903	261	83	57800	18234	77775	153809	1.70
Harrisburg, PA	3237	2616	176	76	35010	8155	58033	101198	1.74
Louisville, KY	4492	3462	270	72	52304	19236	57935	129475	2.09
Manchester, NH	2117	1645	113	69	23705	5609	36887	66201	1.71
Newark, NJ	6547	5200	288	135	124408	38085	85313	247806	1.16
New Haven, CT	2303	1732	187	46	43391	8573	32507	84471	2.21
Philadelphia, PA	7042	5590	356	149	122717	38823	116584	278124	1.28
Pittsburgh, PA	6353	5199	331	142	79456	25975	92319	197750	1.67
Portland, ME	2556	2109	137	71	27992	5102	33973	67067	2.04
Richmond, VA	5108	4020	363	142	70824	23140	106280	200244	1.81
Springfield, MA	2647	2027	148	56	54838	14144	69817	138799	1.07
Syracuse, NY	3758	2959	182	62	51430	26683	73317	151430	1.20
Wilkes-Barre, PA	2865	2337	172	57	32654	13444	44054	90152	1.91
Fort Hamilton, NY	10516	7875	565	195	224597	82661	207753	515011	1.10
Atlanta, GA	6620	5090	444	158	77985	20778	74700	173463	2.56
Charlotte, NC	4076	3100	331	132	61001	32151	60270	153422	2.16
Coral Gables, FL	6254	4510	371	126	79597	35231	22119	136947	2.71
Fort Jackson, SC	5820	4532	459	200	65839	27272	67792	160903	2.85
Jackson, MS	1896	1454	212	51	33750	20737	36402	90889	2.33
Jacksonville, FL	8315	6404	563	202	104240	49998	93771	248009	2.27
Knoxville, TN	2877	2226	115	73	38683	13916	45625	98224	1.17
Memphis, TN	3287	2595	236	62	42487	19672	44031	106190	2.22
Montgomery, AL	6228	4712	542	165	69362	31539	72902	173803	3.12
Nashville, TN	3113	2313	254	94	43231	12013	56134	111378	2.28
Raleigh, NC	4557	3505	492	149	52101	31453	67781	151335	3.25
Albuquerque, NM	1557	1283	62	25	17321	3268	16504	37093	1.67
Amarillo, TX	759	561	49	10	22673	6344	27516	56533	0.87
Dallas, TX	4501	3158	337	106	106939	39208	71885	218032	1.55
El Paso, TX	1672	1273	118	24	21193	6719	20907	48819	2.42
Houston, TX	4146	3044	193	67	96591	16785	87875	201251	0.96
Little Rock, AR	2571	2010	179	46	28348	6555	38891	73794	2.43
New Orleans, LA	2904	2138	195	58	61790	7434	71055	140279	1.39
Oklahoma City, OK	2280	1661	163	41	63703	17360	69003	150066	1.09
San Antonio, TX	3863	2894	283	124	70160	28713	75589	174462	1.62
Shreveport, LA	2134	1668	149	34	26244	5620	28435	60299	2.47
Chicago, IL	10710	8532	532	201	241845	82323	173107	497275	1.07
Denver, CO	4514	3250	299	113	89603	23154	86934	199691	1.50
Des Moines, IA	3992	3212	291	65	62335	24039	70076	156450	1.86
Detroit, MI	14682	11996	670	185	206547	71923	168873	447343	1.50

Table 4.2A--continued

Name	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Fargo, ND	1148	888	126	19	33493	8369	35370	77232	1.63
Indianapolis, IN	6298	5158	329	112	68324	13356	102554	184234	1.79
Kansas City, KS	5065	3882	244	84	100271	21293	116070	237634	1.03
Milwaukee, WI	5668	4350	386	89	96981	34246	102775	234002	1.65
Minneapolis, MN	6229	4895	345	137	126045	27884	121535	275464	1.25
Omaha, NE	2374	1823	191	50	45663	9768	43430	98861	1.93
Sioux Falls, SD	1504	1125	131	34	26113	3281	29133	58527	2.24
St. Louis, MO	7128	5529	479	124	103740	33945	109525	247210	1.94
Boise, ID	1116	842	74	20	11638	2136	9419	23193	3.19
Butte, MT	1110	878	72	20	16505	1671	24006	42182	1.71
Salt Lake City, UT	1166	841	98	47	54161	15216	53768	123145	0.80
Fresno, CA	2162	1631	126	19	37875	19834	16599	74308	1.70
Los Angeles, CA	10787	8154	672	180	243839	106167	147575	497581	1.35
Oakland, CA	8751	6536	577	211	221124	107918	137132	466174	1.24
Phoenix, AZ	4595	3466	257	95	77470	28527	61336	167333	1.54
Portland, OR	4640	3483	288	83	60163	33966	51800	145929	1.97
Seattle, WA	3826	2802	348	91	68562	42834	44684	156080	2.23
Spokane, WA	1893	1460	156	25	29705	18799	39472	87976	1.77
Anchorage, AK	265	229	12	1	6573	2752	4135	13460	0.89
Honolulu, HI	1157	948	100	22	25611	9880	19151	54642	1.83
San Diego, CA	2581	1867	226	48	150599	75927	73745	300271	0.75
50 States and D.C.	296721	230307	18439	6127	4975713	1761337	4675063	11412113	1.62
Outlying areas:									
San Juan, PR	2898	1899	676	223	-	25615	80355	105970	-
Guam	306	251	42	2	-	1860	1592	3452	-
Atlantic Zone	-	-	-	-	-	0	632	632	-
Pacific Zone	261	248	9	0	-	886	0	886	-

Table 4.2

RECRUITING PERFORMANCE MEASURES
BY LOCATION, FISCAL YEAR 1982

B. MALES

Name	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Albany, NY	2472	1892	153	55	19586	13896	23202	56684	2.70
Baltimore, MD	8454	6698	500	169	59506	18956	54207	132669	3.77
Beckley, WV	1755	1344	128	26	9051	2690	8870	20611	6.21
Boston, MA	6216	4779	289	132	69710	14265	91431	175406	1.65
Buffalo, NY	4284	3302	209	62	34150	14759	39049	87958	2.38
Cincinnati, OH	4548	3758	175	70	26948	7055	31187	65190	2.68
Cleveland, OH	7586	6354	220	90	48870	11287	46583	106740	2.06
Columbus, OH	4258	3469	195	69	28650	9002	42657	80309	2.43
Harrisburg, PA	2832	2266	145	58	16405	4514	29704	50623	2.86
Louisville, KY	3954	3018	208	52	24319	9429	28625	62373	3.33
Manchester, NH	1850	1413	93	58	10375	2969	18251	31595	2.94
Newark, NJ	5923	4658	237	116	59157	18076	41782	119015	1.99
New Haven, CT	2036	1530	150	33	19350	4512	15304	39166	3.83
Philadelphia, PA	6292	4961	290	120	58446	17734	57447	133627	2.17
Pittsburgh, PA	5722	4675	263	112	37206	14256	46202	97664	2.69
Portland, ME	2236	1841	106	56	12994	2795	16739	32528	3.26
Richmond, VA	4441	3479	266	114	30801	10701	50624	92126	2.89
Springfield, MA	2316	1755	116	50	23750	5865	33186	62801	1.85
Syracuse, NY	3301	2579	141	44	23674	12741	37806	74221	1.90
Wilkes-Barre, PA	2562	2091	132	44	15427	8252	21605	45284	2.91
Fort Hamilton, NY	9351	6868	459	166	106566	36577	100756	243899	1.88
Atlanta, GA	5912	4518	361	116	36441	9951	38427	84819	4.26
Charlotte, NC	3626	2758	258	105	27746	15211	28098	71055	3.63
Coral Gables, FL	5602	3986	292	99	36719	16051	11713	64483	4.53
Fort Jackson, SC	5109	3985	363	151	29601	13578	33134	76313	4.76
Jackson, MS	1672	1288	166	41	15575	9501	17297	42373	3.92
Jacksonville, FL	7285	5552	439	167	49040	24638	51582	125260	3.50
Knoxville, TN	2630	2015	89	64	18816	6571	23031	48418	1.84
Memphis, TN	2894	2283	179	48	19340	8888	21537	49765	3.60
Montgomery, AL	5490	4139	411	139	32219	13880	35609	81708	5.03
Nashville, TN	2799	2065	208	78	21187	5528	27848	54563	3.81
Raleigh, NC	3927	3045	372	105	23315	14179	33747	71241	5.22
Albuquerque, NM	1354	1107	41	22	8008	1887	8511	18406	2.23
Amarillo, TX	679	499	42	8	12208	3215	14751	30174	1.39
Dallas, TX	4028	2792	270	89	52509	20964	35424	108897	2.48
El Paso, TX	1488	1135	83	19	10728	2992	11096	24816	3.34
Houston, TX	3732	2698	154	59	49223	8252	47304	104779	1.47
Little Rock, AR	2284	1782	139	38	13783	3166	19651	36600	3.80
New Orleans, LA	2539	1862	146	38	29983	3684	35499	69166	2.11
Oklahoma City, OK	2058	1483	133	36	33618	9578	36329	79525	1.67
San Antonio, TX	3389	2519	227	103	34186	14586	38133	86905	2.61
Shreveport, LA	1891	1484	107	26	12496	2543	14841	29880	3.58
Chicago, IL	9735	7705	435	177	116347	40655	87817	244819	1.78
Denver, CO	3989	2828	230	92	44772	12254	45837	102863	2.24
Des Moines, IA	3529	2837	228	50	29201	11867	37264	78332	2.91
Detroit, MI	13072	10579	528	157	98629	34185	84923	217737	2.42

Table 4.2B--continued

Name	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Fargo, ND	1005	781	95	17	16285	4783	17630	38698	2.45
Indianapolis, IN	5686	4619	280	94	33580	7660	52757	93997	2.98
Kansas City, KS	4527	3440	191	69	48542	10811	59542	118895	1.61
Milwaukee, WI	4910	3729	305	68	47356	17076	54629	119061	2.56
Minneapolis, MN	5609	4400	284	116	59561	14238	59932	133731	2.12
Omaha, NE	2123	1623	161	39	22138	5463	22462	50063	3.22
Sioux Falls, SD	1312	983	100	27	12055	1800	14730	28585	3.50
St. Louis, MO	6400	4937	392	102	49859	17060	58557	125476	3.12
Boise, ID	991	738	59	19	5984	1083	4787	11854	4.98
Butte, MT	972	760	55	17	8018	745	12970	21733	2.53
Salt Lake City, UT	1071	774	84	41	27364	7740	29753	64857	1.30
Fresno, CA	1969	1464	109	16	19075	9996	8041	37112	2.94
Los Angeles, CA	9638	7223	533	159	119217	53697	75822	248736	2.14
Oakland, CA	7730	5702	445	171	105578	55358	69195	230131	1.93
Phoenix, AZ	4064	3027	198	85	39718	15024	34070	88812	2.23
Portland, OR	4118	3055	228	70	29148	18133	27466	74747	3.05
Seattle, WA	3331	2398	276	77	32047	21996	21924	75967	3.63
Spokane, WA	1683	1293	119	23	14496	9831	21539	45866	2.59
Anchorage, AK	244	212	9	1	3109	1359	2078	6546	1.37
Honolulu, HI	1031	844	85	17	12044	5073	9137	26254	3.24
San Diego, CA	2284	1629	186	40	72786	39148	37185	149119	1.25
50 States and D.C.	263800	203305	14570	4991	2368591	866209	2368826	5603626	2.60
Outlying areas:									
San Juan, PR	2665	1760	614	191	-	9854	31502	41356	-
Guam	276	232	31	2	-	865	706	1571	-
Atlantic Zone	-	-	-	-	-	0	175	175	-
Pacific Zone	254	246	4	0	-	419	0	419	-

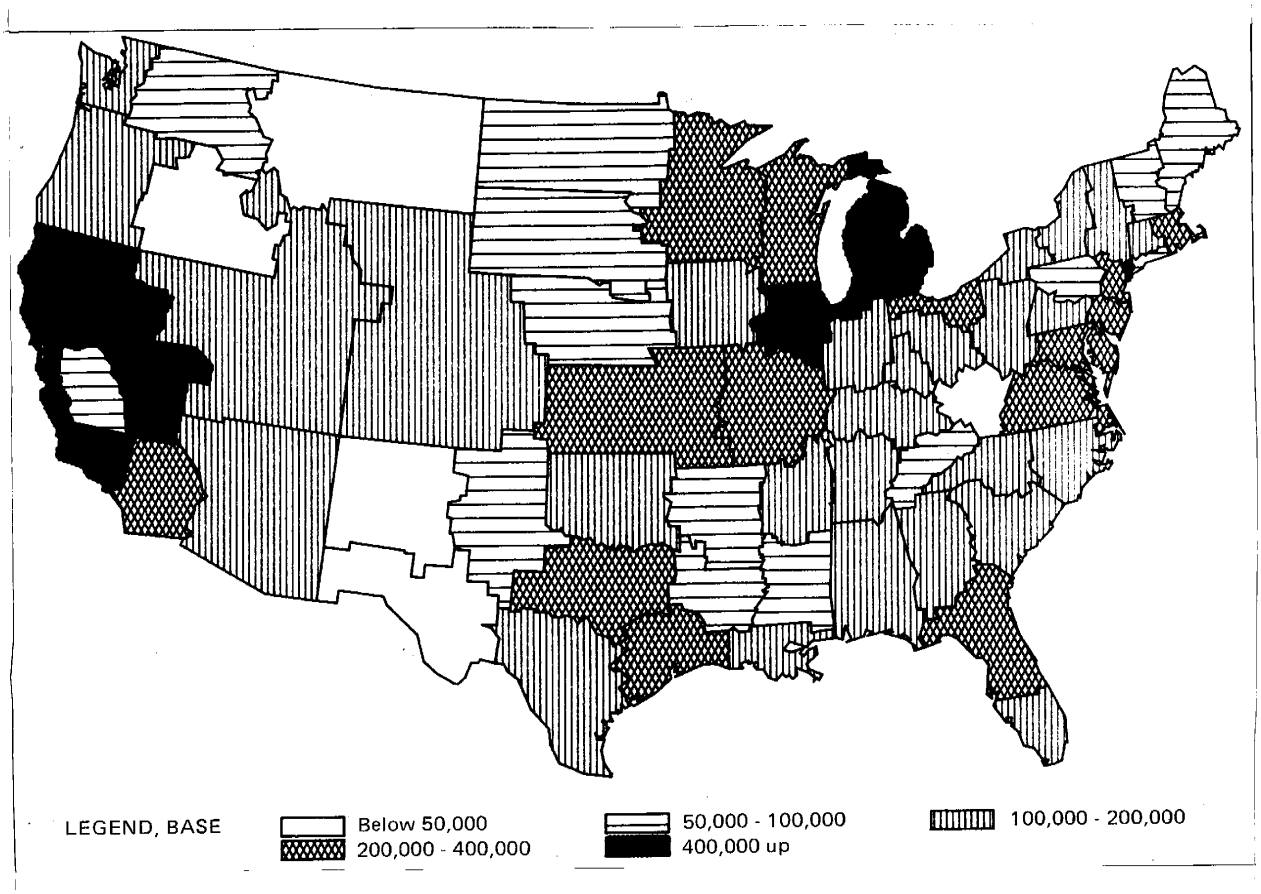


Fig. 4.2 -- College population base

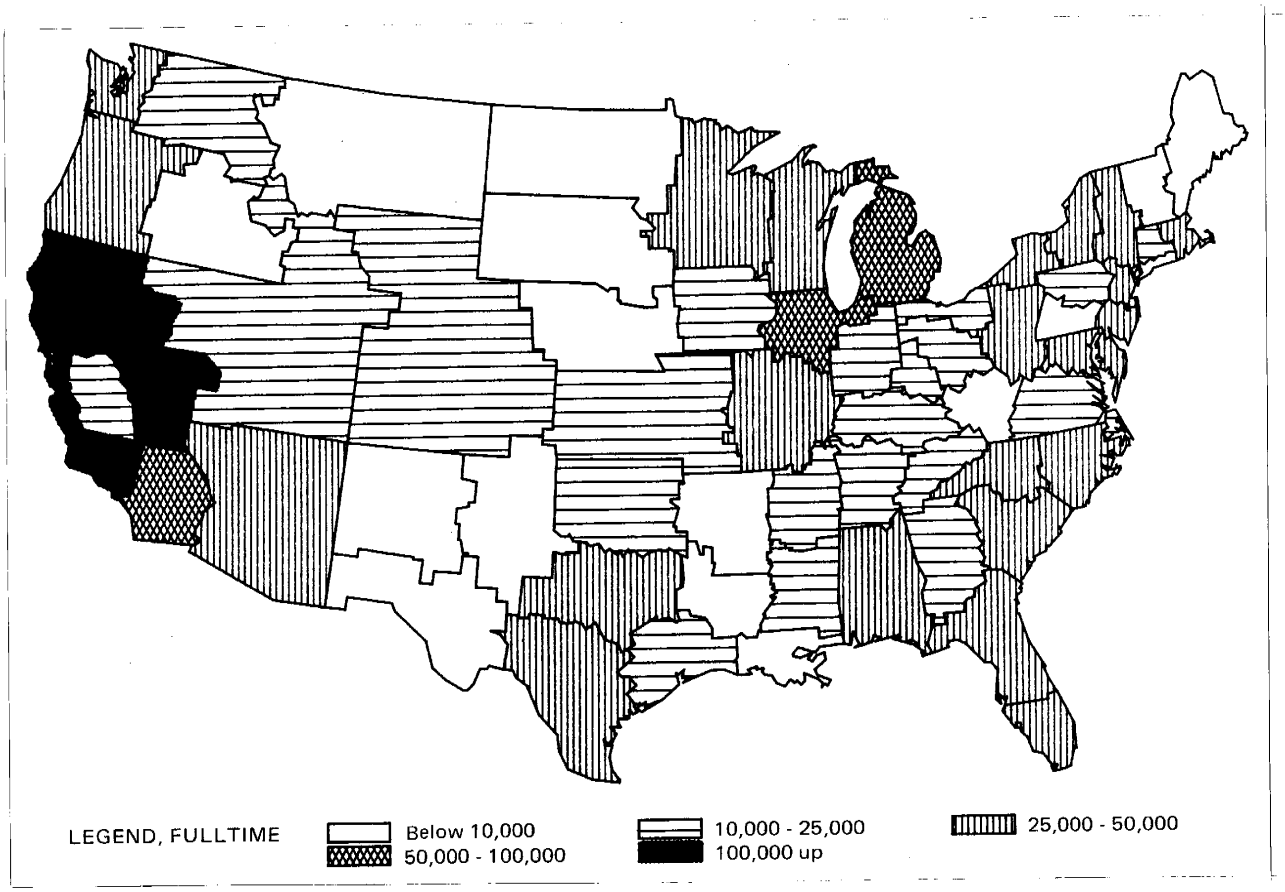


Fig. 4.3 -- Full-time enrollment in two-year colleges

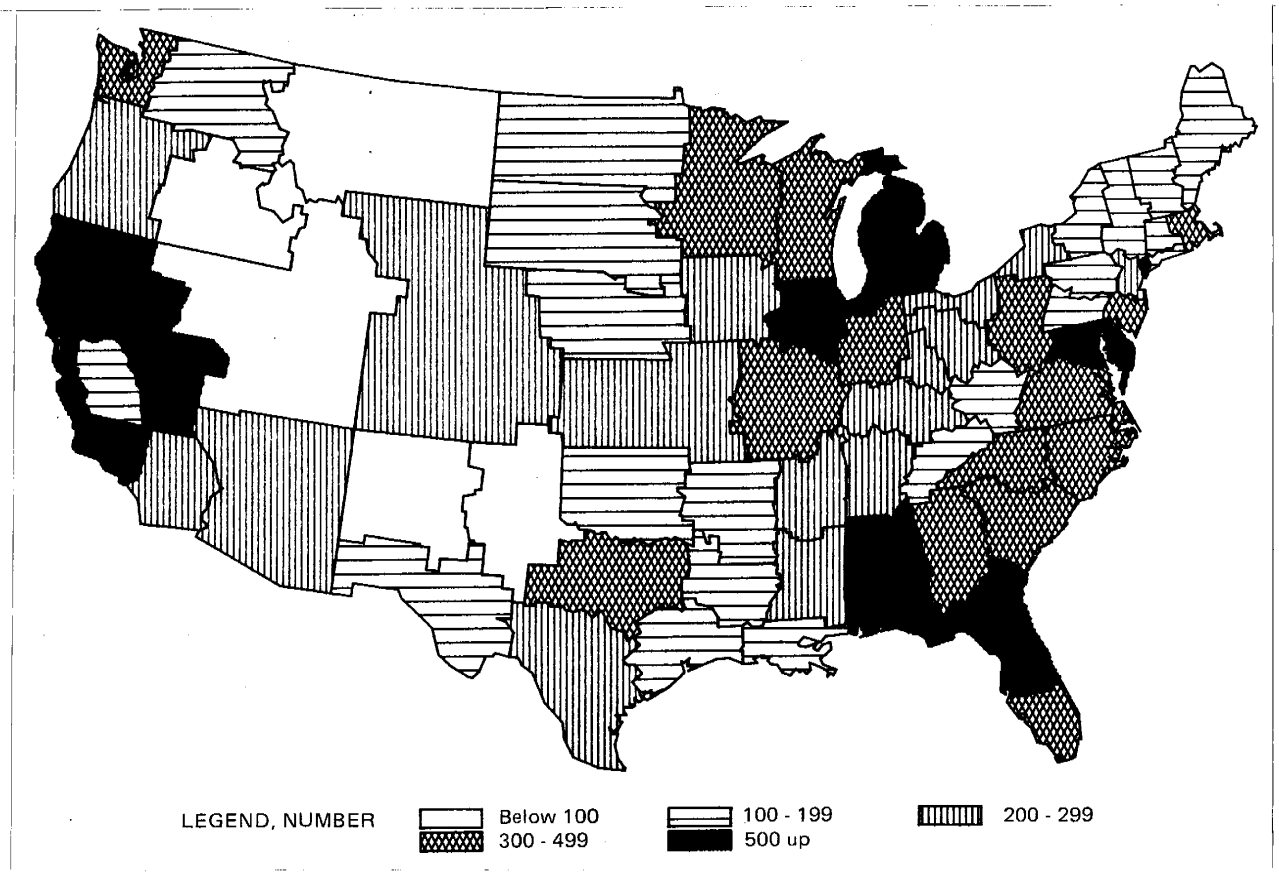


Fig. 4.4 -- Number of accessions with some college, FY82

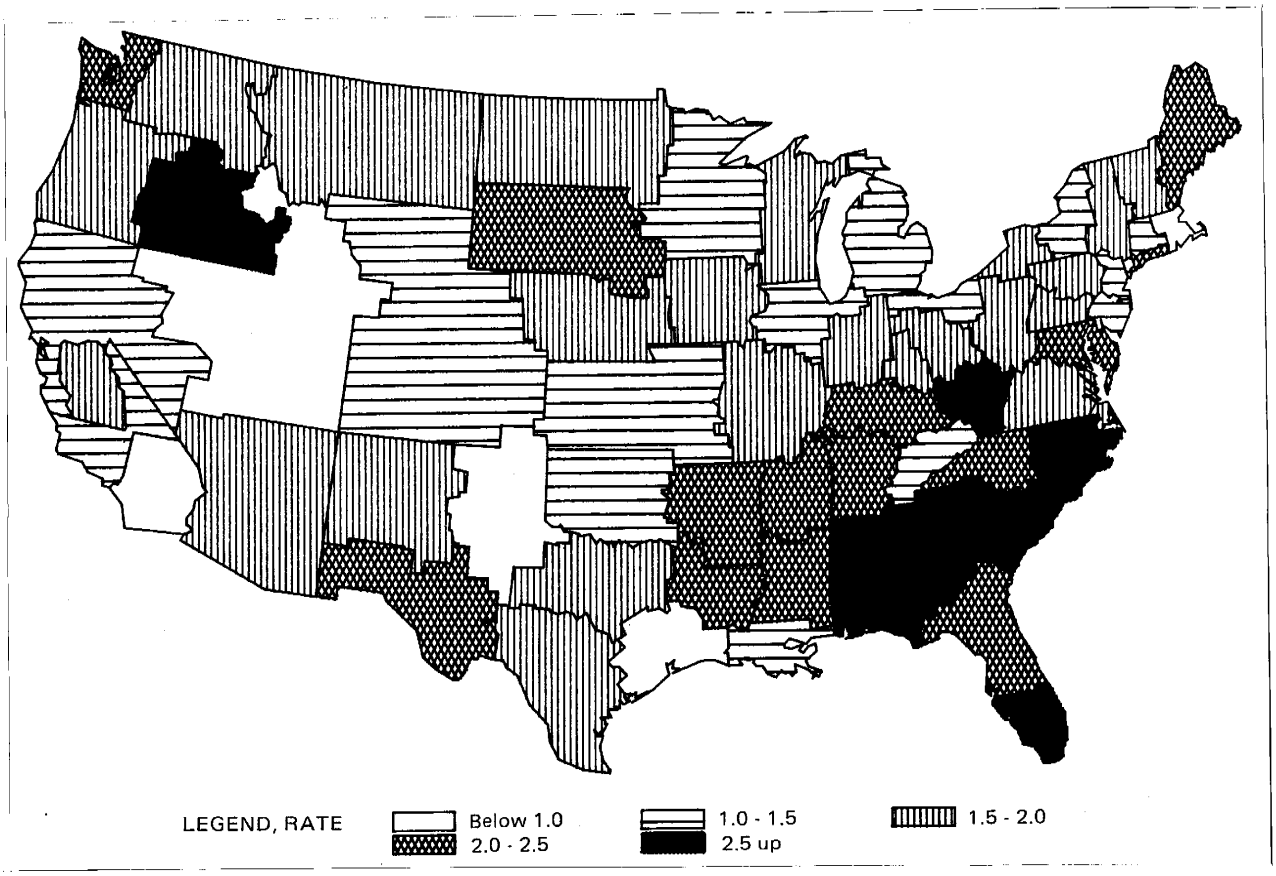


Fig. 4.5 -- Accessions with some college per 1000 in college population base, by Military Enlistment Processing Station

- *Counts of enlistments by educational attainment.* The Defense Manpower Data Center (DMDC) provided counts of enlistments (accessions) for FY82 by county and state of the recruit's home of record as well as by the MEPS at which the recruit was processed. These counts were disaggregated by service, sex, and educational attainment categorized as follows: nongraduates, high school graduates, one to two years of college, three to four years of college, and college graduates.
- *Population.* 1980 total population and population of ages 18-24 by sex were extracted from the 1980 census age-population tape.
- *College enrollments.* Enrollment figures for Fall 1981 by sex, enrollment status (full-time/part-time), level (undergraduate or graduate), and type of institution (four-year or two-year) were obtained from the 1981 Opening Fall Enrollment Survey.

- *Civilian labor force.* Counts of persons of ages 16-24 in the civilian labor force by educational attainment were extracted from the 1980 Census/Equal Employment Opportunity (EEO) Special File.
- *Unemployment and earnings.* Data on unemployment and on hourly earnings of production workers in manufacturing for states and selected metropolitan areas as of April 1982 were taken from *Employment and Earnings*, July 1982, pp. 129-133.
- *Population characteristics.* County level data for 1980 on per capita money income, median family income, percent white, percent black, and percent Hispanic were taken from the 1980 Census STF3C file. Other state-level data were taken from the *State and Metropolitan Area Data Book, 1982.*
- *Military presence.* State-level data on the percentages of military personnel and DoD personnel relative to the total population were obtained from *Selected Manpower Statistics, Fiscal Year 1981.*
- *Weather factors.* Mean annual temperature and average total snow and ice pellets in inches for selected locations came from the *Statistical Abstract of the United States, 1982-83*, pp. 211, 218.

Our focus is on the recruitment of individuals with "some college," i.e., those identified as having one or more years of college training but who are not college graduates. The closest we can come to the target population for college recruiting within a particular region is the undergraduate students in that region plus the military-eligible population at that educational level. Our measure of the size of the college population base is the sum of the full-time undergraduate college enrollment at that location and the number in the civilian labor force of ages 16-24 with one to three years of college. The latter group consists primarily of individuals of age 19 or above, because few persons of age 18 or less have a year of college.

The dependent variable of interest for the regression analysis is the college enlistment rate

$$P = A/N$$

where A is the number of accessions with some college during FY82 and N is the size of the college population base. To examine the variability in college enlistment rates across locations, we shall use logit analysis, a multiple regression technique especially tailored for analyzing proportions. Let P_i denote the college enlistment rate in the i-th location. Then the key assumption in logit analysis is that, for a typical location, the expected value p_i of the college enlistment rate P_i is related to a vector of characteristics $X_i = (x_{1i}, x_{2i}, \ldots, x_{ki})$ of the location through a logistic regression function

$$p_i = 1/[1 + \exp(- X_i\beta)]$$

where $\beta = (\beta_1, \beta_2, \ldots, \beta_k)'$ is a k-dimensional column vector of parameters to be estimated from the data points (P_i, X_i), $i = 1, 2, \ldots, n$ for the n locations. To include a constant term in this regression, we shall assume that the first component x_{1i} of X_i is equal to one for all locations.

In this formulation, the logit of p defined by

$$\text{logit}(p) = \log[p/(1 - p)]$$

is a linear function of the components of X, i.e.,

$$\text{logit}(p_i) = \Sigma\ \beta_j x_{ji}$$

where the summation is over the variable indices j. We note in passing that, for the extremely small proportions p treated in this analysis, the factor 1 - p is very close to one, so that logit(p) differs little from log(p). Hence, in this application, the logistic regression model is essentially the same as a loglinear model. A related observation is

that, if the college population bases for the units of observation are uniformly over- or underestimated by a constant factor (so that the enlistment rates require rescaling), the factor becomes an additive term in the loglinear model that will be reflected in the constant term in the regression equation.

The standard method for fitting a logistic regression equation from grouped data is to estimate the parameters using the minimum logit chi square estimates, i.e., those values of the parameters that minimize

$$\chi^2(\text{logit}) = \Sigma\, N_i P_i (1 - P_i)[\text{logit}(P_i) - X_i\beta]^2$$

where N_i is the college population base in the i-th location. The rationale for this procedure stems from the fact that, if the number of accessions A_i can be treated as having a binomial distribution with parameters p_i and N_i, then $\text{logit}(P_i)$ is asymptotically normally distributed with mean $\text{logit}(p_i)$ and variance $1/N_i p_i(1 - p_i)$. Hence, minimizing the $\chi^2(\text{logit})$ criterion amounts to estimating the parameters using weighted least squares, where the appropriate weights $N_i p_i(1 - p_i)$ are estimated from the data. We also note for later reference that the quantity

$$e_i = [N_i p_i (1 - p_i)]^{1/2}\, [\text{logit}(P_i) - X_i\beta]$$

is asymptotically normally distributed with mean 0 and variance 1, provided the model fits. If we replace β by the fitted coefficients b and replace the values p_i by P_i, then the resulting "standardized residuals" provide measures for each location indicating how far they deviate from the pattern of the others after allowing for the explanatory variables and inherent randomness. Assuming that the residuals will reflect the existence of extraordinary recruiting activity, we can use the standardized residuals to test for the existence of recruiting hot spots.

As was seen in Figure 4.5, there is considerable variability in the college enlistment rates across regions, with the highest rates occurring in the South. There is also an appreciable amount of variability in the rates within states, as can be seen by comparing the

enlistment rates for the large metropolitan areas in California and Texas. (See Table A.1, appendix.)

Some of this variability results from a clear dependence of the college enlistment rates on population density. This can be seen from the table below, which shows the aggregate college enlistment rates for metropolitan areas grouped by size:

Size of Metropolitan Area	*Number*	*Enlistment Rate*
Nonmetropolitan area		2.13
Less than 250,000	152	1.55
250,000 - 500,000	70	1.75
500,000 - 1,000,000	43	1.47
1,000,000 - 2,000,000	23	1.52
2,000,000 - 4,000,000	11	1.45
Above 4,000,000	5	1.18

This dependence of the college enlistment rates on population density becomes evident in the logistic regression results presented in Table 4.3. Here, the units of analysis are the SMSAs, NECMAs, and the units that result from combining the nonmetropolitan areas in each state. In the first equation, separate indicator variables were used for seven population groupings. The regression coefficients for these indicator variables suggest that the pattern of dependence on size of metropolitan area can be captured by incorporating the logarithm of the metropolitan area population as an explanatory variable, as was done in Equation 2. The appropriateness of this specification can be seen from the fact that the value of R^2 remained about the same as it was for Equation 1, although Equation 2 contains five fewer independent variables.

It can also be seen from Table 4.3 that local economic factors, as measured by unemployment rates and average hourly wage rates in manufacturing, are significant predictors of college enlistment rates at this level of aggregation.

Table 4.3

LOGISTIC REGRESSION EQUATIONS RELATING COLLEGE ENLISTMENT RATES TO FACTORS AFFECTING RECRUITING, UNITS OF ANALYSIS: SMSAs, NECMAs, AND NONMETROPOLITAN AREAS FOR EACH STATE

Independent Variable	Equation 1 b	Equation 1 t	Equation 2 b	Equation 2 t
Constant	-7.451	-21.1	-6.808	-18.6
Economic factors				
Log(unemployment rate)	.388	5.5	.360	5.2
Log(wage rate)	-.420	-2.8	-.363	-2.5
College population base				
Percent of students in two-year colleges	.619	5.7	.590	5.5
Percent in civilian labor force	2.407	9.3	2.456	9.5
Population characteristics				
Percent black	.004	1.4	.004	1.3
Percent Hispanic	-.007	-3.1	-.007	-3.2
Percent in military service	.058	1.3	.053	1.2
Metropolitan area population				
Less than 250,000	-.081	-1.3		
250,000 - 500,000	-.089	-1.4		
500,000 - 1,000,000	-.310	-4.7		
1,000,000 - 2,000,000	-.339	-4.8		
2,000,000 - 4,000,000	-.431	-5.2		
Above 4,000,000	-.678	-7.3		
Population density adjustments				
Nonmetropolitan indicator			-.722	-5.2
(Metropolitan indicator) x log(population/1000)			-.153	-7.0
Region				
North Central (omitted)				
Northeast	.074	1.2	.090	1.5
South	.229	3.2	.268	4.0
West	-.056	-0.8	-.020	-0.3
N	354		354	
Chi square	1960		1994	
R-square	0.58		0.58	
F	29.6		38.8	

The two variables that reflect the composition of the college population base have highly significant regression coefficients. The first measure is the percentage of full-time undergraduate students in two-year colleges, which is positively related to college enlistment rates. The second measure--the percentage of the college population base in the civilian labor force--is the most significant predictor (as measured by the t statistics) among the independent variables. In interpreting this regression coefficient, one should recall that this measure would be considerably lower than average in small SMSAs that contain large state universities, such as Lawrence, Kansas. Hence, the dependence of the college enlistment rates on this factor may be spurious because nonresident students add to an SMSA's population base, but the enlistments among these students will show up as increments to the accession counts for other areas.

To eliminate some of the problems associated with interpreting college enlistment rates for small areas, larger units of analysis are needed. One choice involves restricting attention to large metropolitan areas and grouping the smaller metropolitan areas with the nonmetropolitan areas in the same state.

Table 4.4 reports the logistic regression results when the units of analysis consist of the metropolitan areas with populations exceeding one million and the relative complements of these areas in each of the 50 states. With 39 metropolitan areas exceeding a million in population and 50 states, there are 89 units at this level of aggregation.

Interestingly, while most of the regression coefficients remain the same order of magnitude as their analogues for smaller metropolitan areas, the coefficient for "Percent in civilian labor force" is greatly reduced, and it is no longer statistically significant at the 5 percent level. On the other hand, the coefficients pertaining to the percentage of students in two-year colleges remain about the same, adding further evidence that two-year college campuses may be more fruitful locales for military recruiting when compared to four-year colleges and universities. Both regression equations in Table 4.4 again confirm that college enlistment rates are substantially lower in the extremely large

Table 4.4

LOGISTIC REGRESSION EQUATIONS RELATING COLLEGE ENLISTMENT RATES TO FACTORS AFFECTING RECRUITING, UNITS OF ANALYSIS: LARGE METROPOLITAN AREAS AND THEIR RELATIVE COMPLEMENTS WITHIN STATES

Independent Variable	Equation 1 b	Equation 1 t	Equation 2 b	Equation 2 t
Constant	-6.142	-10.3	-4.968	-6.2
Economic factors				
Log(unemployment rate)	.397	3.0	.349	2.8
Log(wage rate)	-.737	-3.1	-.673	-3.1
College population base				
Percent of students in two-year colleges	.614	2.2	.588	2.2
Percent in civilian labor force	.725	1.1	.710	1.1
Population characteristics				
Percent black	-.003	-0.6	-.001	-0.3
Percent Hispanic	-.014	-3.6	-.013	-3.6
Percent in military service	.034	0.5	.030	0.5
Metropolitan area population				
1,000,000 - 2,000,000	-.033	-0.3		
2,000,000 - 4,000,000	-.049	-0.4		
Above 4,000,000	-.231	-1.7		
Population density adjustments				
Indicator of complements of large metropolitan areas			-1.208	-2.2
(Large MA indicator) x log(population/1000)			-.168	-2.3
Region				
North Central (omitted)				
Northeast	-.063	-0.7	-.045	-0.5
South	.256	2.5	.251	2.6
West	-.002	0.0	.016	0.1
N	89		89	
Chi square	794		771	
R-square	0.62		0.63	
F	9.4		10.9	

metropolitan areas after allowing for differences in economic and demographic characteristics of the population.

Since the college enlistment rates in large cities are so highly dependent on population size, if one changes the units of analysis from metropolitan/nonmetropolitan areas to states and MEPS areas, then controlling for the concentration of population in large cities becomes more difficult. One approach would be to use the population density (population per square mile) in conjunction with other measures. After trying this choice and others, we were led by the regression results for the metropolitan area analyses to use two measures: (1) the proportion of the population in nonmetropolitan areas, and (2) the proportion in metropolitan areas times the logarithm of the metropolitan population in thousands. The rationale for these choices rests in part on the fact that these variables would coincide with the measures in the large metropolitan area analysis for those locations that are entirely metropolitan or nonmetropolitan. Moreover, they seem to provide better fits in analyzing the enlistment rates at the state and MEPS levels.

The results of the analyses using states and MEPS areas as units of analysis are given in Table 4.5. For the most part, the regression coefficients for the two levels of aggregation are in line with one another and the results from the metropolitan area analysis. Of special interest to this study is the fact that the regression coefficients for the two-year college percentages are statistically significant (or nearly so) for all units of analysis.

Some of the anomalies that appear in this and earlier tables are attributable to imperfections in our data and lack of fit in the models. Since the percentage of military personnel in the population is only available at the state level, that measure is misspecified at other levels of aggregation. One of the problems in fitting regression models of this type is that regional variation in the enlistment rates cannot be suitably captured using a few indicator variables, and alternative specifications of location (say, using longitude and latitude) are less readily interpretable. Besides, the use of longitude and latitude requires adding an interaction term or other correction terms to allow for the high enlistment rates in the southeastern part of the United

Table 4.5

LOGISTIC REGRESSION EQUATIONS RELATING COLLEGE ENLISTMENT RATES TO FACTORS AFFECTING RECRUITING, UNITS OF ANALYSIS: 50 STATES AND D.C. (EQUATION 1) AND MEPS AREAS (EQUATION 2)

Independent Variable	Equation 1 b	Equation 1 t	Equation 2 b	Equation 2 t
Constant	-6.567	-6.8	-7.010	-9.3
Economic factors				
Log(unemployment rate)	.436	2.4	.450	2.7
Log(wage rate)	-.617	-2.0	-.361	-1.2
College population base				
Percent of students in two-year colleges	1.009	2.5	.624	1.6
Percent in civilian labor force	.688	0.7	.760	0.9
Population characteristics				
Percent black	-.007	-1.4	.006	1.2
Percent Hispanic	-.009	-1.3	-.003	-.6
Percent in military service	.027	0.4	.040	0.5
Population density adjustments				
Proportion of population in nonmetropolitan areas	.237	0.8	.018	0.0
(Proportion metropolitan) x log(population/1000)	-.076	-1.0	-.242	-2.4
Region				
North Central (omitted)				
Northeast	.001	0.0	-.026	-0.2
South	.301	2.8	.172	1.4
West	-.069	-0.5	-.064	-0.5
N	51		67	
Chi square	481		767	
R-square	0.72		0.65	
F	8.2		8.2	

States. The extremely large values of the chi square statistics in Tables 4.2-4.5 point to a substantial lack of fit that we were not able to eliminate through the inclusion of additional independent variables or respecifications of the model. Thus, the analysis reported here falls short of a full explanation of college enlistment patterns across the nation.

The apparent dependence of the enlistment rates for metropolitan areas on the percentage of Hispanic persons in the population may be attributable to the inclusion of regional indicators rather than other measures of location. Within their regions, Texas and California both have very low college enlistment rates and large Hispanic populations. When longitude and latitude are used in lieu of regional indicators in analyzing college enlistment rates at the MEPS level, neither percentage black nor percentage Hispanic are close to being statistically significant, percentage military is significant ($b = 0.174$, $t = 2.5$), and so is percentage of two-year college students ($b = 0.954$, $t = 2.6$). Several regression runs at the state level using latitude and longitude instead of regional indicators also point to the dependence of the college enlistment rates on the size of the military population in the state.

Having provided regression equations at the various levels of aggregation, we can look at the residuals at each level for outliers that might represent recruiting hot spots. Unfortunately, purely statistical tests based on the standardized residuals break down because of the lack of fit apparent in the models, but the standardized residuals can still be used to determine the top performers.

At the SMSA level, the three largest standardized residuals are for El Paso, Texas (7.9); Fayetteville, N.C. (7.8); and San Antonio, Texas (7.1), all of which are near large military installations. At the large metropolitan level, the top performers are San Antonio (6.7), nonmetropolitan Florida (6.0), and St. Louis (5.7). Among the MEPS areas, the top three are New Haven, Connecticut (5.6); Baltimore, Maryland (5.5); and Beckley, West Virginia (4.6). The state leaders are Georgia (4.9), Florida (4.8), and Connecticut (4.7). For the most part, the distributions of standardized residuals appear to be close to normal

with no marked outliers. The only level that admits a clear winner is the large metropolitan level, where San Antonio stands out, but that may be attributable to the fact that San Antonio is ringed by large military installations, and our measure of the proportion of military personnel for San Antonio is the figure for the state of Texas.

Except perhaps for San Antonio, our search for recruiting hot spots led to identifying areas that are warmer than others, but no area that clearly merits the label of a recruiting hot spot. To the contrary, given the uniformly low level of college enlistment rates across the United States, one might justifiably say that only cool and cold spots are evident.

A positive note pertaining to the two-year colleges and vocational schools is our finding that, in FY82, areas in which the proportion of college students attending two-year colleges was high also had higher than average college enlistment rates after allowing for other factors that affect recruiting. This provides indirect evidence that students attending two-year colleges are more likely to enlist than those in four-year colleges, which in turn supports our belief that the two-year colleges would provide more fruitful locales for future recruiting efforts than would the four-year colleges. However, our inability to pinpoint areas that exhibit marked success in recruiting students with some college casts doubt about the feasibility of significantly improving college recruiting using existing recruiting strategies and incentives.

V. RECRUITERS' VIEWS OF THE TARGET MARKET AND RECOMMENDATIONS FOR PENETRATING IT

This study sought to identify recruiting strategies and incentives that might be particularly effective in penetrating the two-year college and vocational school market. To this end, we planned to interview recruiters in areas (e.g., MEPS) that were unusually successful in recruiting college students and to contrast their strategies and recommendations with recruiters in other areas.

In general, the search for recruiting "hot spots" proved unsuccessful (see Section IV). Regardless of aggregation level (e.g., state, MEPS, metropolitan area), differences in the numbers of accessions with some college could be explained just as well by economic, social, and geographic factors as by recruiting strategies and incentives.

Rather than first identifying hot spots and then recruiters in them, we sought individual recruiters who had recruited large numbers of college students, wherever they might be. We fully recognized that economic, social, and geographical factors might explain their success just as well as or better than the recruiting strategies and incentives they employed. Nevertheless, these recruiters, by virtue of the numbers of their accessions, would have had sufficient exposure to and experience with the market to make their views and recommendations instructive, especially when contrasted with those of regular recruiters.

This part of our study, then, attempted to answer a set of questions regarding recruiting strategies and incentives based on interviews with "successful" and "regular" recruiters. More specifically, we asked if successful and regular recruiters differ in their:

- demographic characteristics
- characterization of the target market

- strategies for recruiting in the target market
- uses of enlistment incentives
- recommendations for increasing enlistments from the market

Before presenting the methodological details and findings of the interviews, four caveats are in order. First, the data collected from interviews provide information about recruiters' perceptions and "theories" about recruiting in the target market, not about their actual behavior. Observations of recruiters in day-to-day recruiting activities were beyond the scope of this study. Second, some recruiters, being salesmen, may try to "sell" the interviewer with somewhat exaggerated descriptions of their tactics. Although interviewing techniques help to avoid such responses, uncertainty about the validity of the data will inevitably remain. Third, there are certain recommendations for increasing accessions from the market that recruiters are unlikely to think of or to mention. Recruiters are unlikely to think of recommending for themselves *training* focused on recruiting college students; this recommendation was not mentioned in the interviews. Moreover, recruiters are unlikely to mention *quotas* or "goaling" for the postsecondary market since such a recommendation would increase their workloads and perhaps result in shortfalls, at least in the near term. As expected, the recruiters did not recommend goaling. Fourth, we make no claim that the successful and regular recruiters are representative of their respective populations; selection strategies and small sample sizes preclude representativeness. However, our objective in these interviews was *not* to estimate differences between successful and regular populations. Rather, we sought creative, feasible ideas for penetrating the two-year college and vocational school market.

IDENTIFICATION OF SUCCESSFUL RECRUITERS

The Defense Manpower Data Center's accessions file for FY82 provided information on every FY82 NPS enlistee with one or more years of college, and the identification number of the recruiter credited with the enlistment. Using this file, we listed the identification numbers of all recruiters, by service, who had accounted for one or more

accessions with some college. Of 25,518 such accessions, the Air Force accounted for 8,206 (32 percent), the Army for 10,215 (40 percent), the Marine Corps for 1,593 (6 percent), and the Navy for 5,504 (22 percent). More importantly for this study, only the Air Force and the Army had a substantial number of recruiters who accounted for even five or more accessions with some college (Table 5.1). For this reason, the search for "successful" recruiters was restricted to the Air Force and the Army.

Table 5.1

DISTRIBUTIONS OF ACCESSIONS WITH SOME COLLEGE PER RECRUITER

	Number (Percent) of Recruiters by Service			
Number of Accessions	Army	Navy	Air Force	Marines
31-40	1 (.02)	0 (0)	3 (.11)	0 (0)
21-30	12 (.26)	1 (.03)	7 (.26)	0 (0)
11-20	32 (.69)	6 (.19)	67 (2.51)	0 (0)
6-10	175 (3.79)	5 (1.41)	313 (11.73)	5 (.46)
5	174 (3.76)	9 (1.85)	173 (6.48)	12 (1.10)
4	296 (6.40)	5 (4.46)	209 (7.83)	21 (1.93)
3	563 (12.18)	301 (9.42)	338 (12.66)	71 (6.51)
2	1110 (24.00)	685 (21.44)	465 (17.42)	222 (20.37)
1	2261 (48.90)	1953 (61.13)	1094 (40.99)	759 (69.63)

Initially, we arbitrarily defined Air Force and Army recruiters as "successful" if they had recruited 10 or more NPS accessions in FY82 with one or more years of college. (Recall that the Army's CRP set a quota of two college accessions per month or 24 per year--see Section III.) Using this definition, we identified those MEPS with high concentrations of successful recruiters. (We focused on MEPS in order to carry out the interviews efficiently and economically.) As is clear from Figure 5.1, and predictable from the hot spot analysis in Section IV, those MEPS with the most successful recruiters were found almost exclusively in the South and, overwhelmingly, in the Puerto Rico MEPS. These areas, for example, have lower per capita incomes than other parts of the country and traditionally have been more productive for military recruiting.

To improve the geographical spread of interviews across the country (MEPS), especially where there are large concentrations of two-year colleges and students, we adjusted our definition of successful recruiters downward to seven or more accessions with one or more years of college. Even with this definition, the geographical distribution was restricted. In the end, we chose five MEPS in which to conduct the interviews: Jacksonville, Florida; Los Angeles, California; Milwaukee, Wisconsin; Raleigh, North Carolina; and Seattle, Washington. The Los

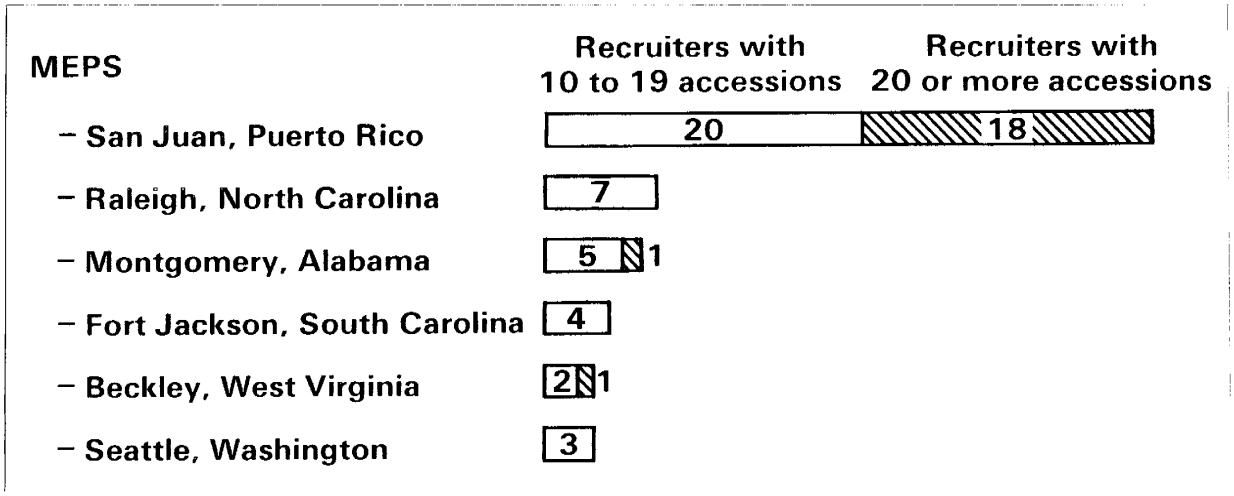


Fig. 5.1 -- MEPS with "successful" recruiters

Angeles MEPS served as a site for pilot work. The data presented here were based on interviews with 18 successful and 26 regular recruiters in the remaining four MEPS.

PROCEDURES FOR CONDUCTING THE INTERVIEWS

With the cooperation of the Air Force and Army recruiting commands, representatives of both services at each of the MEPS were contacted and asked to locate those recruiters we had identified (by identification number) as successful, and to arrange for interviews with them. The contact person was asked to: (a) identify successful recruiters from their ID numbers, (b) arrange for interviews with the group of them that would last approximately 1.5 hours, (c) identify regular recruiters, and (d) arrange for the regular recruiters to join the successful recruiters; the joint meeting was expected to last about an hour.

In practice, this interview plan was only approximated at best. In some cases, successful recruiters were no longer at their FY82 recruiting station, others were on leave, and still others were involved in processing an enlistee and were unavailable. In all but one instance, all recruiters, successful and regular, were present for the meeting and remained for the entire interview period. This modification in plans was tolerated since the alternative of a staggered meeting meant that a number of recruiters would be lost because they had to return to the field.

The interviews were carried out during the third week of August 1983. The interviewer first met with the district recruiting commander or his designee. The purpose of this meeting was to explain the study and to gather the distict commander's views regarding the postsecondary market. This meeting typically lasted about 2.5 hours.

During the interviews, the interviewer briefly explained the purpose of the study and then began the interview. The interviewer was guided by the following set of topics even though the course of the interviews varied as the discussion progressed: (a) demographic characteristics of the recruiters, (b) demographic characteristics of recruiters' recruiting areas, (c) links with institutions in the market, (d) comparison of the market with the high school market, (e) comparison

of recruiting in two-year colleges with recruiting in postsecondary vocational schools, (f) recruiting strategies used with colleges, (g) enlistment incentives used in the market, and (h) recommendations for increasing the penetration of the market.

FINDINGS FROM INTERVIEWS WITH SUCCESSFUL AND REGULAR RECRUITERS

Perhaps the most striking finding from the interviews was that successful and regular recruiters were quite similar both in their background characteristics and in the recruiting tactics and incentives that they used. Indeed, the successful recruiters were surprised to be so identified. They did not systematically work the market in any self-conscious way.

Background Characteristics

The 18 successful and 26 regular recruiters were virtually indistinguishable in their background characteristics. Seventy-six percent of the successful recruiters and 74 percent of the regular recruiters had taken courses in two- or four-year colleges, all but one successful and two regular recruiters had the postsecondary institutions in their recruiting areas, all but one successful and two regular recruiters had one to four years of recruiting experience, two-thirds of the successful and the regular recruiters had recruited in one to three recruiting areas, and none of the recruiters had specialized in recruiting college students.

Recruiters' Perceptions of the High School and Target Markets

We define a recruiting market as the institutions in the market and their students. Recruiters' characterizations of high schools and two-year colleges, and the students in them, overlapped greatly, regardless of whether they were identified as successful recruiters. For this reason, we report findings aggregated over successful and regular recruiters.

Recruiters' Perceptions of High School and the Postsecondary Institutions. Recruiters characterized high schools as the *primary* recruiting market and the postsecondary institutions as a *secondary*

market. They did this on the basis of *market size*--there are overwhelmingly more high schools and high school students. Moreover, the substantial number of prior servicemen found in the postsecondary institutions--370,000 in two-year colleges and 120,000 in vocational schools in FY81 (Shavelson et al., 1983)--entered into recruiters' perceptions of the size of the market for NPS accessions.

The two types of institutions were also characterized by recruiters differently with respect to *access* to eligible students (see Table 5.2). In contrast to the postsecondary institutions, students attend high school on a fixed schedule, most are on high school campuses at the same time, and most high schools have well-established policies with regard to military recruiting.

The institutions in the two markets, however, were perceived by recruiters as similar in their attitudes toward the military. In general, these institutions were viewed as not having favorable attitudes toward military recruiting since their primary focus is

Table 5.2

RECRUITERS' PERCEPTIONS OF HIGH SCHOOLS AND POSTSECONDARY INSTITUTIONS

Characteristic	High Schools	Postsecondary Schools
Size of market	Large	Small
Students with prior military service	None	Many
Attendance	Mandatory	By choice
Hours of attendance	Fixed	Variable
Location of students	Clustered	On-and-off campus
Access to students	Consistent points of entry	Variable points of entry
Attitudes toward military	Variable, tending to unfavorable	Variable, tending to unfavorable

academic--to enable students to continue on to postsecondary education from high school or to continue their postsecondary education. Nevertheless, recruiters recognized that these attitudes varied from school to school, especially among high schools.

Recruiters' Perceptions of Students in High Schools and the Postsecondary Institutions. Recruiters perceived college students as more mature than high school students. They attributed this maturity to postsecondary students' encounter with the reality of earning a living, to attending a school where attendance is not mandatory, to available alternatives (e.g., civilian labor force, military service), and to earning high or even minimally adequate grades. More than one recruiter, half jokingly, characterized high school students as impulsive, interested more in having cash to buy a car and a stereo than in considering alternatives that build toward a future career (see Table 5.3).

Postsecondary students were also characterized by the recruiters as more concerned about the quality of life in the military. They were concerned about pay and "shopped around" the different services to determine the maximum pay and benefits they could receive. But concerns about pay and benefits were tempered with other requirements such as job satisfaction, acquisition of job skills that provided experience required by civilian jobs, characteristics of coworkers, and the quality of living conditions (e.g., housing, working hours). According to the recruiters, then, college students, more than high school students, viewed the military as an occupational alternative, at least for the near term. Their decisions reflected a deliberate weighing of occupational and educational alternatives.

Recruiters' Perceptions of Students in Two-year Colleges and Vocational Schools

Recruiters' viewed students in two-year colleges and vocational schools as similar in level of maturity and quality of life factors that influenced their decisions to enlist. Students in the two types of postsecondary institutions, however, differed in several important respects. If anything, students in vocational schools were more career

Table 5.3

RECRUITERS' PERCEPTIONS OF STUDENTS

Characteristic	High School	Postsecondary Schools
Reason for attending school	Mandated by law	Expected by student or parent
Goals for military service	Not well formulated	Well formulated
Decisionmaking	Impressionistic	Deliberate
Decision influencers:[a]		
(a) for education	Parents, peers, and educators	Parents
(b) for enlistment	Parents and peers	Independent
Concerns influencing enlistment decision	Immediate needs such as a car	Quality of life such as: income, job satisfaction, skill acquisition, living conditions

[a] A report published by the Orkand Corporation, *Parents' Perceptions of Their Influence on Youths' Enlistment Decisions*, concluded that "The overwhelming evidence...suggests that parents do *not* perceive themselves as having a major role in their children's enlistment decisions. Few parents report ever attempting to influence their children's enlistment decisions" (1983, p. ii).

oriented than two-year college students, initially seeking jobs in narrow skill areas corresponding to their training. Vocational school students were more likely to have tried to find civilian employment before considering military service. And vocational school students were perceived by recruiters as less likely to meet NPS accession standards because they tended to score lower on the Armed Forces Qualification Test, and to have had prior military service.

The recruiters also reported an important difference between two-year college institutions and vocational schools. The former were more likely to be accredited than the latter. This meant that a student with 45 units from an accredited two-year college qualified for a higher pay

grade (E-3) than did a student with the equivalent units from a nonaccredited vocational school. Moreover, even if the vocational school were accredited, some of the courses offered were not considered by the military to be academic courses and, consequently, these units were not counted in the determination of pay grade. Both these conditions associated more with vocational schools than two-year colleges meant that recruiters had less to offer students from the former and therefore experienced less success with vocational school students.

Tactics for Recruiting in Two-Year Colleges and Vocational Schools

By recruiting tactics, we refer to the ways recruiters gain access to the institutions, deal with administrators' and faculty's concerns about competition for students, make their presence known, and "sell" military service to the students. Here, especially, we expected to find differences between successful and regular recruiters. Perhaps successful recruiters had established cooperative, enduring links with the postsecondary institutions. Perhaps they had overcome what some recruiting commanders perceived as "fear" of this unfamiliar market. Or perhaps the successful recruiters had creative methods for "selling" students from these institutions.

These expectations were not borne out by the interviews. Regardless of whether recruiters were successful in recruiting from the market, they reported following regulations in seeking permission from administrators to visit the campus. The degree of cooperation attained depended, in many cases, on whether someone in administration or on the faculty was a prior serviceman; if so, the recruiter felt more comfortable and tended to experience success in establishing links. As for maintaining a presence on campus, there seemed to be a consensus that a continual physical presence was unnecessary, uncomfortable, and unlikely to be condoned by the institutions, and unwise given recruiting goals.

A physical presence was unnecessary because most students tended to ignore recruiters. Brochures and other recruiting material, if permitted by the institution, provided a reminder of military recruiting to the students. Also, if the recruiter had located a cooperative

individual or individuals in the institution, most often prior servicemen, he would often get referrals. A few recruiters indicated that a physical presence was uncomfortable because some students were less than friendly and more than one recruiter reported confrontations. The recruiters agreed that most institutions that supported recruiting did so with some trepidation--regardless of the assurances from the recruiters that the military was *not in competition* with the school's goals, the recruiter's continual presence rekindled concerns about competition. Finally, the recruiters unanimously agreed that a continued physical presence would be unwise because, just in terms of numbers, the high school market was much more likely to produce the numbers of monthly accessions needed to meet recruiting goals.

To gain the cooperation of the postsecondary institutions, the importance of assuring administrators, faculty, *and* students that the military shares the same goal--keeping students in school until they complete their education--was emphasized by the recruiters. Delayed entry programs provided one example of how cooperation could be achieved, ROTC programs linked to two-year colleges were another, "stripes for education" was still another, as were lateral entry programs and the reserves. Even so, recruiters reported that many institutions were unwilling to cooperate.

Successful and regular recruiters also unanimously voiced the same strategy for recruiting students in the market. This is the strategy they used with high school students and the one, apparently, that they were taught in recruiter training. Each student was treated individually. The recruiter attempted to identify the student's educational and occupational goals, and educational and job-related background. Then the recruiter matched background with enlistment incentives for which the individual was eligible. By showing the student how military service fit with his or her goals and the special benefits that he or she would receive, the recruiter attempted to increase the attractiveness of military service.

Recruiters reported that they tended to contact students at their parents' homes during vacations and holidays. That is, much of the recruiting of postsecondary students was based on follow-up procedures for high school graduates. Typically, these were high school graduates

who had been out a year or two and were still on the recruiter's list of graduates. These contact periods were most propitious since students had just completed examinations and were about to or had received their grades. Students struggling with academics were perceived by the recruiters as being more likely to consider the military as a welcome alternative to school, at least for the enlistment period. They could continue their education while serving and/or return to school afterwards with money to pay for tuition and housing.

The recruiters, then, recruited within the institutions, assuring administrators of cooperation and pointing out enlistment programs that would keep students in school until they had graduated. They also recruited the potential "stop out"--the student struggling with school, finances, or both--at home as part of their regular follow-up of high school graduates.

The market, when defined as institutions and their students, exists in two places--at school and at home. Although the majority of students attending two-year colleges live at home and within a 50 mile radius of the college (Shavelson et al., 1983), often the college and the home fall in different recruiting areas. This means that a recruiter who works with a student extensively at the local college is likely to lose the student to his or her home recruiter. This partitioning of the market acts as a disincentive to recruiters for working postsecondary institutions. A recruiter, then, who is credited with many "assists" might achieve a local reputation as a dedicated recruiter, but is also liable to experience shortfalls in recruiting goals and the sanctions that ensue. The Army's experience with college-designated recruiters suggests that having recruiters whose sole responsiblity is to recruit from postsecondary institutions is probably not a viable solution to this problem if other changes in the recruiting incentive structure are not made, because it may create a disincentive for recruiters to recruit high school graduates who continue their education. Perhaps some kind of partial credit toward enlistment goals is a workable compromise that might be explored.

The recruiters reported several differences in working with students from the postsecondary market as compared with students from the high school market. First, since postsecondary students might be

eligible for more or different enlistment incentives, it was imperative that the recruiter be fully familiar with the "product" they had to offer. This was especially important since college students were likely to shop around for the best incentive package offered by one or another service. Second, since college students acquired a vocabulary adapted to the college environment--a language referring to courses, units earned, buildings and other locations on and off campus, etc.--the recruiters said that some minimal knowledge of this vocabulary was necessary. Finally, recruiters said that college students' enlistment decisions were made more deliberately than high school students' decisions, and were less influenced by parents, peers, and recruiters.

Enlistment Incentives for Recruiting in Postsecondary Institutions

Recruiters were asked if they had found any enlistment incentives particularly useful in recruiting from the market. We expected to find educational benefits, enlistment bonuses, stripes for education, loan forgiveness, tuition assistance programs, and the reserves particularly attractive to postsecondary students. In general, we were not surprised. Army recruiters found educational benefits useful because they could offer more in benefits than the other services. Air Force recruiters found loan forgiveness and tuition assistance programs particularly helpful since they "sold" the Air Force as conducive to continuing college education while serving. Neither the Army nor Air Force recruiters found the reserves particularly attractive, and Army recruiters did not find enlistment bonuses particularly attractive to college students.[1]

According to the recruiters, an incentive that proved very attractive to postsecondary students was the opportunity to enter a military occupational specialty in which the student had been trained, or for which the student wanted to acquire skills and experience. This was especially the case when a student was eligible for a lateral entry

[1]Data from recruiting experiments on educational benefits and enlistment bonuses are available and could be analyzed to determine whether recruiters' perceptions fit with actual enlistment behavior of individuals with some college in their backgrounds. Such an analysis was beyond the scope of this study.

program. Unfortunately, the job specialities sought by college students were also the ones that were generally attractive; often they were not available to be offered.

Recruiters' Recommendations for Increasing Market Penetration

At the close of the interviews, recruiters were asked to make recommendations for increasing penetration of the market. Although none had thought systematically about this before, a number of their suggestions regarding students and institutions might bear further consideration (see Table 5.4). Not unexpectedly, they did not mention special training or quotas for students; nevertheless we have included them in Table 5.4.

Table 5.4

RECRUITERS' RECOMMENDATIONS FOR RECRUITING FROM THE POSTSECONDARY MARKET

Focus of Recommendation	Recommendation
Students	Focus media campaigns on two-year college and postsecondary vocational school students.
	Give college students priority for attractive job specialities.
	Provide additional lateral entry options.
	Increase the number of prior-service accessions.
Institutions	Develop ASVAB testing in market.
	Provide links to administrators and faculty with prior military service.
	Educate the educators about the benefits offered by military service.
	Provide an adequate, realistic lead time to develop market.
Recruiters	Provide training focused on recruiting from target market.
	Establish recruiting goals for accessions from target market.

Students. Among the recommendations for recruiting students, the only one that has not been touched upon so far is directing media campaigns to the market. This recommendation grew out of the recruiters' finding that unless college students were considering military service and shopped around, they were not aware of the financial, educational, and job benefits currently offered by military service. In the recruiters' estimation, existing media campaigns were too broad or directed more to the high school market than to the postsecondary market.

Institutions. Links with prior servicemen on the faculty or in the administration of postsecondary institutions was touched upon above. Prior servicemen were found by the recruiters to be the most understanding of and willing to support recruiters. Developing and maintaining these links would, in some recruiters' opinions, facilitate recruiting, especially as recruiters rotate throughout the recruiting area.

A few recruiters (and an education specialist) recommended an Armed Services Vocational Aptitude Battery (ASVAB) testing program similar to the one currently instituted in many high schools. Such a program would provide links with the institutions, identify students, and inform recruiters of their AFQT classification so that enlistment incentives could be planned. Administrators in the institutions, however, would immediately raise the question, "What's in it for them?" At present, ASVAB testing is not geared to college academic or vocational counseling. Furthermore, even if an ASVAB program were implemented with validation studies to determine appropriate uses of the test for college counseling, the number of collegiate institutions that might be attracted to the program is unknown at present. Unless some quid pro quo was offered the institutions, such as military jobs for graduates, the program would probably be viewed as competitive with the educational goals of the institutions, if not a redundant service for students since academic and vocational counseling are centerpieces of these institutions (Shavelson et al., 1983).

The recommendations for "educating the educators" stemmed from the recruiters finding that many educators' views of military service have not progressed beyond the tumultuous Vietnam era. They are unaware of educational and other benefits offered by the Armed Forces, the opportunities for continuing higher education while serving, and the job-skill training provided. Whether this "education," in whatever form, would change the attitudes of those educators who do not support recruiting remains to be seen. At least it would have the virtue of updating educators' knowledge of the Armed Forces and what they have to offer youth.

In addition to the recruiters' recommendations, two additional mechanisms that might increase accessions from the market are readily available--training and quotas (goals). While the payoff associated with training is uncertain at this time, providing recruiters with some knowledge of the postsecondary institutions and the students is probably worthwhile. The quota mechanism is more problematic. When mentioned by the interviewer, the recruiters said they already had enough goals. If the decision were made to establish goals, alternative ways in which this may be accomplished, perhaps including those briefly discussed above, should be carefully evaluated before implementation. Implementation of a policy for setting goals for two-year college and vocational school students should be monitored closely with the possibility of modifying the policy or its method of implementation.

SUMMARY AND IMPLICATIONS FOR RECRUITING

Eighteen recruiters with seven or more FY82 college NPS accessions were interviewed to determine: (a) their demographic characteristics, (b) perceived differences between the high school and postsecondary recruiting markets, (c) recruiting tactics for the postsecondary market, and (d) recommendations for increasing the penetration of this market.

The responses of the "successful" recruiters were contrasted with those of "regular" recruiters, i.e., those with fewer than seven FY82 NPS college accessions. The objective of these interviews was to identify characteristics of successful recruiters and their recruiting strategies and incentives that distinguished them from the regular

recruiters. Such differences might signal characteristics on which to select recruiters in order to increase enlistments from two-year colleges and vocational schools, or recruiting tactics that might be implemented across the recruiting commands to do so, or topics on which to train regular recruiters to increase accessions from these institutions.

We found that successful and regular recruiters were similar in demographic characteristics, in their recruiting strategies, and in the enlistment incentives they used. Most of the recruiters had taken college-level coursework, most had postsecondary educational institutions in their recruiting areas, most had been recruiting for one to four years, and most had recruited in one to three recruiting areas. None specialized in recruiting from these institutions.

The recruiters distinguished the postsecondary market from the high school market by: (a) size--the high school market is substantially larger, and (b) access--access is easier in high schools due to mandatory attendance and the structure of the high school day. They characterized college students as considerably more mature due to economic and educational realities experienced in college. College students were also perceived as less impulsive and more deliberate in enlistment decisionmaking than high school students. The former were more concerned about the quality of military life in terms of pay, benefits, skill acquisition, housing, and working hours.

The recruiting strategies used in the colleges were the same ones used in the high school market. Educational benefits, enlistment bonuses, and other incentives were geared to individual student's goals and qualifications. Extensive physical presence on two-year college campuses was not part of their recruiting strategies nor was it recommended.

Recruiting incentives perceived by the recruiters as particularly effective included the Army College Fund, loan forgiveness and tuition assistance programs, and the availability of certain popular occupational specialities. Enlistment bonuses (Army) and the reserves (as a means for helping to finance education) were not perceived as particularly effective.

To increase market penetration, the recruiters suggested focused advertising, priority for college students in popular occupational specialties, lateral entry in greater numbers of occupations, and increased numbers of prior servicemen. A few recruiters also suggested developing the high school ASVAB testing program for two-year colleges and vocational schools, providing links to prior servicemen in these institutions, and informing administrators and faculty about what the Armed Forces had to offer in terms of financial aid for education and job skill training. The recruiters did not suggest, but we added, quotas and training specifically focused on students in these postsecondary institutions.

From the interview findings, we have drawn the following implications for recruiting in the target market.

Access to the Market

Access to the colleges, in any systematic and enduring way, requires the establishment of cooperative linkages between military recruiting and the institutions. Most have a natural link with military recruiting that might initially facilitate access--prior servicemen who are now administrators or faculty members in the institutions. But initial links cannot be expected to evolve into a lasting relation in the absence of cooperation. And cooperation includes more than assurances that students will not be recruited out of the classrooms and that there are enlistment programs (e.g., delayed entry, the reserves) that support these assurances. Cooperation will probably mean that the institutions get something like priority for job placements or special financial support for their students in return for access (see Section III). In the end, cooperation will probably increase the cost of accessions from the market relative to high school graduates. An important question that remains to be answered is whether or not they are worth the added cost.

Enlistment Incentives for the Market

The recruiters had some creative suggestions regarding incentives for recruiting college students. Some--such as focused advertising campaigns--require little, if any, changes in current recruiting policy. However, even these recommendations must be evaluated to determine whether they are cost effective and whether they might be perceived as direct competition with the institutions for students.

Other recommendations are costly and problematic, such as giving college students priority for attractive jobs, providing additional lateral entry options, or increasing the number of prior service accessions. These options must also be evaluated, for example, by using data to compare the performances of prior and nonprior servicemen drawn from the postsecondary schools, and to assess their effects on the morale of those servicemen not eligible for priority consideration.

Still other recommendations, such as ASVAB testing, are of doubtful merit when the costs of adequately implementing such a program are balanced against their potential payoff and other alternatives.

Recruiter Selection and Training

Since successful and regular recruiters were similar in background and recruiting experience, we cannot base selection and training recommendations on differences. However, both successful and regular recruiters pointed to the importance of knowing the "product" and knowing the college population. This suggests that recruiters should be especially selected or trained so that they have good knowledge of the college population and packages of enlistment incentives for which college students are eligible and to which the students are particularly attracted. However, this recommendation is costly both in terms of implementing it and in terms of the costs of high school graduate shortfalls because the top recruiters have been removed from this market.

VI. CONCLUSIONS AND RECOMMENDATIONS

The two-year colleges and vocational schools present a dilemma to military recruiting. The students in these institutions provide attractive potential sources of high-quality enlistees. Many entering freshmen are single, above average in aptitude and achievement, and in good physical condition; enlisted men with one or more years of college have higher AFQT scores and complete their first term of enlistment at higher rates than do other high school graduates. However, the number of potentially recruitable men in these institutions is small compared to the number of potentially recruitable high school graduates, college enlistment rates are uniformly low across the country, and past attempts to systematically recruit these students have not been successful.

Therefore, the feasibility of directing large-scale recruiting efforts in the two-year colleges and vocational schools is uncertain. Instead of drawing conclusions and making recommendations on strategies to improve recruiting in these institutions, we recommend collecting additional information to reduce this uncertainty.

MONITOR THE POSTSECONDARY MARKET

The postsecondary market--two- and four-year colleges, vocational and technical schools, and the civilian labor force--is potentially far too important to be neglected by military recruiting. Yet, in comparison to the high school recruiting market, little is known about the number and quality of nonprior servicemen who might be enlisted from each of these postsecondary sectors, or about the costs and benefits of recruiting from them using feasible recruiting tactics and incentives.

We recommend that DoD monitor enlistments from the postsecondary market more closely than has been done in the past. Implementation of this recommendation would require little additional data collection. Instead of just recording how many years of college each enlistee has completed, we recommend recording: (a) whether an enlistee had attended college but completed less than one year, as well as one, two (etc.) years of college, (b) the type of college or postsecondary school he

last attended, (c) the date he last attended college or postsecondary school, and (d) the enlistee's main activity immediately preceding enlistment (e.g., unemployed, attending a two-year college, working in construction).

This additional information would permit policy analysts to pinpoint the various postsecondary sectors more precisely than is currently possible. For example, in this study we could only identify enlistees "with some college" in their backgrounds and not enlistees from two- and four-year colleges, from vocational/technical schools, or from the civilian labor force. Moreover, we suspect that a substantial number of men had attended college but had dropped out before completing a full year of college. Hence, estimates of the number of enlistments from the postsecondary education market may be low and may give a false impression of the recruiting potential of certain types of postsecondary institutions.

CONDUCT ADDITIONAL RESEARCH ON THE POSTSECONDARY MARKET

Little research has been conducted on the postsecondary recruiting market. Our study of two-year colleges and vocational schools has begun to address questions of market size, quality, and penetrability, but substantial work remains to be done on penetrability, performance during service, and recruiting costs. Other sectors of the postsecondary market have not been systematically studied (but see Becerra, 1983).

Instead of concentrating on particular types of institutions, we recommend conducting additional research on the entire postsecondary recruiting market, which may provide two-thirds of all military enlistments. This research would capitalize on existing data bases and might include the following: (1) an analysis of DMDC accession files to determine the extent to which enlistees with some college fill critical occupational specialties in the services, progress through the ranks, separate early, reenlist, and so on; (2) an analysis of the Educational Benefits Experiment (Fernandez, 1982; Polich, Fernandez, and Orvis, 1982) to identify enlistments with some college and compare their enlistment rates with those of high school graduates under alternative incentive conditions; and (3) an analysis of High School and Beyond (HS&B) to determine the flow of high school seniors into higher

education, the civilian labor force, and military service, and subsequent changes within those sectors over time.

DMDC Accession Data: Performance during Service

Given currently low enlistment rates from and probable added costs of penetrating the postsecondary market, the question remains, "Are they worth it?" An attempt should be made to track the military careers of men with some college and compare their careers with those of non-high school graduates and high school graduates in terms of their filling critical occupational specialties, rate of progress through the ranks, assignment to leadership roles, rates of separation and retention, and so on. Data bearing on military careers are available from DMDC and, with the appropriate analysis, may help reduce the uncertainty about the contributions of enlistees with some college in their backgrounds.

Education Benefits Test

Recruiters consider education benefits to be attractive recruitment incentives to two-year college students. The question remains, "To what extent do education benefits influence enlistment behavior of men from the postsecondary market?" To answer it requires objective evidence. Data from the Educational Assistance Test Program, a national experiment, provide one such source of evidence. The test was conducted from December 1, 1980, through September 30, 1981, and comprised the following programs:

- Control Program: The basic Veterans Education Assistance Program (VEAP) was available in all services, and in the Army, "kickers" of up to $6,000 were made available to qualifying enlistees.
- Ultra-VEAP Kicker Program: This program contained the same package as the Control Program but the Army "kickers" were raised to a maximum of $12,000.
- Noncontributory VEAP Program: DoD paid the VEAP contribution ($2,700) for qualifying enlistees in all services; the Army offered "kickers" of up to $6,000.

- Tuition/Stipend Program: For qualifying enlistees in all services, DoD paid for tuition assistance ($1,200/year) plus a subsistance allowance ($300/month), for up to four academic years; the benefits were indexed to inflation; the enlistee could exercise the option to transfer these benefits to dependents or to cash them out upon reenlistment; and no extra benefits were offered to Army enlistees.

Each program was offered in geographically dispersed areas of the country to individuals with I to IIIA AFQT scores. By comparing enlistees with some college in their backgrounds across the four test conditions, uncertainty regarding the effectiveness of education benefits in the postsecondary market can be reduced.

High School and Beyond: Senior Class of 1980

The study of the flow of high school seniors into the postsecondary market grows out of a concern for obtaining good estimates of the number of students who leave two-year colleges and other postsecondary sectors to enter military service. To date, DoD data only permit identification of enlistees who have completed one or more years of college, wherever they came from. DoD data do not permit us to distinguish enlistees who enrolled in but did not complete their first year of college, and college dropouts might have high propensities for military service.

An analysis of the base year survey (1980) and first two follow-ups (1982, 1984) from HS&B would permit estimation of the proportion of the 1980 senior class that entered military service within two and four years of graduation, and how many of these enlistees came from two-year colleges and other postsecondary sectors. Such an analysis would facilitate characterizing enlistments from high schools, two- and four-year colleges, other postsecondary institutions, and the civilian labor force. It would provide firmer estimates of the numbers of enlistments from each sector, data on the quality of enlistments, and new data on factors influencing the enlistment decision. As a consequence, DoD would have better information for deciding whether and on what postsecondary sector to target recruiting.

APPENDIX:
COLLEGE RECRUITING PERFORMANCE MEASURES BY STATE AND LARGE METROPOLITAN AREA

Table A.1

COLLEGE RECRUITING PERFORMANCE MEASURES
BY STATE AND METROPOLITAN AREA, FISCAL YEAR 1982

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Alabama	5,695	4,317	475	157	69,701	29,092	82,272	181,065	2.62
Anniston, AL	234	174	23	6	2,042	0	4,800	6,842	3.36
Birmingham, AL	1,163	875	87	33	17,210	6,464	12,647	36,321	2.40
Florence, AL	188	144	14	4	2,600	0	4,179	6,779	2.07
Gadsden, AL	185	146	17	2	1,728	2,359	0	4,087	4.16
Huntsville, AL	486	353	46	9	6,233	748	7,610	14,591	3.15
Mobile, AL	688	507	67	14	8,236	1,953	7,174	17,363	3.86
Montgomery, AL	555	414	51	22	5,572	1,387	7,679	14,638	3.48
Tuscaloosa, AL	159	118	16	4	4,033	1,964	13,295	19,292	0.83
Nonmetropolitan areas	1,939	1,513	141	60	21,381	13,374	24,888	59,643	2.36
Alaska	295	252	15	1	6,753	2,752	4,135	13,640	1.10
Arizona	3,973	2,994	233	76	68,524	27,107	56,727	152,358	1.53
Phoenix, AZ	2,070	1,489	124	45	41,372	14,985	28,520	84,877	1.46
Tucson, AZ	855	672	44	19	16,137	5,604	19,322	41,063	1.07
Nonmetropolitan areas	1,048	833	65	12	11,015	6,518	8,885	26,418	2.46
Arkansas	3,157	2,492	221	57	32,984	7,784	45,161	85,929	2.57
Fayetteville-Springdale, AR	246	189	17	0	4,219	0	12,054	16,273	1.04
Fort Smith, AR-OK	245	194	18	1	2,642	2,736	0	5,378	3.35
Little Rock-No. Little Rock, AR	534	388	45	10	7,512	1,350	5,655	14,517	3.10
Pine Bluff, AR	169	141	9	1	1,315	0	2,500	3,815	2.36
Nonmetropolitan areas	1,856	1,496	123	44	16,778	4,250	24,326	45,354	2.71
California	23,636	17,725	1,540	463	646,397	308,890	369,907	1,325,194	1.16
Anaheim-Santa Ana, CA	1,508	1,093	87	27	64,922	31,470	24,948	121,340	0.72
Bakersfield, CA	378	300	12	2	7,550	3,739	1,629	12,918	0.93
Chico, CA	186	152	9	4	5,495	2,627	11,354	19,476	0.46
Fresno, CA	522	387	36	8	14,514	6,545	11,650	32,709	1.10
Los Angeles-Long Beach, CA	6,507	4,930	416	110	205,231	87,129	116,415	408,775	1.02
Modesto, CA	292	209	18	5	5,229	3,607	1,681	10,517	1.71
Oxnard-Simi Valley-Ventura, CA	655	462	50	10	11,898	7,552	1,334	20,784	2.41
Redding, CA	211	169	17	0	2,235	2,922	0	5,157	3.30
Riverside-San Bernadino, CA	1,901	1,449	92	26	31,062	15,149	10,317	56,528	1.63
Sacramento, CA	1,557	1,188	94	32	32,233	16,604	26,866	75,703	1.24
Salinas-Seaside-Monterey, CA	287	223	15	7	5,254	3,673	107	9,034	1.66
San Diego, CA	1,829	1,369	163	44	52,637	27,393	38,480	118,510	1.38
San Francisco-Oakland, CA	2,888	2,104	212	87	92,598	41,337	52,133	186,068	1.14
San Jose, CA	1,155	804	75	39	43,357	20,565	24,047	87,969	0.85
Santa Barbara-Santa Maria, CA	290	217	26	9	11,689	5,337	14,867	31,893	0.82
Santa Cruz, CA	167	110	14	9	6,254	3,116	6,367	15,737	0.89
Santa Rosa, CA	336	247	16	12	6,859	4,895	3,145	14,899	1.07
Stockton, CA	394	295	21	0	7,756	2,759	3,268	13,783	1.52
Vallejo-Fairfield-Napa, CA	544	414	29	8	7,072	3,900	2,206	13,178	2.20
Visalia-Tulare-Porterville, CA	249	181	25	2	4,455	3,592	0	8,047	3.11
Yuba City, CA	175	136	23	2	1,739	2,580	0	4,319	5.33
Nonmetropolitan areas	1,577	1,264	86	20	26,358	12,399	19,093	57,850	1.49

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Colorado	3,752	2,689	240	99	75,515	16,795	78,475	170,785	1.41
Colorado Springs, CO	646	469	55	16	6,937	3,858	4,564	15,359	3.58
Denver-Boulder, CO	1,824	1,228	102	60	41,967	6,764	37,187	85,918	1.19
Fort Collins, CO	198	147	7	6	7,377	0	14,418	21,795	0.32
Greeley, CO	141	108	9	5	4,300	1,408	8,401	14,109	0.64
Pueblo, CO	222	177	10	3	2,491	740	4,033	7,264	1.38
Nonmetropolitan areas	717	558	56	9	12,443	4,025	9,872	26,340	2.13
Connecticut	3,731	2,824	266	73	72,519	14,189	61,841	148,549	1.79
Bridgeport-Stamford, CT	757	569	47	18	17,374	2,295	10,726	30,395	1.55
Hartford-New Britain-Bristol, CT	1,339	1,035	80	23	27,457	5,990	29,634	63,081	1.27
New Haven-Waterbury-Meriden, CT	937	696	83	24	18,578	3,166	17,496	39,240	2.12
New London-Norwich, CT	324	251	27	4	4,420	2,004	1,639	8,063	3.35
Nonmetropolitan areas	374	273	29	4	4,690	734	2,346	7,770	3.73
Delaware	883	713	44	16	13,274	4,360	16,245	33,879	1.30
Wilmington, DE-NJ-MD	695	562	34	12	12,108	3,828	14,005	29,941	1.14
Nonmetropolitan areas	410	334	25	7	2,738	1,577	2,240	6,555	3.81
District of Columbia	796	639	55	19	16,456	0	35,273	51,729	1.06
Washington, DC-MD-VA	4,133	3,250	307	120	76,339	20,687	70,702	167,728	1.83
Florida	15,348	11,316	1,067	370	188,759	89,874	115,019	393,652	2.71
Bradenton, FL	199	151	15	3	1,800	2,556	0	4,356	3.44
Daytona Beach, FL	477	363	40	14	5,803	3,694	3,505	13,002	3.08
Fort Lauderdale-Hollywood, FL	1,161	809	74	29	18,819	8,123	1,562	28,504	2.60
Fort Myers-Cape Coral, FL	331	241	16	9	2,522	1,805	0	4,327	3.70
Fort Walton Beach, FL	324	244	29	9	1,954	1,389	0	3,343	8.67
Gainesville, FL	234	147	42	19	9,366	4,194	22,807	36,367	1.15
Jacksonville, FL	1,351	1,050	83	27	12,572	5,722	6,016	24,310	3.41
Lakeland-Winter Haven, FL	589	461	27	10	5,024	2,082	3,336	10,442	2.59
Melbourne-Titusville-Cocoa, FL	718	554	55	16	5,858	4,759	3,079	13,696	4.02
Miami, FL	1,651	1,184	113	38	37,895	15,893	16,823	70,611	1.60
Ocala, FL	270	224	12	3	1,565	1,553	0	3,118	3.85
Orlando, FL	1,271	950	69	39	15,621	5,964	9,750	31,335	2.20
Panama City, FL	253	179	33	4	1,742	1,859	0	3,601	9.16
Pensacola, FL	738	531	78	13	6,138	3,210	2,100	11,448	6.81
Sarasato, FL	246	176	10	4	2,663	0	500	3,163	3.16
Tallahassee, FL	274	173	48	15	8,348	2,176	18,737	29,261	1.64
Tampa-St. Petersburg, FL	2,582	1,847	171	70	28,622	14,171	16,817	59,610	2.87
West Palm Beach-Boca Raton, FL	594	420	37	20	9,347	4,273	3,234	16,854	2.20
Nonmetropolitan areas	2,082	1,610	115	28	13,100	6,451	6,753	26,304	4.37
Georgia	8,661	6,765	545	192	95,337	25,470	90,729	211,536	2.58
Albany, GA	261	199	15	9	2,145	1,150	1,618	4,913	3.05
Athens, GA	156	103	13	10	5,698	0	17,138	22,836	0.57
Atlanta, GA	2,762	2,141	191	61	46,278	9,015	34,739	90,032	2.12
Augusta, GA-SC	503	410	25	10	5,023	1,032	4,796	10,851	2.30
Columbus, GA-AL	472	360	50	16	3,693	1,433	2,740	7,866	6.36
Macon, GA	556	431	35	10	3,656	1,511	2,361	7,528	4.65
Savannah, GA	348	250	34	18	3,367	597	3,798	7,762	4.38
Nonmetropolitan areas	3,681	2,946	197	63	26,542	12,109	24,679	63,330	3.11

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Hawaii	1,079	879	93	23	25,613	9,880	19,151	54,644	1.70
Honolulu, HI	828	662	78	20	20,981	8,639	16,479	46,099	1.69
Nonmetropolitan areas	250	216	15	3	4,632	1,241	2,672	8,545	1.76
Idaho	1,359	1,028	97	26	21,000	8,038	19,841	48,879	1.98
Boise City, ID	309	215	22	6	5,648	0	6,385	12,033	1.83
Nonmetropolitan areas	1,050	813	75	20	15,352	8,038	13,456	36,846	2.04
Illinois	12,932	10,171	742	246	265,364	99,883	202,269	567,516	1.31
Bloomington-Normal, IL	128	96	3	8	7,352	0	17,798	25,150	0.12
Champaign-Urbana-Rantoul, IL	180	146	14	10	10,957	3,050	25,428	39,435	0.36
Chicago, IL	6,575	5,109	345	149	161,584	57,243	78,844	297,671	1.16
Decatur, IL	234	191	16	3	2,223	850	1,502	4,575	3.50
Kankakee, IL	162	133	8	1	1,945	927	1,747	4,619	1.73
Peoria, IL	510	391	34	8	7,691	4,082	4,893	16,666	2.04
Rockford, IL	418	324	14	5	5,128	2,324	706	8,158	1.72
Springfield, IL	279	216	13	6	3,689	2,311	748	6,748	1.93
Nonmetropolitan areas	2,979	2,406	204	36	48,059	20,933	60,560	129,552	1.57
Indiana	8,779	7,261	426	130	98,928	20,197	132,685	251,810	1.69
Anderson, IN	287	233	19	4	1,882	0	1,730	3,612	5.26
Bloomington, IN	100	77	11	3	6,174	0	22,438	28,612	0.38
Elkhart, IN	130	108	9	1	1,681	0	1,095	2,776	3.24
Evansville, IN-KY	411	321	15	8	6,310	2,029	5,703	14,042	1.07
Fort Wayne, IN	551	459	27	9	7,326	2,512	5,645	15,483	1.74
Gary-Hammond-East Chicago, IN	1,192	1,020	46	17	11,113	1,265	8,403	20,781	2.21
Indianapolis, IN	1,847	1,480	97	34	19,043	3,325	10,874	33,242	2.92
Kokomo, IN	208	169	14	1	1,315	782	668	2,765	5.06
Lafayette-West Lafayette, IN	192	156	16	3	7,165	550	25,557	33,272	0.48
Muncie, IN	209	166	11	6	4,730	1,326	14,325	20,381	0.54
South Bend, IN	332	277	17	2	5,941	1,245	11,054	18,240	0.93
Terre Haute, IN	259	214	16	8	4,839	840	10,516	16,195	0.99
Nonmetropolitan areas	2,718	2,297	113	28	19,205	5,997	12,712	37,914	2.98
Iowa	4,247	3,402	334	73	70,837	27,128	71,158	169,123	1.97
Cedar Rapids, IA	314	264	18	3	4,900	3,382	2,732	11,014	1.63
Davenport-Rock Island, IA-IL	705	546	38	11	8,542	3,962	3,856	16,360	2.32
Des Moines, IA	490	381	28	13	9,074	4,766	6,030	19,870	1.41
Dubuque, IA	142	126	4	0	2,342	0	2,925	5,267	0.76
Iowa City, IA	49	28	14	3	6,467	0	15,861	22,328	0.63
Sioux City, IA-NE	188	146	13	2	2,487	1,476	1,998	5,961	2.18
Waterloo-Cedar Falls, IA	287	236	25	5	4,681	1,699	8,199	14,579	1.71
Nonmetropolitan areas	2,316	1,865	195	40	35,958	12,950	31,819	80,727	2.42
Kansas	2,300	1,768	117	39	60,866	15,723	60,370	136,959	0.85
Lawrence, KS	57	47	2	2	5,972	890	16,114	22,976	0.09
Topeka, KS	191	148	7	2	3,841	0	2,762	6,603	1.06
Wichita, KS	390	296	11	7	10,624	831	7,775	19,230	0.57
Nonmetropolitan areas	1,135	874	73	23	30,598	9,822	31,989	72,409	1.01

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Kentucky	4,890	3,769	299	89	59,596	17,164	71,968	148,728	2.01
Lexington-Fayette, KY	435	306	38	15	10,732	1,812	18,430	30,974	1.23
Louisville, KY-IN	1,556	1,172	105	30	17,396	7,522	12,564	37,482	2.80
Owensboro, KY	134	108	7	3	1,203	333	1,184	2,720	2.57
Nonmetropolitan areas	2,335	1,837	128	36	24,971	6,393	36,619	67,983	1.88
Louisiana	3,775	2,882	240	76	79,517	6,929	101,374	187,820	1.28
Alexandria, LA	173	144	11	4	1,985	807	795	3,587	3.07
Baton Rouge, LA	366	258	30	7	13,630	0	27,523	41,153	0.73
Lafayette, LA	100	74	9	1	5,407	0	10,652	16,059	0.56
Lake Charles, LA	146	122	5	2	3,402	0	4,391	7,793	0.64
Monroe, LA	199	148	20	4	3,587	0	7,666	11,253	1.78
New Orleans, LA	1,091	799	69	26	24,762	4,612	22,185	51,559	1.34
Shreveport, LA	502	365	37	15	6,547	919	2,824	10,290	3.60
Nonmetropolitan areas	1,196	970	59	17	20,197	591	25,338	46,126	1.28
Maine	2,257	1,905	116	53	20,491	4,419	24,504	49,414	2.35
Bangor, ME	302	249	23	14	4,228	788	9,419	14,435	1.59
Lewiston-Auburn, ME	203	163	10	3	1,547	539	1,418	3,504	2.85
Portland, ME	426	352	21	9	5,441	1,528	6,515	13,484	1.56
Nonmetropolitan areas	1,045	898	54	22	7,099	1,564	6,309	14,972	3.61
Maryland	6,374	5,154	386	120	91,116	29,915	70,462	191,493	2.02
Baltimore, MD	3,068	2,476	180	44	43,539	13,981	31,645	89,165	2.02
Cumberland, MD-WV	211	179	17	3	2,062	1,941	2,824	6,827	2.49
Hagerstown, MD	155	123	6	3	1,387	1,009	0	2,396	2.50
Nonmetropolitan areas	882	720	42	16	6,869	1,861	7,886	16,616	2.53
Massachusetts	6,884	5,300	386	165	160,575	41,661	185,944	388,180	0.99
Boston-Lowell-Brockton, MA	3,900	3,019	204	84	107,128	25,035	119,784	251,947	0.81
New Bedford, MA	603	467	27	13	8,657	2,056	8,095	18,808	1.44
Pittsfield, MA	205	160	11	2	3,748	1,328	4,614	9,690	1.14
Springfield-Chicopee-Holyoke, MA	941	713	57	21	20,434	6,137	35,869	62,440	0.91
Worcester-Fitchburg, MA	876	669	57	33	16,452	4,627	16,685	37,764	1.51
Nonmetropolitan areas	356	271	29	11	4,156	2,478	897	7,531	3.85
Michigan	15,341	12,514	752	202	216,816	76,620	184,365	477,801	1.57
Ann Arbor, MI	317	244	26	9	15,199	2,665	31,323	49,187	0.53
Battle Creek, MI	320	274	10	4	3,193	1,520	1,842	6,555	1.53
Bay City, MI	209	174	9	1	2,341	3,990	0	6,331	1.42
Benton Harbor, MI	245	203	10	4	3,509	1,056	1,614	6,179	1.62
Detroit, MI	6,983	5,646	300	95	90,521	34,022	35,203	159,746	1.88
Flint, MI	1,115	933	37	13	9,241	4,348	4,764	18,353	2.02
Grand Rapids, MI	638	494	37	7	18,088	6,446	13,127	37,661	0.98
Jackson, MI	209	181	13	0	2,931	2,034	763	5,728	2.27
Kalamazoo-Portage, MI	449	349	31	12	11,089	2,040	15,864	28,993	1.07
Lansing-East Lansing, MI	590	470	41	18	21,127	5,216	31,456	57,799	0.71
Muskegon-Norton Shores, MI	423	354	20	4	3,475	2,613	0	6,088	3.29
Saginaw, MI	448	374	24	3	4,116	0	2,028	6,144	3.91
Nonmetropolitan areas	3,093	2,558	187	31	30,019	9,777	46,381	86,177	2.17

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Minnesota	5,684	4,468	327	124	120,636	23,667	103,816	248,119	1.32
Duluth-Superior, MN	456	325	32	9	7,428	1,414	8,844	17,686	1.81
Minneapolis-St. Paul, MN	2,808	2,152	136	63	66,538	14,386	43,794	124,718	1.09
Rochester, MN	138	111	10	2	3,506	1,984	873	6,363	1.57
St. Cloud, MN	262	219	17	8	6,649	0	12,967	19,616	0.87
Nonmetropolitan areas	2,054	1,681	136	42	33,580	4,998	30,547	69,125	1.97
Mississippi	3,110	2,338	328	74	47,289	31,586	44,986	123,861	2.65
Biloxi-Gulfport, MS	376	269	36	5	3,258	4,909	0	8,167	4.41
Jackson, MS	360	258	50	12	10,189	5,907	8,963	25,059	2.00
Pascagoula-Moss Point, MS	228	149	28	7	1,823	0	0	1,823	15.36
Nonmetropolitan areas	2,063	1,596	209	49	31,363	20,770	36,023	88,156	2.37
Missouri	7,048	5,400	397	116	100,879	20,838	113,143	234,860	1.69
Columbia, MO	106	82	9	1	7,689	0	20,735	28,424	0.32
Joplin, MO	145	105	9	0	2,510	629	2,605	5,744	1.57
Kansas City, MO-KS	1,867	1,443	72	34	28,033	8,406	13,869	50,308	1.43
St. Joseph, MO	161	121	7	3	2,054	0	2,889	4,943	1.42
St. Louis, MO-IL	3,480	2,686	221	56	50,480	17,461	27,197	95,138	2.32
Springfield, MO	268	198	24	3	7,163	0	16,110	23,273	1.03
Nonmetropolitan areas	2,527	1,959	145	38	24,566	3,829	39,249	67,644	2.14
Montana	1,159	923	74	17	16,660	1,671	24,006	42,337	1.75
Billings, MT	141	113	7	0	2,588	0	3,053	5,641	1.24
Great Falls, MT	158	123	9	5	1,215	0	427	1,642	5.48
Nonmetropolitan areas	860	687	58	12	12,857	1,671	20,526	35,054	1.65
Nebraska	2,120	1,646	148	46	43,768	8,809	43,544	96,121	1.54
Lincoln, NE	227	163	15	8	11,398	1,269	19,025	31,692	0.47
Omaha, NE-IA	987	745	63	24	15,063	3,533	11,902	30,498	2.07
Nonmetropolitan areas	1,064	859	88	16	18,644	5,756	12,617	37,017	2.38
Nevada	1,131	859	62	21	16,609	2,501	9,753	28,863	2.15
Las Vegas, NV	664	505	33	14	8,946	1,420	4,609	14,975	2.20
Reno, NV	249	182	20	3	5,604	676	5,144	11,424	1.75
Nonmetropolitan areas	197	162	7	2	2,059	405	0	2,464	2.84
New Hampshire	1,718	1,289	98	60	20,356	4,460	28,431	53,247	1.84
Manchester-Nashua, NH	502	355	31	14	5,793	2,031	7,000	14,824	2.09
Portsmouth-Dover-Rochester, NH	760	601	39	25	9,265	683	10,312	20,260	1.92
Nonmetropolitan areas	737	576	36	26	7,474	1,746	11,962	21,182	1.70
New Jersey	8,250	6,506	389	165	151,716	46,074	108,722	306,512	1.27
Atlantic City, NJ	193	148	15	3	3,810	1,187	3,783	8,780	1.71
Jersey City, NJ	563	422	16	9	10,243	1,638	8,317	20,198	0.79
Long Branch-Asbury Park, NJ	734	591	29	16	8,625	3,508	1,923	14,056	2.06
New Brunswick-Perth Amboy, NJ	627	501	20	11	17,943	5,014	21,607	44,564	0.45
Newark, NJ	2,035	1,609	109	51	41,973	13,516	34,994	90,483	1.20
Paterson-Clifton-Passaic, NJ	456	378	20	9	9,205	2,303	6,462	17,970	1.11
Trenton, NJ	307	229	17	11	8,742	3,090	13,910	25,742	0.66
Vineland-Milville-Bridgeton, NJ	191	157	15	3	1,597	1,073	0	2,670	5.62

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Nonmetropolitan areas	867	664	40	13	8,270	2,579	958	11,807	3.39
New Mexico	2,059	1,678	98	25	24,513	4,455	29,691	58,659	1.67
Albuquerque, NM	772	627	34	14	11,090	0	13,018	24,108	1.41
Las Cruces, NM	157	111	15	3	3,306	0	9,278	12,584	1.19
Nonmetropolitan areas	1,128	939	49	8	10,117	4,455	7,395	21,967	2.23
New York	22,058	16,875	1,205	415	397,569	173,714	402,661	973,944	1.24
Albany-Schenectady-Troy, NY	1,141	871	87	36	21,115	9,592	25,895	56,602	1.54
Binghamton, NY-PA	424	326	17	6	7,273	3,652	7,843	18,768	0.91
Buffalo, NY	2,084	1,619	130	35	34,765	15,132	32,340	82,237	1.58
Elmira, NY	221	177	17	1	1,737	0	1,169	2,906	5.85
Glen Falls, NY	226	184	13	5	1,714	1,457	0	3,171	4.10
Nassau-Suffolk, NY	2,767	2,181	175	57	66,770	28,749	38,323	133,842	1.31
New York, NY-NJ	8,573	6,346	435	156	185,193	62,155	179,837	427,185	1.02
Newburgh-Middletown, NY	417	334	16	10	4,051	2,502	773	7,326	2.18
Poughkeepsie, NY	366	274	17	6	6,350	4,689	5,078	16,117	1.05
Rochester, NY	1,410	1,055	72	25	26,241	7,923	29,063	63,227	1.14
Syracuse, NY	1,089	835	60	20	17,425	9,226	24,503	51,154	1.17
Utica-Rome, NY	630	463	29	13	6,663	5,857	4,661	17,181	1.69
Nonmetropolitan areas	3,403	2,762	172	59	39,383	27,677	60,881	127,941	1.34
North Carolina	8,399	6,454	785	270	109,634	62,025	124,484	296,143	2.65
Asheville, NC	239	191	14	3	3,277	2,241	3,132	8,650	1.62
Burlington, NC	177	127	15	5	1,864	928	2,651	5,443	2.76
Charlotte-Gastonia, NC	748	535	60	23	14,430	6,471	11,860	32,761	1.83
Fayetteville, NC	627	501	67	18	3,146	3,690	2,802	9,638	6.95
Greensboro-Winston-Salem, NC	1,043	782	89	41	16,469	6,375	21,162	44,006	2.02
Hickory, NC	146	107	7	2	2,118	1,219	1,191	4,528	1.55
Jacksonville, NC	174	126	25	4	1,182	1,469	0	2,651	9.43
Raleigh-Durham, NC	642	460	70	31	20,450	5,350	42,483	68,283	1.03
Salisbury-Concord, NC	207	165	15	6	3,190	1,027	1,912	6,129	2.45
Wilmington, NC	208	140	29	5	2,761	1,150	4,082	7,993	3.63
Nonmetropolitan areas	4,155	3,294	391	131	40,560	32,105	33,209	105,874	3.69
North Dakota	628	467	79	15	22,086	6,679	21,382	50,147	1.58
Bismarck, ND	92	63	15	1	2,995	1,475	801	5,271	2.85
Fargo-Moorhead, ND-MN	172	138	15	7	8,861	0	15,741	24,602	0.61
Grand Forks, ND-MN	131	98	12	7	4,347	885	7,617	12,849	0.93
Nonmetropolitan areas	344	259	45	2	10,562	5,204	5,565	21,331	2.11
Ohio	18,091	15,109	734	261	208,834	58,219	226,260	493,313	1.49
Akron, OH	975	829	39	17	15,694	0	27,441	43,135	0.90
Canton, OH	669	575	23	10	5,992	2,099	2,277	10,368	2.22
Cincinnati, OH-KY-IN	2,217	1,821	109	32	29,719	7,149	25,887	62,755	1.74
Cleveland, OH	2,744	2,236	91	42	36,223	10,867	19,365	66,455	1.37
Columbus, OH	1,662	1,294	106	24	31,369	4,399	48,791	84,559	1.25
Dayton, OH	1,850	1,551	76	39	17,210	6,784	20,681	44,675	1.70
Hamilton-Middletown, OH	485	400	14	5	5,938	1,228	13,162	20,328	0.69
Lima, OH	372	314	22	5	3,066	2,875	1,415	7,356	2.99
Lorain-Elyria, OH	598	529	18	6	4,691	2,463	2,667	9,821	1.83
Mansfield, OH	274	239	14	3	1,671	878	945	3,494	4.01
Newark, OH	255	215	8	8	1,882	672	2,914	5,468	1.46
Springfield, OH	412	337	18	4	2,933	1,246	2,761	6,940	2.59
Steubenville-Weirton, OH-WV	331	288	11	5	2,248	841	1,511	4,600	2.39

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Toledo, OH-MI	1,257	1,089	39	6	19,017	3,549	25,416	47,982	0.81
Youngstown-Warren, OH	872	739	23	14	10,246	1,352	9,899	21,497	1.07
Nonmetropolitan areas	3,670	3,125	138	48	26,673	11,281	25,834	63,788	2.16
Oklahoma	2,342	1,721	167	38	65,181	17,912	69,815	152,908	1.09
Enid, OK	53	39	2	1	947	0	570	1,517	1.32
Lawton, OK	167	126	16	1	1,746	0	2,912	4,658	3.43
Oklahoma City, OK	634	437	44	13	23,512	5,281	25,792	54,585	0.81
Tulsa, OK	577	409	38	12	14,457	5,228	6,197	25,882	1.47
Nonmetropolitan areas	823	634	64	11	23,817	6,851	34,344	65,012	0.98
Oregon	4,293	3,214	284	86	57,007	29,868	53,132	140,007	2.03
Eugene-Springfield, OR	442	350	37	7	8,156	4,824	12,147	25,127	1.47
Medford, OR	249	182	11	3	2,264	0	3,313	5,577	1.97
Portland, OR-WA	1,742	1,269	119	39	28,532	16,301	14,121	58,954	2.02
Salem, OR	437	312	32	10	5,132	3,512	3,816	12,460	2.57
Nonmetropolitan areas	1,756	1,354	100	31	16,059	8,386	19,735	44,180	2.26
Pennsylvania	15,838	12,847	846	361	211,095	63,786	247,908	522,789	1.62
Allentown-Bethlehem, PA-NJ	831	682	55	14	10,721	3,928	16,051	30,700	1.79
Altoona, PA	250	220	9	4	1,540	2,040	0	3,580	2.51
Erie, PA	504	383	25	12	5,355	140	5,755	11,250	2.22
Harrisburg, PA	755	605	46	20	7,857	3,088	9,088	20,033	2.30
Johnstown, PA	348	290	24	7	2,911	419	3,493	6,823	3.52
Lancaster, PA	407	320	14	6	5,722	0	8,331	14,053	1.00
Northeast Pennsylvania, PA	796	602	67	23	11,512	5,931	13,696	31,139	2.15
Philadelphia, PA-NJ	5,513	4,399	272	126	91,716	27,404	84,008	203,128	1.34
Pittsburgh, PA	2,898	2,319	173	73	43,874	16,973	33,129	93,976	1.84
Reading, PA	429	329	20	7	4,518	1,322	6,024	11,864	1.69
Sharon, PA	183	156	9	4	2,195	553	3,139	5,887	1.53
State College, PA	140	115	11	4	7,036	0	28,099	35,135	0.31
Williamsport, PA	214	174	15	8	2,119	2,896	1,131	6,146	2.44
York, PA	550	440	34	11	4,440	861	4,177	9,478	3.59
Nonmetropolitan areas	3,454	2,944	133	64	28,902	4,793	40,850	74,545	1.78
Rhode Island	1,180	887	63	24	24,821	5,506	35,047	65,374	0.96
Providence-Warwick-Pawtucket, RI	1,071	808	58	20	23,167	5,506	33,817	62,490	0.93
Nonmetropolitan areas	109	79	5	4	1,654	0	1,230	2,884	1.73
South Carolina	5,013	3,887	403	178	61,158	28,338	60,229	149,725	2.69
Anderson, SC	166	129	12	3	2,297	3,151	0	5,448	2.20
Charleston-North Charleston, SC	802	604	70	30	8,792	3,369	8,171	20,332	3.44
Columbia, SC	718	534	68	33	13,576	3,995	17,823	35,394	1.92
Florence, SC	196	149	15	12	2,078	1,594	1,890	5,562	2.70
Greenville-Spartanburg, SC	742	535	66	19	12,378	6,457	15,346	34,181	1.93
Rock Hill, SC	164	123	12	4	2,513	1,580	3,691	7,784	1.54
Nonmetropolitan areas	2,063	1,681	153	71	17,865	7,658	12,168	37,691	4.06
South Dakota	1,058	773	90	26	18,414	587	24,683	43,684	2.06
Sioux Falls, SD	215	144	13	6	3,803	94	2,275	6,172	2.11
Nonmetropolitan areas	841	628	77	20	14,611	493	22,408	37,512	2.05

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Tennessee	5,890	4,543	361	173	85,280	25,286	100,304	210,870	1.71
Chattanooga, TN	671	510	23	17	9,332	2,926	8,707	20,965	1.10
Clarksville-Hopkinsville, TN-KY	288	219	25	9	2,450	617	3,127	6,194	4.04
Johnson City-Kingsport, TN-VA	603	448	33	19	6,822	1,840	9,173	17,835	1.85
Knoxville, TN	576	449	28	18	11,832	2,468	20,030	34,330	0.82
Memphis, TN-AR-MS	1,258	1,006	78	28	20,617	5,948	15,567	42,132	1.85
Nashville-Davidson, TN	949	697	81	33	18,974	4,312	24,179	47,465	1.71
Nonmetropolitan areas	2,122	1,659	124	59	19,682	8,618	21,494	49,794	2.49
Texas	14,818	10,791	972	314	311,045	100,183	267,889	679,117	1.43
Abilene, TX	114	75	12	6	4,047	0	5,757	9,804	1.22
Amarillo, TX	163	110	9	2	4,625	2,712	4,781	12,118	0.74
Austin, TX	514	347	48	24	22,182	3,945	48,833	74,960	0.64
Beaumont-Port Arthur-Orange, TX	432	359	20	4	7,371	0	8,322	15,693	1.27
Brownsville-Harlingen, TX	215	154	12	5	3,228	3,580	0	6,808	1.76
Bryan-College Station, TX	59	29	9	4	6,975	0	27,285	34,260	0.26
Corpus Christi, TX	336	238	19	7	6,214	3,494	762	10,470	1.81
Dallas-Fort Worth, TX	2,948	2,022	207	78	74,720	19,223	43,114	137,057	1.51
El Paso, TX	935	719	69	12	9,719	3,583	9,187	22,489	3.07
Galveston-Texas City, TX	288	208	11	3	3,764	1,135	1,064	5,963	1.84
Houston, TX	2,839	2,038	132	48	64,132	11,362	30,378	105,872	1.25
Killeen-Temple, TX	305	234	27	2	3,151	2,827	851	6,829	3.95
Laredo, TX	71	59	4	1	1,727	1,550	211	3,488	1.15
Longview-Marshall, TX	167	111	18	0	3,597	2,208	2,325	8,130	2.21
Lubbock, TX	212	151	17	4	9,927	0	18,250	28,177	0.60
McAllen-Pfarr-Edinburg, TX	264	213	19	4	4,431	0	5,151	9,582	1.98
Midland, TX	57	38	4	1	1,611	730	0	2,341	1.71
Odessa, TX	85	57	4	0	2,630	1,219	290	4,139	0.97
San Angelo, TX	86	55	6	3	2,730	0	4,047	6,777	0.89
San Antonio, TX	1,881	1,426	138	65	20,840	12,621	13,025	46,486	2.97
Sherman-Denison, TX	116	80	4	2	1,934	1,210	1,121	4,265	0.94
Texarkana, TX-AR	251	191	18	0	1,831	1,212	182	3,225	5.58
Tyler, TX	151	111	14	2	3,247	3,478	1,307	8,032	1.74
Victoria, TX	63	49	4	1	1,518	915	128	2,561	1.56
Waco, TX	171	124	12	3	5,021	6,020	9,203	20,244	0.59
Wichita Falls, TX	138	93	13	3	2,500	0	2,423	4,923	2.64
Nonmetropolitan areas	2,043	1,566	128	29	38,028	17,159	29,892	85,079	1.50
Utah	1,063	775	91	43	45,631	9,718	49,299	104,648	0.87
Provo-Orem, UT	113	71	16	14	13,202	3,672	21,149	38,023	0.42
Salt Lake City-Ogden, UT	791	583	57	24	24,781	3,278	21,404	49,463	1.15
Nonmetropolitan areas	158	121	18	5	7,648	2,768	6,746	17,162	1.05
Vermont	818	666	44	23	11,525	1,832	18,916	32,273	1.36
Burlington, VT	155	123	12	11	4,749	1,022	9,797	15,568	0.77
Nonmetropolitan areas	662	542	32	12	6,776	810	9,119	16,705	1.92
Virginia	7,108	5,548	524	198	99,679	36,658	115,047	251,384	2.08
Charlottesville, VA	134	107	6	5	3,818	932	10,781	15,531	0.39
Danville, VA	179	156	10	1	1,694	1,348	735	3,777	2.65
Lynchburg, VA	220	181	13	3	3,563	1,180	6,247	10,990	1.18
Newport News-Hampton, VA	613	491	51	13	7,920	2,661	8,630	19,211	2.65
Norfolk-Virginia Beach, VA-NC	1,104	824	92	34	14,192	4,724	15,688	34,604	2.66
Petersburg-Colonial Heights, VA	247	200	17	5	1,923	542	3,573	6,038	2.82

State/Metropolitan Area	Enlistments, FY82				Labor Force with Some College	Full-time Undergraduates		Pop. Base	Accs. with Some Coll. per 1000
	Total	HSG	Some Coll.	Coll. Grad.		2-year	4-year		
Richmond, VA	670	507	38	23	13,843	4,161	13,967	31,971	1.19
Roanoke, VA	340	248	30	16	3,889	3,152	1,956	8,997	3.33
Nonmetropolitan areas	2,171	1,758	147	50	24,720	7,931	44,801	77,452	1.90
Washington	5,912	4,394	509	117	98,075	64,872	76,871	239,818	2.12
Bellingham, WA	125	95	11	5	3,754	559	9,013	13,326	0.83
Bremerton, WA	267	210	19	6	2,210	2,262	0	4,472	4.25
Olympia, WA	202	149	21	1	2,605	765	2,646	6,016	3.49
Richland-Kennewick-Pasco, WA	168	128	14	3	2,836	2,271	0	5,107	2.74
Seattle-Everett, WA	1,921	1,354	194	47	46,104	27,638	27,560	101,302	1.92
Spokane, WA	627	476	55	9	10,060	9,485	9,776	29,321	1.88
Tacoma, WA	811	599	77	22	9,086	6,629	5,465	21,180	3.64
Yakima, WA	248	186	22	4	2,265	2,007	0	4,272	5.15
Nonmetropolitan areas	1,203	937	81	16	16,019	10,101	22,411	48,531	1.67
West Virginia	2,662	2,055	191	52	26,894	4,391	42,852	74,137	2.58
Charleston, WV	348	259	25	6	3,886	397	2,756	7,039	3.55
Huntington-Ashland, WV-KY-OH	460	346	34	9	5,068	813	6,237	12,118	2.81
Parkersburg-Marietta, WV-OH	285	240	18	3	2,727	1,882	1,287	5,896	3.05
Wheeling, WV-OH	296	228	13	7	2,911	1,672	2,862	7,445	1.75
Nonmetropolitan areas	1,519	1,190	110	26	15,063	1,168	30,140	46,371	2.37
Wisconsin	6,289	4,852	391	104	111,398	39,170	125,114	275,682	1.42
Appleton-Oshkosh, WI	377	298	24	5	6,508	2,902	8,570	17,980	1.33
Eau Claire, WI	185	129	18	7	4,657	2,266	9,431	16,354	1.10
Green Bay, WI	235	163	24	7	3,909	1,084	4,416	9,409	2.55
Janesville-Beloit, WI	233	180	11	2	2,166	1,372	1,306	4,844	2.27
Kenosha, WI	165	120	15	3	2,595	2,230	3,978	8,803	1.70
LaCrosse, WI	145	110	8	7	4,502	2,430	8,400	15,332	0.52
Madison, WI	302	211	24	12	16,502	9,286	26,595	52,383	0.46
Milwaukee, WI	1,552	1,154	97	21	34,026	8,979	26,225	69,230	1.40
Racine, WI	317	246	17	4	3,047	0	52	3,099	5.49
Sheboygan, WI	114	90	9	2	1,556	0	476	2,032	4.43
Wausau, WI	135	103	14	3	2,226	1,832	0	4,058	3.45
Nonmetropolitan areas	2,377	1,932	117	29	27,960	6,789	34,114	68,863	1.70
Wyoming	505	366	44	7	11,205	4,662	7,203	23,070	1.91
Casper, WY	74	55	6	0	2,016	1,397	0	3,413	1.76
Nonmetropolitan areas	431	311	38	7	9,189	3,265	7,203	19,657	1.93
50 States and D.C.	296,388	230,090	18,393	6,118	4,975,895	1,761,337	4,675,063	11,412,295	1.61

REFERENCES

Austin, A. W., M. K. Hemond, and G. T. Richardson, *The American Freshman: National Norms for Fall 1982*, American Council on Education, University of California at Los Angeles, 1982.

Austin, A. W., M. R. King, and G. T. Richardson, *The American Freshman: National Norms for Fall 1981*, American Council on Education, University of California at Los Angeles, 1981.

Becerra, R. M., *An Assessment of the College Market Spring-Summer 1980*, Institute for Social Sciences Research, University of California at Los Angeles, May 1983.

Broyles, S. G., and G. C. Davis, *Education Directory: Colleges and Universities 1981-82*, National Center for Education Statistics, Washington, D.C., 1982.

Dearman, N. B., and V. W. Plisko, *The Condition of Education*, 1981 Edition, National Center for Education Statistics, Washington, D.C., 1981.

Fernandez, R. L., *Enlistment Effects and Policy Implications of the Educational Assistance Test Program*, The Rand Corporation, R-2935-MRAL, September 1982.

Kanouse, D., et al., *Effects of Postsecondary Experiences on Aspirations, Attitudes, and Self-Conceptions*, The Rand Corporation, R-2616-HEW, April 1980.

Korb, L. J., "Making the Volunteer Force Work," *Defense*, 1982, pp. 2-11.

Parents' Perceptions of Their Influence on Youths' Enlistment Decisions, Final Report, Orkand Corporation, Contract MDA 903-81-C-0629, March 1983.

Pepin, A. J., and A. Q. Wells, *Associate Degrees and Other Formal Awards Below the Baccalaureate 1978-1979*, National Center for Education Statistics, Washington, D.C., February 1981.

Polich, M. J., R. L. Fernandez, and B. R. Orvis, *Enlistment Effects of Military Educational Benefits*, The Rand Corporation, N-1783-MRAL, February 1982.

Shavelson, R. J., G. W. Haggstrom, and J. D. Winkler, *Potential for Military Recruiting from Two-Year Colleges and Postsecondary Vocational Schools*, The Rand Corporation, N-1946-MRAL, January 1983.

Weinberger, C. W., *Military Manpower Task Force: A Report to the President on the Status and Prospects of the All-Volunteer Force*, Government Printing Office, Washington, D.C., October 1982.