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# DEFENSE

# MANPOWER DATA CENTER

## Youth Attitude Tracking Study:

## Propensity Report

## Fall 1990







1600 WILSON BOULEVARD ARLINGTON, VIRGINIA 22209

CEDS/YATS III
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# YOUTH ATTITUDE TRACKING STUDY: PROPENSITY REPORT (FINAL)

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# Table of Contents

# Table of Contents

List of Tables

# Table of Contents

List of Tables (continued)

List of Tables (continued)



List of Figures

List of Figures (continued)

## Acknowledgements

This report is one in a series of reports being produced to document the methods and analytic findings of the Fall 1990 administration of the Communications and Enlistment Decision Studies/Youth Attitude Tracking Study III (CEDS/YATS III). Survey administration in 1990 was faced with a number of difficulties due to its fielding period occurring against the backdrop of Desert Shield and Desert Storm operations. The sense of urgency and concern these events generated underscored the importance of CEDS/YATS III to all project members.

For their accomplishments during a difficult time, special thanks must be given to Westat's Telephone Research Center (TRC) staff, especially its Director, Patricia Skinner, Operations Coordinators, Patricia Warren and Bruce Allen, the supervisors monitoring the YATS project, and, of course, the interviewers. Their patience and perseverance provided us with the quality interviews required.

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## Executive Summary

The Fall 1990 Communications and Enlistment Decision Studies/Youth Attitude Tracking Study III (CEDS/YATS III) was conducted between December 12, 1990 and February 7, 1991. Approximately 10,000 males and females, between 16 and 24 years of age, were included in the nationally administered survey. The survey was conducted using computer assisted telephone interviewing (CATI) methodology, and required approximately 30 minutes per interview to complete.

The demographic characteristics of respondents exhibited several expected patterns given the findings from previous surveys. For example, school, employment, and marital status were all found to be related to respondent age. Sixteen to eighteen year-olds were primarily high school students, whereas the majority of the 19-21 year-olds were either high school graduates no longer in school or postsecondary students. As expected, the majority of the 22-24 year-olds had received high school diplomas. Also, the percentage of young people who were employed increased with age for both males and females. Within age groups, however, males were more likely than females to be employed. Regarding marital status, youth in the older age categories were more likely to be married than the younger youth. Whites accounted for approximately 76 percent of the population, whereas Blacks comprised approximately 14 percent, and other racial minorities comprised approximately 2 percent. Approximately 7 percent of the population were of Hispanic ethnicity.

The questionnaire also asked youth a variety of questions about the likelihood of their serving in the active Military Services (i.e., Army, Navy, Air Force, Marine Corps, and Coast Guard) or Reserve Military Services (i.e., National Guard and Reserves) in the near future. Analyses of the active service enlistment likelihood, or propensity, showed that approximately 29 percent of the males and 11 percent of the females were interested in joining the military. For the Reserve Components, approximately 21 percent of the males and 7 percent of the females indicated positive enlistment propensity.

In general, the Army and Air Force were the most popular active Services among males and females, and the Army National Guard was the most popular Reserve Service for males. As expected, based on previous survey results, the younger youth, 16-18 years of age, expressed a greater interest in enlistment in military service than the older youth. Furthermore, nonwhites were more likely than Whites to express an interest in enlisting in the Armed Forces.

Further analyses of male respondents expressing an interest in joining the military

showed that approximately 15 percent indicated interest in enlistment in only one of the active Military Services, whereas another 15 percent indicated interest in two or more Services. For example, among those who expressed interest in the Army or the Air Force, about one-third indicated they only wanted to join that specific Service, whereas the other two-thirds indicated they would join either that specific Service or another Service.

Finally, enlistment likelihood, or propensity, was examined with respect to recent events in the Middle East. Specifically, enlistment propensity for each of the Military Services was analyzed for three time periods: Pre-Desert Shield (1989 YATS II), Desert Shield (December 12, 1990 - January 14, 1991), and Desert Storm (January 16, 1991 - February 7, 1991). Given the intensity of the mobilization and campaign in the Persian Gulf, in general, the shifts in propensity levels observed in these analyses were minor. However, interesting distinctions in response patterns did emerge between younger and older males: 16-18 year-olds showed a decrease in likelihood of joining the military from peacetime to war, whereas the older males (19-21 year-olds and 22-24 year-olds) expressed an increase in propensity over this period.

In summary, besides presenting a demographic "snapshot" of American youth, the Fall 1990 YATS III continues to provide valuable information about their enlistment propensity especially as global events become increasingly dramatic. Enlisting in the Armed Forces, particularly for younger males, continues to be viewed as a viable career option for nearly one-third of 16-24 year-old males and slightly over one-tenth of 16-24 year-old females. Of particular significance to the present report is the finding that enlistment propensity remained relatively stable between peacetime (1989 YATS II), the Desert Shield mobilization, and the beginning of Desert Storm. Future YATS data will be informative since enlistment propensity can again be examined in the aftermath of the Gulf War.

# 1. INTRODUCTION

This report is one in a series that is being produced to document the methods and analytic findings of the Fall 1990 administration of the Communications and Enlistment Decision Studies/Youth Attitude Tracking Study III (CEDS/YATS III). The main body of this report concentrates on two major analyses of enlistment propensity. The CEDS/YATS III survey methodology is documented in various design reports in this series (Morganstein, 1990; Morganstein and Fahimi, 1991a; and Morganstein and Fahimi, 1991b) and in Appendix A of this report.

### Overview of the Fall 1990 CEDS/YATS III Administration

The Fall 1990 CEDS/YATS III administration represents a continuation of the YATS tracking surveys that have been sponsored by the Department of Defense (DoD) since the Fall of 1975. As in the preceding YATS surveys, CEDS/YATS III administered a 30-minute interview to approximately 10,000 youth nationally using computer assisted telephone interviewing (CATI) technology. Also, as in previous administrations, respondents were selected using random digit dialing (RDD) methodology.

The Fall 1990 administration was conducted in two stages. A prescreening effort to locate eligible youth was conducted for approximately four weeks starting in the middle of November 1990. Interviews were administered from the middle of December 1990 through the middle of February 1991. A description of the data collection effort is presented in Appendix A of this report.

While continuity in the data series was a major objective for the Fall 1990 CEDS/YATS III administration, specific aspects of the methodology were modified to accommodate DoD's expanded goals. The sample universe was expanded to include residents of Alaska and Hawaii and individuals with three or more years of college education. The statistical methodology used for developing national estimates (documented separately in Morganstein and Fahimi, 1991b) also represented refinements of previous YATS procedures.

The Fall 1990 survey administration occurred during a unique historical time frame that must be considered in all reports of analytic findings. During this period, the United States embarked on a major military build-up in the Persian Gulf--the largest overseas build-up since the Vietnam conflict. In this period, the military actions, of the United States and its United Nations coalition forces shifted from a defensive posture designed to protect Saudi Arabia and other nearby countries from Iraq's invasion forces

(Operation Desert Shield) to a full-scale offensive war aimed at Kuwaiti liberation (Operation Desert Storm). These military activities involved major movement of troops and materials from all Services. Notably, this mobilization affected not only active component forces, but also large numbers of Reserve and National Guard units.

### Report Structure

For readers of past YATS reports, much of this 1990 report includes material that will be familiar. Chapter 2 describes the demographic characteristics of the YATS population, and Chapters 3 and 4 provide data on enlistment propensity and its sociodemographic correlates, for the various active and Reserve Services, respectively. These chapters closely parallel the reporting structure established in past reports.

Insight into the enlistment propensity of the labor market is gained through two additional analyses described in Chapters 5 and 6. The first analysis, presented in Chapter 5, focuses on the enlistment propensity for specific active and Reserve Services and the interrelationships among them. This investigation uses the concepts of "brand loyalists" (i.e., individuals expressing enlistment propensity for only one Military Service), "dual loyalists" (i.e., individuals expressing propensity for two Services), and undifferentiated or "all military" propensity (i.e., individuals expressing enlistment propensity for three or more Services) to examine the distribution of youth across the broad range of specific and undifferentiated propensity configurations.

The second analysis capitalizes on the unique historical circumstance that occurred during the data collection period--that is, the mobilization of the defensive Desert Shield operation in the Persian Gulf and its escalation into war, Desert Storm, on January 16, 1991. This analysis, discussed in Chapter 6, examines changes in enlistment propensity accompanying this major military effort. Enlistment propensity levels before the invasion of Kuwait (i.e., in the Fall of 1989), during Desert Shield, and following the beginning of Desert Storm are compared for various market groups.

Although the primary purpose of this report is to provide insights into enlistment propensity, it also serves various secondary purposes. Appendix A summarizes the survey methodology used in the Fall 1990 administration, particularly the ways in which it resembles and differs from that used in the previous YATS II series. This appendix also provides basic statistics regarding data collection (e.g., household screening response rates, interview response rates, and youth eligibility rates).

Appendix B discusses analyses comparing results from the two versions of the enlistment propensity questions included in the Fall 1990 instrument and presents recommendations regarding the use of propensity measures for subsequent analyses of

the Fall 1990 data. In order to ensure strict comparability of estimates over time, weighting adjustments have been applied to YATS data collected in survey administrations before 1990. Appendix C is a methodological note describing these weighting adjustments.

Finally, an appendix is included (Appendix D) that provides a highly condensed overview of the major events that occurred during Desert Shield and Desert Storm. This appendix provides a weekly account of many of the events or actions monitored by the American public. It is within this environment that the Fall 1990 CEDS/YATS III was administered.

# 2. DEMOGRAPHIC CHARACTERISTICS OF THE 1990 YATS II POPULATION

This chapter summarizes the sociodemographic characteristics of the 1990 YATS II population. The description provides the Department of Defense (DoD) with information regarding characteristics and attributes of military-aged youth. These include age, gender, race/ethnicity, marital status, employment and school status, geographic location, and the estimated aptitude of the YATS population.

This chapter is similar in organization to that prepared for the 1989 YATS II propensity report (Bray, et al., 1990). To provide some measure of continuity with this earlier report, the YATS 1990 description considers only youth included in the 1989 YATS sample frame (i.e., youth residing in Alaska or Hawaii or with more than three years of college are not included). The two reports, however, are not strictly comparable as different age categories were used in the two reports. In the present report, the age groupings are: 16-18 year-olds, 19-21 year-olds, and 22-24 year-olds. Nonetheless, some comparisons are made between the 1989 and 1990 findings.[1]

## Age Distribution and Estimated Population Counts

Table 2-1 presents the unweighted age distribution of YATS II survey respondents and the estimated (i.e., weighted) age distribution of the YATS population. Unweighted counts indicate the number of interviews upon which the estimates are based (5,229 males and 2,745 females within the 16-24 year-old range).

The estimated 1990 YATS II population consisted of approximately 12.8 million males and 13.3 million females ages 16 to 24 years (Table 2-1). The sample and estimated population distributions presented in this table clearly demonstrate data collection and sample frame artifacts. Given that the population distribution of youth across the 16-24 year-old age group is relatively constant, the magnitude of decrease in number of youth as age increases shown in the table may appear problematic. For both the sample (i.e., unweighted) and estimated population counts, this decline has a logical explanation.

Population counts decline as a consequence of the YATS II eligibility criteria, which exclude individuals with three or more

[1] YATS II and CEDS/YATS III sample weighting adjustments differ in that the YATS II methodology did not include poststratification adjustment to national census totals. To provide YATS II and CEDS/YATS III comparability, poststratification adjustments were applied to the YATS II 1989 data. Appendix C provides a more detailed discussion of these adjustments.

Table 2-1. Fall 1990 CEDS/YATS III - Age Distribution of the YATS Survey Population

| Age | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | Unweighted N | Estimated Population Count | Estimated Population Percent | Unweighted N | Estimated Population Count | Estimated Population Percent |
| 16 | 815 | 1,790 | 14.0 | 433 | 1,839 | 13.9 |
| 17 | 830 | 1,833 | 14.4 | 403 | 1,660 | 12.5 |
| 18 | 821 | 1,484 | 11.6 | 424 | 1,472 | 11.1 |
| 19 | 760 | 1,916 | 15.0 | 391 | 1,887 | 14.2 |
| 20 | 548 | 1,293 | 10.1 | 279 | 1,373 | 10.4 |
| 21 | 422 | 1,031 | 8.1 | 213 | 1,177 | 8.9 |
| 22 | 368 | 1,198 | 9.4 | 187 | 1,128 | 8.5 |
| 23 | 333 | 1,093 | 8.6 | 201 | 1,339 | 10.1 |
| 24 | 332 | 1,121 | 8.8 | 214 | 1,375 | 10.4 |
| TOTAL | 5,229 | 12,759 | 100.0 | 2,745 | 13,250 | 100.0 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in thousands.

Source: Q402, Q403A.

years of college. For example, the YATS II population estimate of male youth 24 years of age is approximately 1.1 million or 63 percent of the population estimate for 16 year-olds. In contrast, the full CEDS/YATS III population estimate for 24 year-old males (including individuals with three or more years of college as well as those residing in Alaska or Hawaii) is approximately 1.5 million.

The decline in sample (i.e., unweighted) counts is due, in part, to these sample exclusions. In addition, however, the decline in numbers is also due to differential response rates by age group. As noted in Appendix A, older respondents had a lower rate of response to the survey.

### Marital Status, Gender, and Age

Table 2-2 provides data describing the marital status of the 1990 YATS II population partitioned by gender and age range. As noted in the 1989 YATS, differences in marital status were primarily a function of age. The majority (approximately 89 percent of the males and 76 percent of the females) of the 1990 YATS II population have never been married. The proportion of the population that were married at the time of the survey or in the "other" category (widowed, divorced, or separated) increased with age. Also, females were more likely than males to be married (20.6 percent vs. 10.1 percent, respectively).

Table 2-2. Fall 1990 CEDS/YATS III - Marital Status by Gender and Age Range

| Gender/Marital Status | Age Range 16-18 Count | 16-18 Percent | 19-21 Count | 19-21 Percent | 22-24 Count | 22-24 Percent | Total Percent |
|---|---|---|---|---|---|---|---|
| Males | | | | | | | |
| Never married | 5,072 | 99.4 | 3,898 | 92.0 | 2,342 | 68.7 | 88.7 |
| Currently married | 16 | 0.3 | 302 | 7.1 | 971 | 28.5 | 10.1 |
| Other[a] | 12 | 0.2 | 37 | 0.9 | 94 | 2.8 | 1.1 |
| TOTAL | 5,100 | 100.0 | 4,238 | 100.0 | 3,407 | 100.0 | 100.0 |
| Females | | | | | | | |
| Never married | 4,861 | 97.8 | 3,397 | 76.6 | 1,775 | 46.2 | 75.7 |
| Currently married | 85 | 1.7 | 964 | 21.7 | 1,683 | 43.8 | 20.6 |
| Other[a] | 26 | 0.5 | 76 | 1.7 | 384 | 10.0 | 3.7 |
| TOTAL | 4,972 | 100.0 | 4,437 | 100.0 | 3,843 | 100.0 | 100.0 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in thousands.
- Percentage distributions may not sum to 100.0 due to rounding.
- Cell estimated population counts will not sum to the total estimated population due to rounding and missing information for some cases.

[a]Includes widowed, divorced, or separated.

Source: Q402, Q713C, CALCAGE.

For 16-18 year-olds, gender differences in marital status were virtually nonexistent. For 19-21 year-olds, however, the difference between the percentages of currently married males and females was 14.6 percentage points. This difference increased to 15.3 percentage points for 22-24 year-olds.

### Race/Ethnicity, Gender, and Age

The estimated population counts and percentages of the YATS II population by race/ethnicity, gender, and age are given in Table 2-3. (In this table the designations "White," "Black," and "Hispanic" are mutually exclusive.) For all age groups, Whites comprised about three quarters of the population. Blacks made up approximately 14 percent of the total population, while Hispanics accounted for approximately 7 percent. Blacks outnumbered Hispanics by approximately a 2:1 margin across both gender and age.

This last result distinguishes 1990 findings from those reported for the 1989 YATS II population. The 1989 YATS II consistently estimated a population of Hispanic

Table 2-3. Fall 1990 CEDS/YATS III - Race/Ethnicity by Gender and Age Range

| Gender/Race Ethnicity | Age Range 16-18 Count | 16-18 Percent | 19-21 Count | 19-21 Percent | 22-24 Count | 22-24 Percent | Total Percent |
|---|---|---|---|---|---|---|---|
| Males | | | | | | | |
| White | 3,886 | 76.5 | 3,260 | 77.2 | 2,676 | 78.8 | 77.3 |
| Black | 780 | 15.4 | 590 | 14.0 | 420 | 12.4 | 14.1 |
| Hispanic | 322 | 6.3 | 294 | 7.0 | 231 | 6.8 | 6.7 |
| Other[a] | 92 | 1.8 | 80 | 1.9 | 68 | 2.0 | 1.9 |
| TOTAL | 5,080 | 100.0 | 4,224 | 100.0 | 3,394 | 100.0 | 100.0 |
| Females | | | | | | | |
| White | 3,770 | 75.9 | 3,411 | 76.9 | 2,833 | 73.8 | 75.6 |
| Black | 768 | 15.5 | 589 | 13.3 | 601 | 15.6 | 14.8 |
| Hispanic | 335 | 6.7 | 348 | 7.8 | 340 | 8.9 | 7.7 |
| Other[a] | 93 | 1.9 | 86 | 1.9 | 65 | 1.7 | 1.8 |
| TOTAL | 4,966 | 100.0 | 4,434 | 100.0 | 3,840 | 100.0 | 100.0 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in *thousands*.
- Percentage distributions may not sum to 100.0 due to rounding.
- Cell estimated population counts will not sum to the total estimated population due to rounding and missing information for some cases.

[a]Includes the categories "Asian or Pacific Islander," "American Indian or Alaskan Native," and "Other."

Source: Q402, Q714, Q715, CALCAGE.

males larger than that for Black males. It is expected that the current findings are more accurate due to the poststratification included in the calculation of the sample weighting adjustment.

### School Status, Gender, and Age

Table 2-4 provides population counts and percentage estimates of the 1990 YATS II population by school status, gender, and age. In general, high school graduates represented the largest percentage of the YATS II population (27.1 percent of the males and 30.1 percent of the females). As expected, 16-18 year-olds were predominantly non-senior high school students, defined as those below the twelfth grade (50.5 percent of the males and 46.8 percent of the females) or high school seniors (30.1 percent of the males and 29.4 percent of the females). Postsecondary students, defined as those with some college education, but less than 3 years, comprised the next largest group with 10.4 percent of the

Table 2-4. Fall 1990 CEDS/YATS III - School Status by Gender and Age Range

| Gender/School Status[a] | Age Range 16-18 Count | 16-18 Percent | 19-21 Count | 19-21 Percent | 22-24 Count | 22-24 Percent | Total Percent |
|---|---|---|---|---|---|---|---|
| Males | | | | | | | |
| Postsecondary student | 529 | 10.4 | 1,570 | 39.2 | 505 | 17.2 | 21.6 |
| High school graduate | 132 | 2.6 | 1,437 | 36.0 | 1,686 | 57.6 | 27.1 |
| High school senior | 1,535 | 30.1 | 192 | 4.8 | 26 | 0.9 | 14.6 |
| Non-senior high school student | 2,576 | 50.5 | 63 | 1.6 | 12 | 0.4 | 22.0 |
| Non-completer | 328 | 6.4 | 746 | 18.6 | 700 | 23.9 | 14.7 |
| TOTAL | 5,100 | 100.0 | 4,008 | 100.0 | 2,928 | 100.0 | 100.0 |
| Females | | | | | | | |
| Postsecondary student | 740 | 14.9 | 1,637 | 39.6 | 534 | 17.3 | 23.8 |
| High school graduate | 189 | 3.8 | 1,671 | 40.4 | 1,811 | 58.5 | 30.1 |
| High school senior | 1,458 | 29.4 | 137 | 3.3 | 31 | 1.0 | 13.3 |
| Non-senior high school student | 2,320 | 46.8 | 30 | 0.7 | 24 | 0.8 | 19.5 |
| Non-completer | 252 | 5.1 | 663 | 16.0 | 696 | 22.5 | 13.2 |
| TOTAL | 4,960 | 100.0 | 4,139 | 100.0 | 3,096 | 100.0 | 100.0 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in thousands.
- Percentage distributions may not sum to 100.0 due to rounding.
- Cell estimated population counts will not sum to the total estimated population due to rounding and missing information for some cases.

[a]Postsecondary students are high school graduates currently attending college or a business/vocational school. High school graduates are respondents who are not students but have graduated from high school. Non-completers are respondents who are not high school students and have not graduated from high school.

Source: Q402, Q404A, Q407, Q408C, CALCAGE.

males and 14.9 percent of the females in the 16-18 year-old age range.

The proportion of the population that had completed high school increased with age. Among 19-21 year-olds, 36.0 percent of the males and 40.4 percent of the females had high school diplomas. Approximately 39 percent of both genders in this age grouping had gone on for postsecondary training, either in college or business/vocational school.

In the 22-24 year-old age group, 57.6 percent of the males and 58.5 percent of the females were high school graduates, and 17 percent of both genders had gone on for postsecondary training. However, this age group also had the highest percentage of non-

completers, i.e., those who were not enrolled in high school at the time of the interview and had not graduated from high school (23.9 percent of the males and 22.5 percent of the females).

### School Status and Employment Status by Gender and Age

The school and employment status of the YATS male population is given in Table 2-5. In general, the majority of males who wanted to work were doing so, either full-time or part-time (62.8 percent). This was not true, however, for specific categories such as non-senior high school students in the 19-21 year-old age group and 16-18 year-olds who were non-senior high school students or non-completers.

Overall, 44.9 percent of the 16-18 year-olds were employed. Not surprisingly, the older the respondent group, the more likely they were to have jobs. Seventy-one percent of the 19-21 year-olds and 82.7 percent of the 22-24 year-olds were employed in full-time or part-time jobs.

High school graduates had the highest employment rate across all three age groups: 71.8 percent of the 16-18 year-olds; 83.8 percent of the 19-21 year-olds; and 87.9 percent of the 22-24 year-olds. Non-completers in the two older age groups also had relatively high employment rates (73.5 percent for 19-21 year-olds and 72.6 percent of the 22-24 year-olds).

Data describing the school and employment status of the YATS II female population is provided in Table 2-6. As true for the male population, the majority of females who wanted to work were employed (56.6 percent). However, differences in employment status between males and females were quite pronounced, especially in the older age ranges.

For example, the percentage of 16-18 year-old males and females who were employed was nearly equal (approximately 45 percent for each age group). However, for 19-21 year-olds, the differences in these percentages increased by 7.5 percentage points (63.6 percent for females and 71.1 percent for males). Among 22-24 year-olds, the difference increased by 17 percentage points (65.7 for females and 82.7 for males). A large difference was particularly apparent among 22-24 year-old non-completers. While 59 percent of the female non-completers and 72.6 percent of the male non-completers were employed, the pattern reversed for those 22-24 year-olds non-completers who were unemployed and not looking for a job (31.2 percent for the females and 6.4 percent for the males).

### Region, Gender, and Age

Table 2-7 provides estimated population counts and percentage estimates of the 1990 YATS II population by region of the country, gender, and age. The largest populations for all three age groups and both

Table 2-5. Fall 1990 CEDS/YATS III - School Status and Employment Status of Males

| Age/School Status[a] | Employment Status: Employed Count | Employed Percent | Not Employed, Looking Count | Not Employed, Looking Percent | Not Employed, Not Looking Count | Not Employed, Not Looking Percent |
|---|---|---|---|---|---|---|
| 16-18 Year Olds | | | | | | |
| Postsecondary student | 259 | 49.2 | 86 | 16.4 | 181 | 34.3 |
| High school graduate | 95 | 71.8 | 31 | 23.9 | 6 | 4.3 |
| High school senior | 829 | 54.1 | 347 | 22.7 | 355 | 23.2 |
| Non-senior high school student | 917 | 35.6 | 986 | 38.3 | 672 | 26.1 |
| Non-completer | 184 | 8.1 | 120 | 36.7 | 23 | 7.1 |
| TOTAL 16-18 YEAR OLDS | 2,284 | 44.9 | 1,571 | 30.9 | 1,237 | 24.3 |
| 19-21 Year Olds | | | | | | |
| Postsecondary student | 941 | 60.1 | 231 | 14.8 | 394 | 80.9 |
| High school graduate | 1,203 | 83.8 | 174 | 12.1 | 59 | 4.1 |
| High school senior | 132 | 68.3 | 60 | 31.2 | N/A | |
| Non-senior high school student | 22 | 35.1 | 33 | 51.8 | 8 | 13.1 |
| Non-completer | 549 | 73.5 | 173 | 23.2 | 25 | 3.3 |
| TOTAL 19-21 YEAR OLDS | 2,847 | 71.1 | 671 | 16.8 | 487 | 12.2 |
| 22-24 Year Olds | | | | | | |
| Postsecondary student | 412 | 81.7 | 55 | 10.9 | 37 | 7.3 |
| High school graduate | 1,483 | 87.9 | 163 | 9.7 | 40 | 2.4 |
| High school senior | 10 | 39.8 | 8 | 30.5 | 8 | 29.8 |
| Non-senior high school student | 7 | 58.3 | 5 | 41.8 | N/A | |
| Non-completer | 506 | 72.6 | 145 | 20.9 | 45 | 6.4 |
| TOTAL 22-24 YEAR OLDS | 2,418 | 82.7 | 377 | 12.9 | 130 | 4.4 |
| TOTAL MALES | 7,548 | 62.8 | 2,619 | 21.8 | 1,855 | 15.4 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in thousands.
- Cell estimated population counts will not sum to the total estimated population due to rounding and missing information for some cases.

N/A = Not Applicable.

[a]Postsecondary students are high school graduates currently attending college or a business/vocational school. High school graduates are respondents who are not students but have graduated from high school. Non-completers are respondents who are not high school students and have not graduated from high school.

Source: Q402, Q404A, Q407, Q408C, Q416, Q417, CALCAGE.

Table 2-6. Fall 1990 CEDS/YATS III - School Status and Employment Status of Females

| Age/School Status[a] | Employment Status: Employed Count | Employed Percent | Not Employed, Looking Count | Not Employed, Looking Percent | Not Employed, Not Looking Count | Not Employed, Not Looking Percent |
|---|---|---|---|---|---|---|
| 16-18 Year Olds | | | | | | |
| Postsecondary student | 424 | 57.2 | 119 | 16.1 | 198 | 26.7 |
| High school graduate | 135 | 71.6 | 39 | 20.8 | 14 | 7.6 |
| High school senior | 725 | 49.7 | 317 | 21.7 | 416 | 28.6 |
| Non-senior high school student | 847 | 36.5 | 704 | 30.3 | 770 | 33.2 |
| Non-completer | 103 | 40.8 | 106 | 42.3 | 43 | 17.0 |
| TOTAL 16-18 YEAR OLDS | 2,234 | 45.0 | 1,285 | 25.9 | 1,441 | 29.1 |
| 19-21 Year Olds | | | | | | |
| Postsecondary student | 1,042 | 63.9 | 175 | 10.7 | 414 | 25.4 |
| High school graduate | 1,203 | 72.0 | 214 | 12.8 | 254 | 15.2 |
| High school senior | 62 | 45.4 | 32 | 23.4 | 43 | 31.2 |
| Non-senior high school student | N/A | | N/A | | 30 | 100.0 |
| Non-completer | 323 | 48.7 | 172 | 26.0 | 168 | 25.3 |
| TOTAL 19-21 YEAR OLDS | 2,630 | 63.6 | 594 | 14.4 | 909 | 22.0 |
| 22-24 Year Olds | | | | | | |
| Postsecondary student | 348 | 65.2 | 36 | 6.8 | 149 | 28.0 |
| High school graduate | 1,264 | 69.8 | 245 | 13.6 | 302 | 16.7 |
| High school senior | N/A | | N/A | | 31 | 100.0 |
| Non-senior high school student | 10 | 42.0 | N/A | | 14 | 58.0 |
| Non-completer | 411 | 59.0 | 69 | 9.9 | 217 | 31.2 |
| TOTAL 22-24 YEAR OLDS | 2,033 | 65.7 | 350 | 11.3 | 713 | 23.0 |
| TOTAL FEMALES | 6,897 | 56.6 | 2,229 | 18.3 | 3,062 | 25.1 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in thousands.
- Cell estimated population counts will not sum to the total estimated population due to rounding and missing information for some cases.

N/A = Not Applicable.

[a]Postsecondary students are high school graduates currently attending college or a business/vocational school. High school graduates are respondents who are not students but have graduated from high school. Non-completers are respondents who are not high school students and have not graduated from high school.

Source: Q402, Q404A, Q407, Q408C, Q416, Q417, CALCAGE.

Table 2-7. Fall 1990 CEDS/YATS III - Region by Gender and Age Range

| Gender/Region | Age Range 16-18 Count | 16-18 Percent | 19-21 Count | 19-21 Percent | 22-24 Count | 22-24 Percent | Total Percent |
|---|---|---|---|---|---|---|---|
| Males | | | | | | | |
| Northeast | 970 | 19.0 | 790 | 18.6 | 790 | 23.2 | 20.0 |
| North Central | 1,353 | 26.5 | 1,140 | 26.9 | 777 | 22.8 | 25.6 |
| South | 1,885 | 36.9 | 1,587 | 37.4 | 1,232 | 36.1 | 36.9 |
| West | 898 | 17.6 | 723 | 17.1 | 612 | 17.9 | 17.5 |
| TOTAL | 5,107 | 100.0 | 4,240 | 100.0 | 3,412 | 100.0 | 100.0 |
| Females | | | | | | | |
| Northeast | 880 | 17.7 | 877 | 19.8 | 905 | 23.6 | 20.1 |
| North Central | 1,389 | 27.9 | 1,225 | 27.6 | 883 | 23.0 | 26.4 |
| South | 1,894 | 38.1 | 1,477 | 33.3 | 1,440 | 37.4 | 36.3 |
| West | 809 | 16.3 | 858 | 19.3 | 614 | 16.0 | 17.2 |
| TOTAL | 4,972 | 100.0 | 4,437 | 100.0 | 3,843 | 100.0 | 100.0 |

Notes: • CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
• Estimated population counts are in thousands.

Source: Q402, REGION, CALCAGE.

genders were located in the South. Over one-third (approximately 36 percent for males and females) of the YATS II population lived in this region.

For 16-18 and 19-21 year-olds, the next largest population area was the North Central region, where slightly more than one-fourth of the YATS II population lived. For 22-24 year-olds, there were slightly more males and females in the Northeast region than in the North Central region (23.2 percent in the Northeast region and 22.8 percent in the North Central region for males, and for females, 23.6 and 23.0 percent respectively).

Generally, the percentage of the population from the Northeast region and the West region were similar. However, the exception again held true for the 22-24 year-olds, where more males (5.3 percentage points) and more females (7.6 percentage points) reported living in the Northeast than in the West.

### Aptitude Status and Age

The estimated aptitude of the males in the 1990 YATS II population by age groups is given in Table 2-8. High aptitude is defined

Table 2-8. Fall 1990 CEDS/YATS III - Aptitude Status by Age for Males

| | Age Range | | | | | | |
|---|---|---|---|---|---|---|---|
| | 16-18 | | 19-21 | | 22-24 | | Total |
| Aptitude[a] | Count | Percent | Count | Percent | Count | Percent | Percent |
| High aptitude | 2,793 | 54.7 | 2,463 | 58.1 | 1,752 | 51.4 | 54.9 |
| Low aptitude | 2,314 | 45.3 | 1,776 | 41.9 | 1,659 | 48.6 | 45.1 |
| TOTAL | 5,107 | 100.0 | 4,240 | 100.0 | 3,412 | 100.0 | 100.0 |

Notes:
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Estimated population counts are in thousands.
- Aptitude scores were calculated for males only.

[a]High aptitude is defined as predicted scores in Categories I-IIIA (percentiles 50-99) of the Armed Forces Qualification Test (AFQT). Low aptitude is defined as predicted scores in Categories IIIB-V (percentiles 1-49) of the AFQT.

Source: Q402, CALCAGE, AFQTHIGP.

as a predicted score in Categories I-IIIA (percentiles 50-99) of the Armed Forces Qualification Test (AFQT), and low aptitude is defined as a predicted score below the 50th percentile. CEDS/YATS III predicted AFQT categories using an approach originally developed by Orvis and Gahart (1989) and subsequently revised by Stone (1991). Predicted AFQT categories were determined using a nonlinear equation to estimate the probability that an individual would score at or above the 50th percentile on the AFQT. Currently, the predictive model is only available for males. Consequently, aptitude for females is not reported.

The variables used to predict AFQT categories included such objective information as age, race/ethnicity, geographic region, father's education, number and type of high school math courses completed, approximate high school grades, current job and education status, and other information such as general intention to enlist, recruiter contact, perceived ease of finding full-time employment, and discussion with one's parents about enlisting. As shown, for each of the age groups, over half of the males were predicted to be in the high aptitude category.

### Summary of Population Characteristics

The YATS population has been described in terms of eight demographic characteristics. These included: age, gender, marital status, race/ethnicity, employment status, school status, geographic location, and aptitude. The age distribution of the 1990

YATS II population was shown to differ from the national distribution of youth in the 16-24 year-old age range. This was attributed to the fact that the YATS sampling frame excludes young people who are serving in the military and those who have had prior military experience, as well as those with three or more years of college education. As a consequence, the YATS population declines in size for the older cohort.

Marital status, school status, and employment status were found to be related to respondent age. In addition, marital and employment status were also found to be gender sensitive. Youth in the older age categories were more likely to be married than younger youth and, when within-age group comparisons were made, females were found to be more likely to be married than males. Similar findings were noted for employment status. The proportion of the population that were employed increased with age for both males and females. Within age groups, however, males were more likely than females to be employed. This distinction was especially true for the 22-24 year-old age group.

As expected, school status was linked to age. The 16-18 year-olds were mainly high school students, whereas 19-21 year-olds were either high school graduates or postsecondary students. The majority of the 22-24 year-olds had received high school diplomas.

Race/ethnicity distributions did not vary substantially across gender or age groupings. Whites accounted for approximately 75 percent of the population, whereas Blacks and Hispanics comprised approximately 14 and 7 percent, respectively. This last finding is at odds with the distribution presented in the 1989 YATS II propensity report in which the Hispanic male population was estimated to be larger than the Black population. The estimates in this report are considered to be more accurate.

An evaluation of predicted aptitude for males illustrated that over half of each age group were in the high aptitude category.

# 3. ENLISTMENT PROPENSITY FOR THE ACTIVE MILITARY SERVICES

Composite and Service-specific enlistment propensity levels have been measured annually by the YATS survey for the past fourteen years. For the Department of Defense (DoD) and the individual Military Services, these propensity measures have been used as key indicators of the state of their recruiting markets. This chapter presents the basic findings from the analysis of the 1990 YATS II sample on the likelihood of enlistment in each of the active Military Services. The composite and Service-specific propensity results for 1990 YATS respondents are discussed along with sociodemographic correlates of propensity.

## Propensity Measures

Propensity for active military service was assessed by five questions in which respondents were asked about their likelihood (i.e., definitely, probably, probably not, or definitely not) of serving in the active Army, Navy, Air Force, Marine Corps, or Coast Guard. These questions were asked for each Service using the format: "How likely is it that you will be serving on active duty in the [Service]?" Enlistment propensity for each Service is defined as "positive" if the youth responded "definitely" or "probably" to the questions. "Negative" propensity is represented by the responses, "probably not" or "definitely not," or if the youth responded "don't know" or refused to answer the question. Positive **composite** active propensity is measured as the most positive response to the four DoD Service questions. (The Coast Guard is not included in the positive composite active propensity measure.)

Another measure used to assess level of interest in joining one of the active Military Services is termed "unaided mention." This term refers to a response that was volunteered without a specific prompt from the interviewer. Prior to any mention of enlistment by the interviewer, the following unaided question was asked: "Now let's talk about your plans (after you get out of high school/for the next few years). What do you think you might be doing?" "Positive" unaided propensity was recorded when the respondent indicated his or her intention to join the military, in general, or one of the specific Services. After stating such an intention, the respondent was asked for a first and second choice of Service that he or she planned to join (if not already indicated), and whether the type of Service would be active, Reserve, or National Guard.

## Composite Active and Service-Specific Propensity

Table 3-1 presents positive composite and Service-specific active

Table 3-1. Fall 1990 CEDS/YATS III - Positive Composite Active, Service-Specific Propensity, and Unaided Mention by Gender (and Age for Males)

| | Males | | | | Females |
|---|---|---|---|---|---|
| | 16-18[a] Year-Olds | 19-21[b] Year-Olds | 22-24[c] Year-Olds | Total[d] | Total[e] |
| Composite | 37.5 (0.9) | 25.1 (1.3) | 21.7 (1.2) | 29.1 (0.6) | 11.4 (0.6) |
| Unaided Mention | 12.4 (0.7) | 4.4 (0.6) | 2.1 (--) | 7.0 (0.4) | 2.4 (0.3) |
| Army | 17.1 (0.8) | 14.1 (1.0) | 11.6 (1.0) | 14.6 (0.5) | 5.5 (0.6) |
| Navy | 13.8 (0.8) | 8.5 (0.8) | 7.5 (0.8) | 10.4 (0.4) | 4.0 (0.5) |
| Air Force | 18.3 (0.9) | 10.8 (1.0) | 8.8 (0.9) | 13.3 (0.5) | 6.2 (0.5) |
| Marine Corps | 12.7 (0.6) | 8.9 (0.9) | 9.1 (1.0) | 10.4 (0.4) | 2.6 (0.3) |
| Coast Guard | 10.3 (0.6) | 5.7 (0.6) | 7.7 (1.0) | 8.1 (0.4) | 2.4 (0.3) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based upon 2,466 interviews.
[b]Estimates are based upon 1,730 interviews.
[c]Estimates are based upon 1,033 interviews.
[d]Estimates are based upon 5,229 interviews.
[e]Estimates are based upon 2,745 interviews.

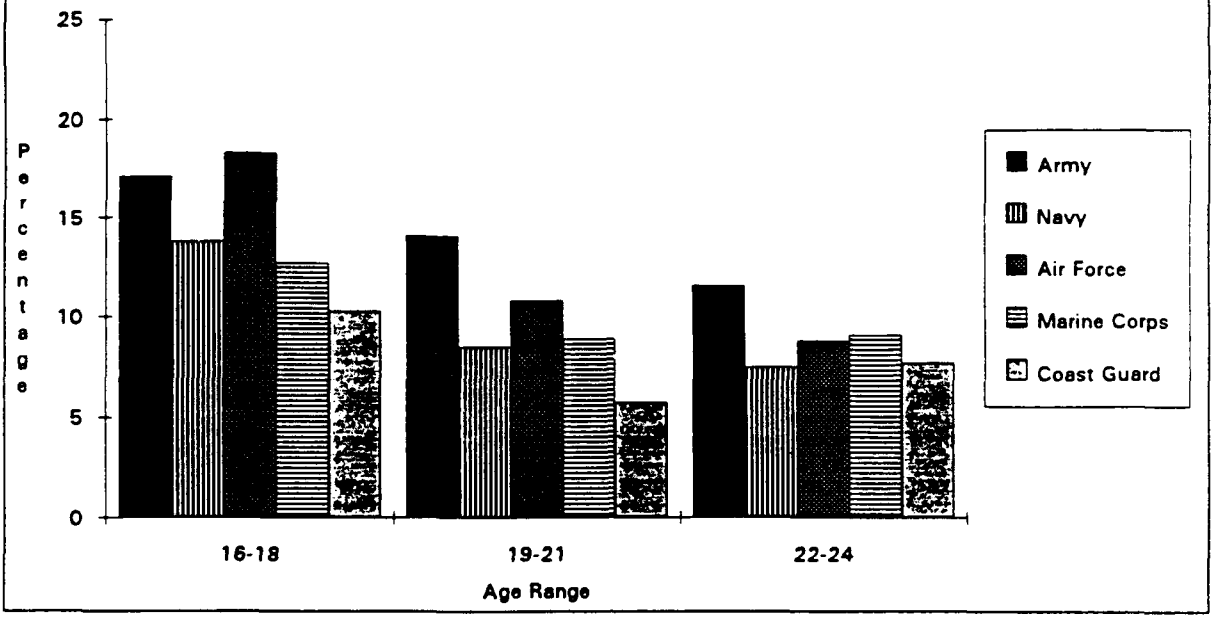
(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, CALCAGE, CPYATS82, Q438JOIN, Q509-Q513.

propensity as reported by males and females during the CEDS/YATS III Fall 1990 administration. Propensity measures are presented by three age groups commonly used in YATS analyses (16-18, 19-21, and 22-24 year-olds) for males. Age was collapsed for females as sample size did not support age-specific reporting. CEDS/YATS III 1990 findings are similar to those reported from previous YATS administrations. In all, 29.1 percent of the males and 11.4 percent of the females indicated positive composite active propensity. Seven percent of the males and 2.4 percent of the females gave an unaided mention of joining the active military. For males, the youngest group (16-18 year-olds) was the most likely (12.4 percent) to give such an unaided mention. Positive active Service-specific propensity among males, by age range, is presented in Figure 3-1.

Similar to 1989 YATS II survey results, positive composite active propensity is approximately twice the magnitude of the highest Service-specific measure of propensity.

Figure 3-1. Positive Active Service-Specific Propensity Among Males, by Age Range




Also, there is an inverse relationship between positive propensity and age, with propensity declining as the age of the respondent increases. For example, of the 16-18 year-old youth, 37.5 percent of males and 15.5 percent of females displayed positive composite active propensity. This measure drops for 19-21 year-olds, to 25.1 percent for males and 9.2 percent for females, then among the 22-24 year-olds, to 21.7 percent for males and 8.8 percent for females.

Additionally, for the two younger age groups of males and the composite of all age groups for females, the Army and Air Force elicited positive propensity responses from more youth than any of the other Services. While the Coast Guard was the lowest propensity Service for both males and females, the females also indicated a low level of propensity for the Marine Corps. For males, however, the Navy and Marine Corps elicited a higher, similar aggregate level of Service-specific propensity.

This relative ranking of Services by the proportion of youth exhibiting positive propensity did not hold for the oldest group of male respondents. For this group, the Services with the next greatest propensity were the Marine Corps (9.1 percent) and the Air Force (8.8 percent).

### Sociodemographic Correlates of Propensity

The sociodemographic characteristics of individuals with positive propensity (i.e., those who say they are most likely to join the military) is discussed in the following text.

The percentages of males in the three age groups (16-18, 19-21, and 22-24 year-olds), and females in all age groups combined, who expressed positive propensity are classified according to race/ethnicity, school status, region of residence, aptitude (for males only), and employment status.

**Propensity and Race/Ethnicity Patterns.** Table 3-2 provides the positive composite propensity percentages of males (by age group) and females by race/ethnicity. There was a strong relationship between race/ethnicity and propensity, with nonwhites more likely than Whites to express interest in joining the active military. This pattern occurred across all age groups for males, and for females in general. As shown in Figure 3-2, among 16-18 year-old males, Blacks (40.6 percent) and Hispanics (52.8 percent) were much more likely to have positive propensity than were Whites (35.5 percent). Similarly, for 19-21 year-old males, 43.5 percent of Blacks and 35.0 percent of Hispanics showed positive propensity compared to 20.6 percent of the Whites. A similar pattern held for 22-24 year-old males.

Because fewer than half as many women as men were interviewed (a

Table 3-2. Fall 1990 CEDS/YATS III - Positive Composite Active Propensity by Race/Ethnicity and Gender (and Age for Males)

| | Males | | | | Females |
|---|---|---|---|---|---|
| Race/Ethnicity | 16-18[a] Year-Olds | 19-21[b] Year-Olds | 22-24[c] Year-Olds | Total[d] | Total[e] |
| White | 35.5 (1.2) | 20.6 (1.4) | 19.7 (1.4) | 26.2 (0.7) | 8.5 (0.6) |
| Black | 40.6 (3.3) | 43.5 (4.1) | 30.3 (5.9) | 39.1 (2.0) | 21.6 (2.4) |
| Hispanic | 52.8 (4.2) | 35.0 (5.1) | 29.6 (5.7) | 40.3 (3.3) | 19.6 (3.4) |
| Other[f] | 46.1 (4.1) | 37.4 (7.7) | 21.2 (6.9) | 36.1 (3.9) | 16.5 (4.7) |
| Total | 37.5 (0.9) | 25.1 (1.3) | 21.7 (1.2) | 29.1 (0.6) | 11.4 (0.6) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based upon 2,466 interviews.
[b]Estimates are based upon 1,730 interviews.
[c]Estimates are based upon 1,033 interviews.
[d]Estimates are based upon 5,229 interviews.
[e]Estimates are based upon 2,745 interviews.
[f]"Other" includes the categories "Asian or Pacific Islander," "American Indian or Alaskan Native," and "Other."

Source: Q402, CALCAGE, APPOSNEG, Q714, 1715.

consequence of the sample design), it was not feasible to evaluate female propensity at the same level of detail as male propensity. Nonetheless, it is clear that minority women (21.6 percent of Blacks and 19.6 percent of Hispanics) expressed an enlistment propensity more frequently than White women (8.5 percent). Of the White women, the 16-18 year-olds (12.3 percent) were more likely than their older counterparts (5.9 percent for 19-21 year-olds and 6.7 percent for 22-24 year-olds) to indicate positive propensity for active service.

These trends are consistent with previous YATS data. It has been speculated that perhaps nonwhites see the military as offering better career opportunities and avenues for advancement, treatment, etc. than does society at large.

**Propensity and School Status Patterns.** Table 3-3 presents the percentage of positive composite active propensity of the YATS II sample by school status and gender, as well as age group for males. Youth who were the most likely to express positive propensity were non-senior high school students (47.2 percent of males and 19.5 percent of females) and youth who had not graduated from high school and were no longer in school (i.e., non-completers) (38.6 percent of males and 16.3 percent of females). Postsecondary males were the least likely to exhibit positive propensity to serve in the active military (15.0 percent). For females, the

Figure 3-2. Positive Composite Active Propensity Among Males, by Race/Ethnicity and Age Range

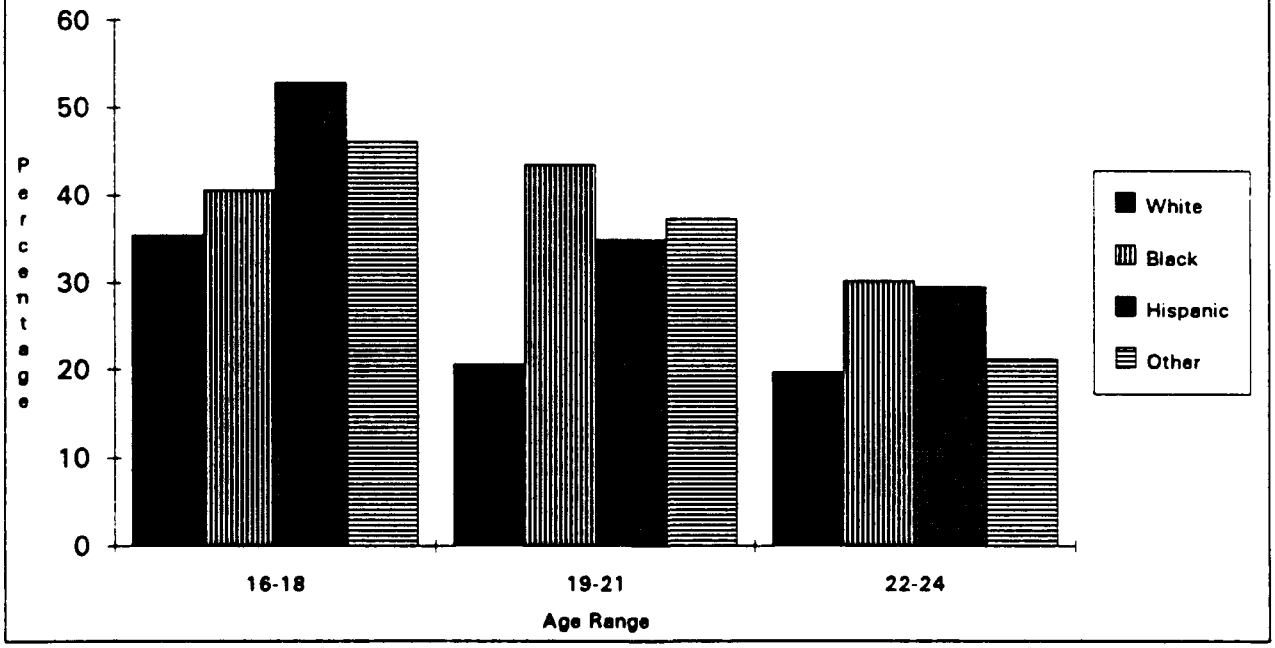


Table 3-3. Fall 1990 CEDS/YATS III - Positive Composite Active Propensity by School Status and Gender (and Age for Males)

| School Status[a] | Males: 16-18[b] Year-Olds | Males: 19-21[c] Year-Olds | Males: 22-24[d] Year-Olds | Males: Total[e] | Females: Total[f] |
|---|---|---|---|---|---|
| Postsecondary student | 12.6 (1.6) | 16.1 (1.5) | 14.1 (3.3) | 15.0 (1.1) | 7.5 (1.1) |
| High school graduate | 28.5 (4.0) | 25.6 (1.8) | 18.1 (1.9) | 21.9 (1.4) | 7.1 (1.2) |
| High school senior | 27.8 (1.8) | 45.7 (6.4) | 48.7 (--) | 30.1 (1.8) | 14.4 (2.0) |
| Non-senior high school student | 47.0 (1.6) | 54.9 (--) | 41.7 (--) | 47.2 (1.5) | 19.5 (2.2) |
| Non-completer | 51.2 (5.5) | 37.2 (3.5) | 34.1 (3.2) | 38.6 (2.5) | 16.3 (2.8) |
| Total | 37.5 (0.9) | 25.1 (1.3) | 21.7 (1.2) | 29.1 (0.6) | 11.4 (0.6) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Postsecondary students are high school graduates currently attending college or a business/vocational school. High school graduates are respondents who are not students but have graduated from high school. Non-completers are respondents who are not high school students and have not graduated from high school.
[b]Estimates are based upon 2,466 interviews.
[c]Estimates are based upon 1,730 interviews.
[d]Estimates are based upon 1,033 interviews.
[e]Estimates are based upon 5,229 interviews.
[f]Estimates are based upon 2,745 interviews.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, CALCAGE, APPOSNEG, Q404A, Q407, Q408C.

lowest positive propensity was shown by postsecondary students (7.5 percent) and high school graduates (7.1 percent).

**Propensity and Region Patterns.** Table 3-4 presents the positive composite active propensity among the YATS II sample by region, gender, and age for males. Consistent with historical patterns, males in the South expressed the highest levels of propensity (34.8 percent), with 42.1 percent of 16-18 year-olds, 33.2 percent of the 19-21 year-olds, and 25.7 percent of the 22-24 year-olds. The next highest region of males who expressed positive propensity was the West (28.4 percent), with 36.8 percent of 16-18 year-olds, 23.7 percent of 19-21 year-olds, and 21.6 percent of 22-24 year-olds.

For females, those from the West expressed the highest propensity (13.9 percent) for active military service, but this differed only slightly with those from the South (13.2 percent).

**Propensity and Male Aptitude Patterns.** As discussed previously, aptitude scores for males were calculated from survey variables used to construct predicted scores on

Table 3-4. Fall 1990 CEDS/YATS III - Positive Composite Active Propensity by Region and Gender (and Age for Males)

| Region | Males | | | | Females |
|---|---|---|---|---|---|
| | 16-18[a] Year-Olds | 19-21[b] Year-Olds | 22-24[c] Year-Olds | Total[d] | Total[e] |
| Northeast | 32.6 (2.3) | 20.2 (2.8) | 19.2 (2.9) | 24.6 (1.6) | 8.0 (1:4) |
| North Central | 35.0 (2.1) | 18.1 (1.8) | 17.8 (2.3) | 25.0 (1.4) | 10.0 (1.1) |
| South | 42.1 (1.8) | 33.2 (2.2) | 25.7 (3.1) | 34.8 (1.3) | 13.2 (1.2) |
| West | 36.8 (2.4) | 23.7 (2.9) | 21.6 (2.9) | 28.4 (1.7) | 13.9 (1.8) |
| Total | 37.5 (0.9) | 25.1 (1.3) | 21.7 (1.2) | 29.1 (0.6) | 11.4 (0.6) |

Notes: ▪ Tabled values are percentages with standard errors in parentheses.
▪ CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based upon 2,466 interviews.
[b]Estimates are based upon 1,730 interviews.
[c]Estimates are based upon 1,033 interviews.
[d]Estimates are based upon 5,229 interviews.
[e]Estimates are based upon 2,745 interviews.

Source: Q402, CALCAGE, REGION, APPOSNEG.

the Armed Forces Qualification Test (AFQT). High aptitude is defined as predicted scores in Categories I-IIIA (percentiles 50-99) on the AFQT and low aptitude as predicted scores in Categories IIIB-V (percentiles 1-49).

Table 3-5 presents the percentages of the YATS II male respondents with positive composite active propensity and high and low aptitudes. Positive propensity was clearly and consistently expressed by low aptitude males when compared with high aptitude males. Low aptitude males, 16-18 years of age, showed the highest propensity (46.7 percent), while high aptitude, 22-24 year-olds showed the lowest propensity (16.8 percent).

These data provide useful information about the expected aptitude of the YATS II population. There were substantial differences between propensity of those with high aptitude (22.4 percent) and those with low aptitude (37.3 percent). In general, males with low aptitude are more likely to express interest in joining active military service.

**Propensity and Employment Status Patterns.** Respondents' employment status also appears to be related to the expression of positive composite active propensity. Table 3-6 presents positive propensity by employment status and gender, and age group

Table 3-5. Fall 1990 CEDS/YATS III - Positive Composite Active Propensity by Aptitude and Age Range for Males

| Aptitude[a] | 16-18[b] Year-Olds | 19-21[c] Year-Olds | 22-24[d] Year-Olds | Total[e] |
|---|---|---|---|---|
| High aptitude | 29.8 (1.1) | 18.0 (1.3) | 16.8 (1.6) | 22.4 (0.8) |
| Low aptitude | 46.7 (1.4) | 34.9 (2.3) | 26.8 (2.1) | 37.3 (1.1) |
| Total | 37.5 (0.9) | 25.1 (1.3) | 21.7 (1.2) | 29.1 (0.6) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Aptitude scores were calculated for males only.

[a]High aptitude is defined as predicted scores in Categories I-IIIA (percentiles 50-99) of the Armed Forces Qualification Test (AFQT). Low aptitude is defined as predicted scores in Categories IIIB-V (percentiles 1-49) of the AFQT.
[b]Estimates are based upon 2,466 interviews.
[c]Estimates are based upon 1,730 interviews.
[d]Estimates are based upon 1,033 interviews.
[e]Estimates are based upon 5,229 interviews.

Source: AFQTHIGP, AFQTLOGP, Q402, CALCAGE, APPOSNEG.

Table 3-6. Fall 1990 CEDS/YATS III - Positive Composite Active Propensity by Employment Status and Gender (and Age for Males)

| | Males | | | | Females |
|---|---|---|---|---|---|
| Employment Status | 16-18[a] Year-Olds | 19-21[b] Year-Olds | 22-24[c] Year-Olds | Total[d] | Total[e] |
| Employed | 36.9 (1.3) | 24.0 (1.6) | 19.6 (1.5) | 26.1 (0.8) | 10.7 (0.8) |
| Not employed, looking | 45.4 (2.1) | 36.9 (3.2) | 34.6 (6.0) | 41.5 (1.8) | 18.8 (1.9) |
| Not employed, not looking | 28.8 (2.2) | 15.2 (2.7) | 23.6 (--) | 24.8 (1.9) | 7.8 (1.4) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based upon 2,466 interviews.
[b]Estimates are based upon 1,730 interviews.
[c]Estimates are based upon 1,033 interviews.
[d]Estimates are based upon 5,229 interviews.
[e]Estimates are based upon 2,745 interviews.

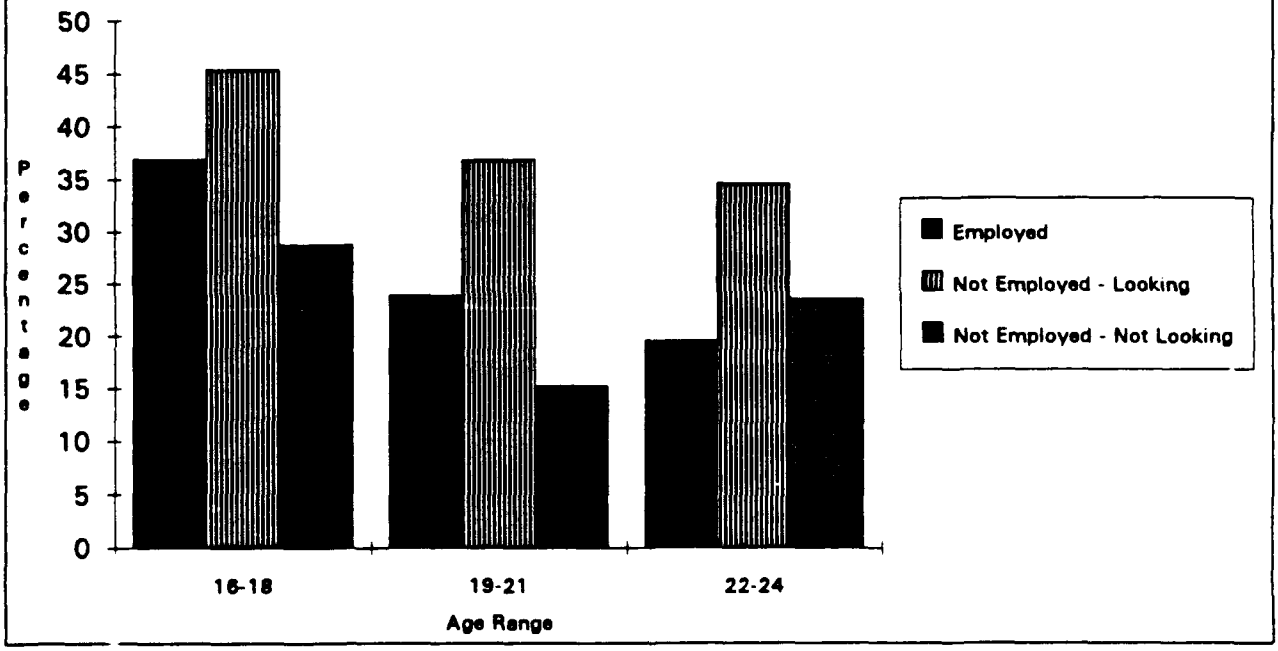
(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, Q403A, Q404A, Q407, Q408C, Q416, Q417, CALCAGE, APPOSNEG.

for males. Youth who were not employed but looking for work indicated the highest level of propensity for active military service (41.5 percent of males and 18.8 percent of females).

When examining differences among the age groupings of males (Figure 3-3), those 16-18 year-olds who were not employed but looking for work expressed the highest positive propensity (45.4 percent, as did their female counterparts with 23.6 percent). Among 19-21 year-olds, those not employed but looking showed 36.9 percent positive propensity, the same amount as employed 16-18 year-olds. Of the males in the 16-18 and 19-21 age groups, those who were not employed and not looking for work showed the least amount of positive propensity (28.8 percent and 15.2 percent, respectively). Of those male respondents who were employed, the 22-24 year-olds showed the lowest propensity (19.6 percent) and the 16-18 year-olds, the highest (36.9 percent).

**Figure 3-3. Positive Composite Active Propensity Among Males, by Employment Status and Age Range**



# 4. ENLISTMENT PROPENSITY FOR THE NATIONAL GUARD AND RESERVES

## Introduction and Overview

This chapter examines 1990 YATS respondents' likelihood of enlistment in the Reserve Components. As described earlier, all analyses were performed on the YATS II sample (i.e., youth between the ages of 16-24 in the contiguous 48 United States, who had never served in the military, and who had not attained more than two years of college education). Furthermore, Reserve propensity responses include only those individuals who were administered the YATS II version (i.e., 1989) of propensity questions (e.g., half sample).

## Propensity Measures

The composite and Service- and component-specific propensity measures presented in this chapter are the same as those discussed in Chapter 2 and are similar to those used for active propensity. The measurement of Reserve propensity is based on answers to two questions: "How likely is it that you will be serving in the National Guard?" and "How likely is it that you will be serving in the Reserves?" As in the case of active component propensity, positive National Guard and Reserve propensity is defined as a "definitely" or "probably" response to the corresponding question. All other responses are considered indicators of negative propensity. The most positive response is the measure of **composite** Reserve propensity.

## Composite Reserve and Service-Specific Propensity by Age Group

As observed in the active component measures, there was a general decline in the proportion of youth reporting positive Reserve Component propensity as age increased. For example, positive Reserve composite propensity for males declined from a high of 26.2 percent for 16-18 year-olds, to 18.4 percent for 19-21 year-olds, to a low of 17.4 percent for 22-24 year-olds. Although the number of females with positive propensity was small, the survey results also showed a decline with age: 10.4 percent for 16-18 year-olds, to 6.8 percent for 19-21 year-olds, and 4.8 percent for 22-24 year-olds. The decline in the proportion of positive propensity youth as age increased, however, was not nearly as pronounced as it was for composite active propensity.

Service-specific National Guard and Reserve propensity levels are reported in Table 4-1. Overall, 21.3 percent of the males and 7.6 percent of the females indicated positive Reserve propensity. In addition, males

Table 4-1. Fall 1990 CEDS/YATS III - Positive Composite Reserve Propensity, Reserve Component-Specific Propensity, and Unaided Mention by Gender

| | Males Total[a] | | Females Total[b] | |
|---|---|---|---|---|
| Composite | 21.3 | (0.9) | 7.6 | (0.8) |
| Unaided Mentions | 7.1 | (0.6) | 2.4 | (0.5) |
| National Guard | | | | |
| Army National Guard | 8.2 | (0.7) | 2.1 | (0.5) |
| Air National Guard | 4.0 | (0.5) | 2.6 | (0.5) |
| Reserves | | | | |
| Army Reserve | 5.4 | (0.5) | 2.1 | (0.5) |
| Naval Reserve | 2.6 | (0.5) | 0.7 | (--) |
| Air Force Reserve | 3.7 | (0.5) | 2.0 | (0.4) |
| Marine Corps Reserve | 3.2 | (0.4) | 0.6 | (--) |
| Coast Guard Reserve | 1.4 | (0.3) | 0.1 | (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Responses reported only for individuals administered the YATS II version of propensity questions (1/2 sample).

[a]Estimates are based upon 2,598 interviews.
[b]Estimates are based upon 1,361 interviews.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q505-Q508, RSVNG84, Q438JOIN.

had more unaided mentions for Reserve propensity (7.1 percent) than did females (2.4 percent).

Service-specific Reserve propensity is similar to the pattern observed for active propensity. The Army and the Air Force had the highest proportion of youth with positive propensity. The Navy and the Marine Corps had somewhat lower proportions. For both the Reserve and National Guard Service-specific measures, a greater proportion of males reported positive propensity for the Army than for the Air Force. Females indicated nearly the same amount of propensity to join the Army and Air Force, for both the National Guard and the Reserves.

### Sociodemographic Correlates of Propensity

This section discusses the sociodemographic characteristics of individuals with positive propensity (i.e., those most likely to join the Reserves). The percentages of males and females who expressed positive propensity are classified according to

race/ethnicity, school status, region of residence, aptitude, and employment status.

**Propensity and Race/Ethnicity Patterns.** Table 4-2 provides the positive composite Reserve propensity percentages of males and females in the current sample by race/ethnicity. Analogous with active propensity, Reserve propensity also showed a relationship to race/ethnicity: nonwhites were more likely than Whites to express positive propensity. Black males (36.1 percent) and Hispanic males (31.8 percent) were much more likely to have positive propensity than were White males (17.3 percent). Among females, Blacks (12.5 percent) and Hispanics (11.1 percent) also indicated being more likely to enlist than Whites (6.0 percent).

**Propensity and School Status Patterns.** Table 4-3 presents the percentage of positive composite Reserve propensity for the YATS 1990 sample partitioned by school status and gender. Similar again to the active propensity report, the youth most likely to enlist in the Reserves were those who were non-senior high school students and those who were not in high school and had not graduated, i.e., non-completers (33.4 and 30.1 percent for males, respectively).

**Propensity and Region Patterns.** Table 4-4 presents the positive composite Reserve propensity among the YATS II sample partitioned by region and gender. Males in the South expressed the highest levels of propensity overall (28.0 percent). Unlike the active propensity reports, the next highest region reporting positive Reserve propensity was the Northeast (20.5 percent). The pattern was different for females; those in the West

Table 4-2. Fall 1990 CEDS/YATS III - Positive Composite Reserve Propensity by Race/Ethnicity and Gender

| Race/Ethnicity | Males Total[a] | | Females Total[b] | |
|---|---|---|---|---|
| White | 17.3 | (0.9) | 6.0 | (0.9) |
| Black | 36.1 | (3.6) | 12.5 | (2.9) |
| Hispanic | 31.8 | (4.3) | 11.1 | (--) |
| Other | 32.7 | (6.9) | 18.3 | (--) |

Notes: ▪ Tabled values are percentages with standard errors in parentheses.
▪ Responses reported only for individuals administered the YATS II version of propensity questions (1/2 sample).

[a]Estimates are based upon 2,598 interviews.
[b]Estimates are based upon 1,361 interviews.
[c]"Other" includes the categories "Asian or Pacific Islander," "American Indian or Alaskan Native," and "Other."

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, CALCAGE, RPPOSNEG, Q714, Q715.

Table 4-3. Fall 1990 CEDS/YATS III - Positive Composite Reserve Propensity by School Status and Gender

| School Status[a] | Males Total[b] | | Females Total[c] | |
|---|---|---|---|---|
| Postsecondary student | 11.7 | (1.5) | 5.5 | (1.3) |
| High school graduate | 17.4 | (1.9) | 4.2 | (--) |
| High school senior | 19.3 | (2.3) | 7.3 | (--) |
| Non-senior high school student | 33.4 | (1.9) | 14.2 | (2.5) |
| Non-completer | 30.1 | (3.6) | 10.5 | (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- Responses reported only for individuals administered the YATS II version of propensity questions (1/2 sample).

[a]Postsecondary students are high school graduates currently attending college or a business/vocational school. High school graduates are respondents who are not students but have graduated from high school. Non-completers are respondents who are not high school students and have not graduated from high school.

[b]Estimates are based upon 2,598 interviews.

[c]Estimates are based upon 1,361 interviews.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, CALCAGE, RPPOSNEG, Q404A, Q407, Q408C.

Table 4-4. Fall 1990 CEDS/YATS III - Positive Composite Reserve Propensity by Region and Gender

| Region | Males Total[a] | | Females Total[b] | |
|---|---|---|---|---|
| Northeast | 20.5 | (2.1) | 4.0 | (--) |
| North Central | 16.2 | (1.6) | 9.0 | (1.9) |
| South | 28.0 | (2.0) | 7.9 | (1.3) |
| West | 15.7 | (2.0) | 9.1 | (2.1) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- Responses reported only for individuals administered the YATS II version of propensity questions (1/2 sample).

[a]Estimates are based upon 2,598 interviews.

[b]Estimates are based upon 1,361 interviews.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, CALCAGE, REGION, RPPOSNEG.

(9.1 percent) and North Central (9.0 percent) regions indicated the most Reserve propensity.

**Propensity and Male Aptitude Patterns.** As discussed previously, aptitude scores for males were calculated from survey variables used to predict respondents' scores on the Armed Forces Qualification Test (AFQT). High aptitude is defined as predicted scores in Categories I-IIIA (percentiles 50-99) on the AFQT and low aptitude as predicted scores in Categories IIIB-V (percentiles 1-49).

Table 4-5 presents the percentages of the YATS II male respondents with positive composite Reserve propensity for the predicted high and low aptitude groups. Consistent with comparisons made on active propensity, Reserve propensity was expressed more by low aptitude males (29.9 percent) than by high aptitude males (14.2 percent). Low aptitude males, 16-18 years of age, showed the highest propensity (34.6 percent), while high aptitude 22-24 year-olds showed the lowest propensity (12.5 percent). These data show sizeable differences in positive Reserve propensity. Those males with the highest interest in joining the Guard and Reserves, on average, were those with the lowest predicted aptitude.

**Propensity and Employment Status Patterns.** Respondents' employment status also appears to be related to positive composite Reserve propensity. Table 4-6 presents positive propensity by employment status and gender, as well as by age group for males.

Table 4-5. Fall 1990 CEDS/YATS III - Positive Composite Reserve Propensity by Aptitude and Age Range for Males

| Aptitude[a] | 16-18[b] Year-Olds | | 19-21[c] Year-Olds | | 22-24[d] Year-Olds | | Total[e] | |
|---|---|---|---|---|---|---|---|---|
| High aptitude | 19.2 | (1.5) | 9.9 | (1.3) | 12.5 | (2.4) | 14.2 | (1.0) |
| Low aptitude | 34.6 | (2.6) | 31.2 | (3.0) | 22.2 | (3.4) | 29.9 | (1.9) |
| Total | 26.2 | (1.6) | 18.4 | (1.4) | 17.4 | (2.1) | 21.3 | (0.9) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Responses reported only for individuals administered the YATS II version of propensity questions (1/2 sample).
- Aptitude scores were calculated for males only.

[a]High aptitude is defined as predicted scores in Categories I-IIIA (percentiles 50-99) of the Armed Forces Qualification Test (AFQT). Low aptitude is defined as predicted scores in Categories IIIB-V (percentiles 1-49) of the AFQT.
[b]Estimates are based upon 1,224 interviews.
[c]Estimates are based upon 864 interviews.
[d]Estimates are based upon 510 interviews.
[e]Estimates are based upon 2,598 interviews.

Source: AFQTHIGP, Q402, CALCAGE, RPPOSNEG.

Overall, the males and females who were not employed but looking for work indicated the most interest in joining the Reserves (31.8 percent for males, 13.5 percent for females). More specifically, among the males, it was the 16-18 year-olds who were not employed but looking for work who expressed the highest amount of positive propensity (34.1 percent). Among 19-21 year-olds, those not employed but looking for work showed 27.8 percent positive propensity, whereas 17.5 percent of their employed counterparts showed positive propensity.

Table 4-6. Fall 1990 CEDS/YATS III - Positive Composite Reserve Propensity by Employment Status and Gender (and Age for Males)

| | Males | | | | Females |
|---|---|---|---|---|---|
| Employment Status | 16-18[a] Year-Olds | 19-21[b] Year-Olds | 22-24[c] Year-Olds | Total[d] | Total[e] |
| Employed | 25.5 (2.4) | 17.5 (1.8) | 16.5 (2.7) | 19.4 (1.2) | 6.8 (0.9) |
| Not employed, looking | 34.1 (3.1) | 27.8 (4.8) | 29.2 (--) | 31.8 (2.4) | 13.5 (2.5) |
| Not employed, not looking | 17.7 (2.8) | 10.7 (--) | n/a | 14.7 (2.1) | 4.9 (0.8) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- Responses reported only for individuals administered the YATS II version of propensity questions (1/2 sample).

[a]Estimates are based upon 1,224 interviews.
[b]Estimates are based upon 864 interviews.
[c]Estimates are based upon 510 interviews.
[d]Estimates are based upon 2,598 interviews.
[e]Estimates are based upon 1,361 interviews.

N/A = Not Applicable

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, Q416, Q417, CALCAGE, RPPOSNEG.

# 5. COMPONENTS OF ENLISTMENT PROPENSITY: SERVICE BRAND LOYALTY AND MARKET OVERLAPS

## Introduction and Overview

Composite and Service-specific enlistment propensity levels have been measured annually by the YATS survey for the past fourteen years. For the Department of Defense (DoD) and the individual Military Services, these propensity measures have been used as key indicators of recruiting markets. The relationships between the various individual and external factors on propensity have been explored over the past several years. For example, enlistment propensity has been found to be statistically related to age and race. Evidence associating some Service-specific propensity measures and external fluctuations in the economy, such as unemployment, have also been reported (Bray, et al., 1990; Hosek, Peterson, and Eden, 1986; Orvis and Gahart, 1989).

To date, analyses on enlistment propensity have focused primarily on external factors and have largely ignored the structure of relationships among the various propensity indicators themselves. For example, there is only a limited understanding of the extent to which expressed propensity for a specific Military Service is exclusive of interest in any of the other Services. There also is some confusion as to how, if at all, propensities for each of the Services are linked. Yet qualitative information from individuals both within the military and external to the military suggests that, while some individuals may be strongly interested in only one Military Service, the majority of youth considering enlistment are open to multiple options within the military. In marketing terms, the former group would be considered potential "brand loyalists" -- a prime market group. Among the members of the multiple options group, we have distinguished further between those who indicated interest in two Services -- labelled here as the "dual loyalists," and those who indicated interest in three or more Services simultaneously -- labelled here as the "all military" propensity group.

The analyses presented in this chapter extend and elaborate on inquiries started in recent YATS reports (Bray, et al., 1990). In this chapter, the structure of relationships among the various propensity measures, using the concepts of "brand loyalty" and "market overlap" as applied to propensity for the active Military Services and Reserve Components is examined. Among the questions addressed are: (1) Are there youth interested in enlisting in only one Service? and (2) Is there a significantly large group of youth that would enlist in any Service? With military downsizing and anticipated constraints in both expected recruiting and advertising, this

analysis of propensity measurement is important for better understanding of the military manpower labor pool.

This chapter begins with a definition of the measures and sample used for the analyses and a general discussion of the analytic approach taken. Next, findings from the analyses of brand loyalty and market overlap are reviewed. The chapter ends with a summary of the main conclusions reached on the basis of these analyses.

### Propensity Measures

The composite and Service-specific propensity measures presented in this chapter are similar to those discussed in Chapters 3 and 4. The respondents were asked the likelihood (i.e., definitely, probably, probably not, or definitely not) of serving in the active Army, Navy, Air Force, or Marine Corps. Enlistment propensity is "positive" if the youth responded "definitely" or "probably" to the questions. "Negative" propensity is represented by the responses "probably not" or "definitely not," or if the youth responded "don't know" or refused to answer the question. Composite active propensity is defined as the most positive response to the questions regarding each Service.

The measurement of Reserve propensity is based on answers to similar questions regarding enlistment in the National Guard and Reserve. As in the case of active component propensity, positive National Guard and Reserve propensity is defined as a "definitely" or "probably" response to the corresponding question. All other responses are considered indicators of negative propensity. Composite Reserve propensity is defined as the most positive response to these two questions.

### Analytic Sample and Data

All analyses in this document were performed on the YATS II sample (i.e., youth between the ages of 16-24 in the contiguous United States, who had never served in the military, and who had not attained more than two years of college education). The analyses in this chapter further restrict the sample to include only males, a decision based on both substantive and statistical considerations. First, since males constitute the majority of the recruiting market, it seems appropriate to focus this exploratory analysis on them. Second, the smaller female sample (approximately one-half the size of the male sample) yielded estimates of many subpopulations (e.g., females with positive propensity to join the Navy but no other Service) based upon too few respondents to be considered reliable.

The tables in this chapter focus on brand loyalty and multiple Service loyalties, and divide YATS males into two age groups (16-18 and 19-24 year-olds) rather than the three age groups (16-18, 19-21, and 22-24 year-olds) reported in earlier chapters. These age groupings were used because the responses

of 19-21 year-olds and 22-24 year-olds were in substantial agreement and when considered separately, in many instances these older age groups had too few respondents to consider the estimates reliable.

### Analytic Approach

The relationship among the various propensity measures was examined by calculating the proportion of Service-specific positive propensity youth who expressed positive propensity for only one active Service, the brand loyal youth, as well as the proportion of youth who expressed propensity for more than one active Service. Among the multiple options group, the "multiple propensity youth," the proportion of youth who expressed an interest in various combinations of Services was examined. For example, calculation of propensity was done for the proportion of youth who expressed an interest in (a) both the Army and the Air Force; (b) both the Army and the Marines; (c) both the Air Force and the Navy; (d) the Army, Air Force, and Navy; (e) the Army, Navy, and Marines; and so forth. The patterns of propensity combinations were of particular interest, inasmuch as they revealed the extent of exclusive interest in each Service and potential overlapping markets for the various Services.

Furthermore, the overlap in interest in the active and Reserve Components for each Service was examined. In these analyses, the extent to which propensity for any one Service was dominated by either the active or Reserve Components of that Service was investigated.

### Brand Loyalists: Youth Having Positive Propensity for Only One Active Military Service

Composite and Service-specific propensity measures provide general indications of the inclination of youth to enlist in the Armed Forces, or in a particular Service of the Armed Forces. These measures do not, however, distinguish between characteristics of the population of youth having interest in only one Service and those having interest in multiple Services. Therefore, this chapter analyzes Service-specific propensity by its component parts in order to identify those youth considering enlistment in only one Service, "brand loyalists," and those youth expressing a likelihood to enlist in two or more Services.

Since the various Military Services are, in some senses, competing with each other, "brand loyalists" must be considered a prime market group for these particular Services. Table 5-1 presents the number and percentage of male youth in the two age groups who expressed positive propensity for only one Military Service. An estimated 15 percent or 1.9 million young males had positive propensity for one and only one of the Military Services. Brand loyalty was stronger among the younger males (19 percent of the 16-18

Table 5-1. Fall 1990 CEDS/YATS III - Males with Positive Propensity for Only One Active Service

| | 16-18[a] | | 19-24[b] | | Total Male[c] | |
|---|---|---|---|---|---|---|
| | Count | Percent of Population | Count | Percent of Population | Count | Percent of Population |
| Army | 251 | 4.9 | 324 | 4.2 | 574 | 4.5 |
| Navy | 199 | 3.9 | 151 | 2.0 | 351 | 2.7 |
| Air Force | 369 | 7.2 | 295 | 3.8 | 664 | 5.2 |
| Marine Corps | 144 | 2.8 | 141 | 1.8 | 284 | 2.2 |
| TOTAL | 963 | 18.8 | 911 | 11.9 | 1,873 | 14.7 |

Notes:
- Population counts are in thousands. Counts may not sum to column or row totals due to rounding.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 5,107,000 16-18 year olds.
[b]Estimates are based on 7,652,000 19-24 year olds.
[c]Estimates are based on 12,759,000 total.

Source: Questions 509-513

year-olds) than among older males (12 percent of the 19-24 year-olds).

In both age groups, the Air Force and the Army had the largest share of brand loyalists. Among the younger cohort, 7.2 and 4.9 percent expressed positive propensity for the Air Force and the Army only, respectively. Among the older cohort, Air Force brand loyalists represented 3.8 percent of the population and Army brand loyalists represented 4.2 percent of the population. For the Navy and Marine Corps, the brand loyalists represented 3.9 and 2.8 percent, respectively, of 16-18 year-old youth, and 2 percent or less of the 19-24 year-olds.

As previously noted for most propensity measures, the percentage of brand loyalists declined as age increased. This decline, however, was not even across the Services. The Army lost few brand loyalists in the transition from the younger to the older age group. None of the other Services maintained loyalty across age groups nearly as well.

### Multiple Loyalists

Many of the youth who were interested in joining the active military appear to have been interested in more than one Service. Table 5-2 presents the number and percentages of dual loyalists, youth interested

Table 5-2. Fall 1990 CEDS/YATS III - Overlap in Positive Active Component Propensity for Males, by Age Group

| | 16-18[a] | | 19-24[b] | | Total Male[c] | |
|---|---|---|---|---|---|---|
| | Count | Percent of Population | Count | Percent of Population | Count | Percent of Population |
| Two Services | 721 | 14.1 | 627 | 8.2 | 1,348 | 10.6 |
| Three or more Services | 232 | 4.5 | 265 | 3.5 | 496 | 3.9 |

Notes:
- Population counts are in thousands. Age counts may not sum to row totals due to rounding.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 5,107,000 16-18 year olds.
[b]Estimates are based on 7,652,000 19-24 year olds.
[c]Estimates are based on 12,759,000 total.

*Source: Questions 510-513*

in two Services, and the "all military" segment who were interested in three or more Services. Because the "all military" group expressed interest in at least three of the four Services, it could be argued that their interest was in joining the military in general, without much regard for the particular Service.

For male youth, approximately the same number indicated brand loyalty (14.7 percent) as those who indicated multiple Service loyalty (14.5 percent). However, when separating multiple loyalists into dual loyalists and the "all military" group, far more young males fell in the dual loyalist groups than the "all military" group.

While there were fewer dual loyalists (10.6 percent) than brand loyalists (14.7 percent), these young males were far less likely to indicate interest in three or more Services (3.9 percent). By age, the dual loyalists represented 14 percent of the 16-18 year-olds and 8 percent of the 19-24 year-olds. Only 4.5 percent of the positive propensity 16-18 year-olds and 3.5 of the 19-24 year-olds indicated interest in joining three or more of the active Services.

### Patterns in Propensity Overlap Among the Active Military Services

Table 5-3 shows the distribution of enlistment propensity across the active Military Services for young males. Only individuals who expressed interest in enlisting in the active Military Services are included in the table; thus, the percentages are based on the positive propensity males only. Interpretation of this table should focus on the rows which show

Table 5-3. Fall 1990 CEDS/YATS III - Overlap in Service-Specific Active Component Propensity Among Males by Age Group

| | | Army | Navy | Air Force | Marine Corps | Overlap in More Than Two Services | Total Males |
|---|---|---|---|---|---|---|---|
| **16-18 Year Olds' Positive Propensity For:** | | | | | | | |
| Army | Count: | 251 | 96 | 140 | 193 | 194 | 874 |
| | Percent: | 28.7 | 11.0 | 16.0 | 22.1 | 22.2 | 100.0 |
| Navy | Count: | 96 | 199 | 164 | 65 | 179 | 703 |
| | Percent: | 13.6 | 28.3 | 23.3 | 9.2 | 25.5 | 100.0 |
| Air Force | Count: | 140 | 164 | 369 | 63 | 197 | 933 |
| | Percent: | 15.0 | 17.6 | 39.5 | 6.7 | 21.1 | 100.0 |
| Marine Corps | Count: | 193 | 65 | 63 | 144 | 184 | 649 |
| | Percent: | 29.7 | 10.0 | 9.7 | 22.2 | 28.3 | 100.0 |
| **19-24 Year Olds' Positive Propensity For:** | | | | | | | |
| Army | Count: | 324 | 103 | 105 | 221 | 239 | 992 |
| | Percent: | 32.7 | 10.4 | 10.6 | 22.3 | 24.1 | 100.0 |
| Navy | Count: | 103 | 151 | 99 | 39 | 202 | 594 |
| | Percent: | 17.3 | 24.4 | 16.7 | 6.6 | 34.0 | 100.0 |
| Air Force | Count: | 105 | 99 | 295 | 60 | 201 | 760 |
| | Percent: | 13.8 | 13.0 | 38.8 | 7.9 | 26.4 | 100.0 |
| Marine Corps | Count: | 221 | 39 | 60 | 141 | 224 | 685 |
| | Percent: | 32.3 | 5.7 | 8.8 | 20.6 | 32.7 | 100.0 |
| **Total Males:** | | | | | | | |
| Army | Count: | 574 | 199 | 244 | 414 | 432 | 1,863 |
| | Percent: | 30.8 | 10.7 | 13.1 | 22.2 | 23.3 | 100.0 |
| Navy | Count: | 199 | 351 | 263 | 104 | 404 | 1,321 |
| | Percent: | 15.1 | 26.6 | 19.9 | 7.9 | 30.6 | 100.0 |
| Air Force | Count: | 244 | 263 | 664 | 124 | 398 | 1,693 |
| | Percent: | 14.4 | 15.5 | 39.2 | 7.3 | 23.5 | 100.0 |
| Marine Corps | Count: | 414 | 104 | 124 | 284 | 408 | 1,334 |
| | Percent: | 31.0 | 7.8 | 9.3 | 21.3 | 30.6 | 100.0 |

Notes:
- Tabled percentages are row percents.
- CEDS/YATS III Sample restricted to only include individuals within the YATS II sample frame.
- Population counts are in thousands. Counts may not sum to column or row totals due to rounding.

positive propensity levels for each Service. Within each row, individuals expressing positive propensity for each Service are further broken down into those who have expressed interest in that Service alone (as shown on the diagonal in the table); those who expressed interest in that Service along with one other (as shown in the off-diagonal triangles); and those who indicated interest in more than two Services (as shown in the shaded area).

For example, the first row shows that an estimated 874,000 young males (16-18 year-olds) expressed positive propensity for the active Army. Of these individuals, 28.7 percent (about 251,000) expressed interest in only the Army. Of the 16-18 year-old males having a positive propensity to enlist in the Army, 11.0 percent (about 96,000 youth) indicated interest in both the Army and the Navy, approximately 16 percent (about 140,000) indicated interest in both the Army and the Air Force, and 22.1 percent (about 193,000 youth) indicated interest in both the Army and the Marine Corps. Another 22.2 percent (about 194,000 youth) indicated interest in the Army and at least two other Services.

Figures 5-1 through 5-4 illustrate the overlap in active component propensity among males. The different segments show the percentage of respondents who indicated positive propensity as brand loyalists, dual loyalists, or all military for each Service.

**Figure 5-1. Overlap in Service-Specific Active Component Propensity Among Males for the Army**

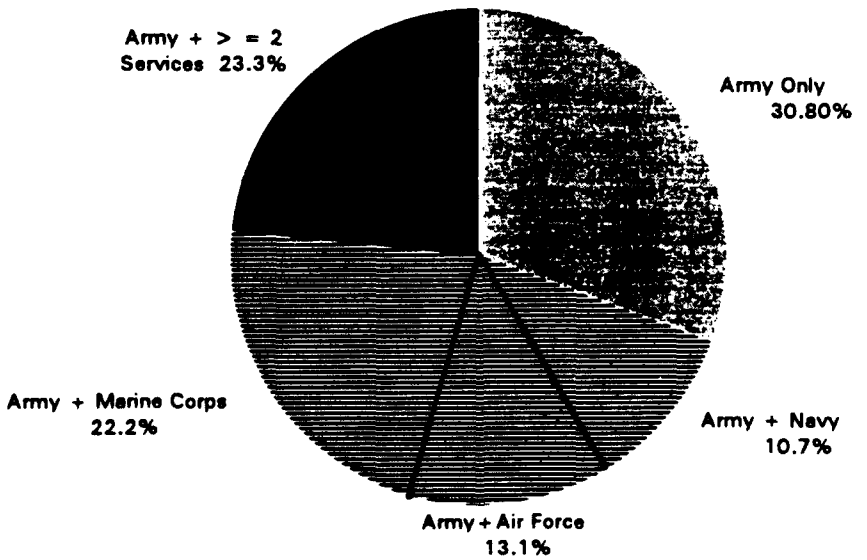


Figure 5-2. Overlap in Service-Specific Active Component Propensity Among Males for the Navy

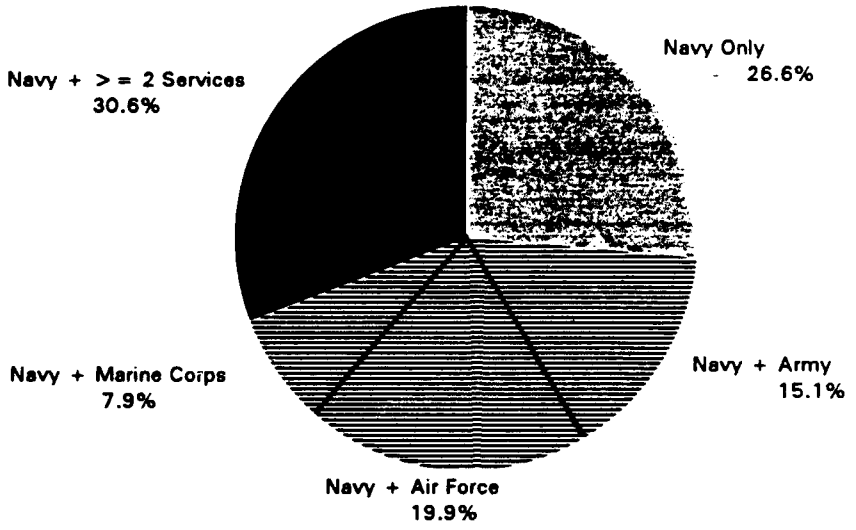



Figure 5-3. Overlap in Service-Specific Active Component Propensity Among Males for the Air Force

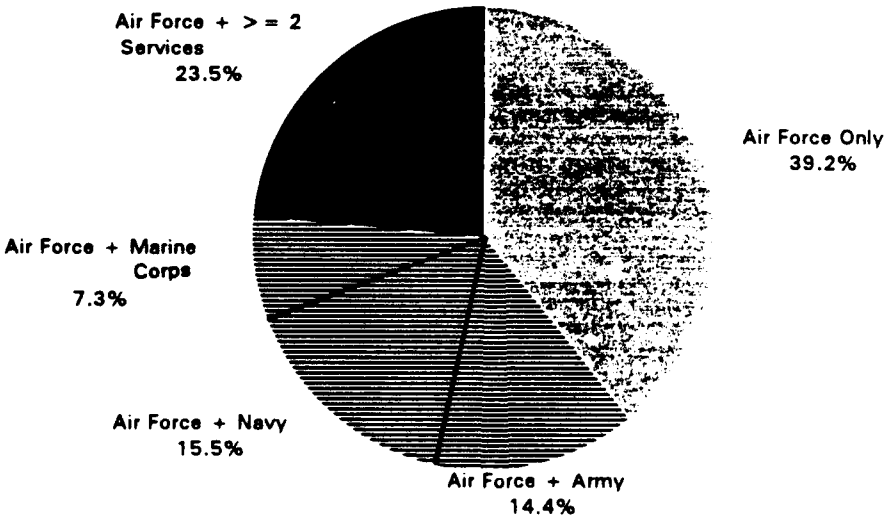
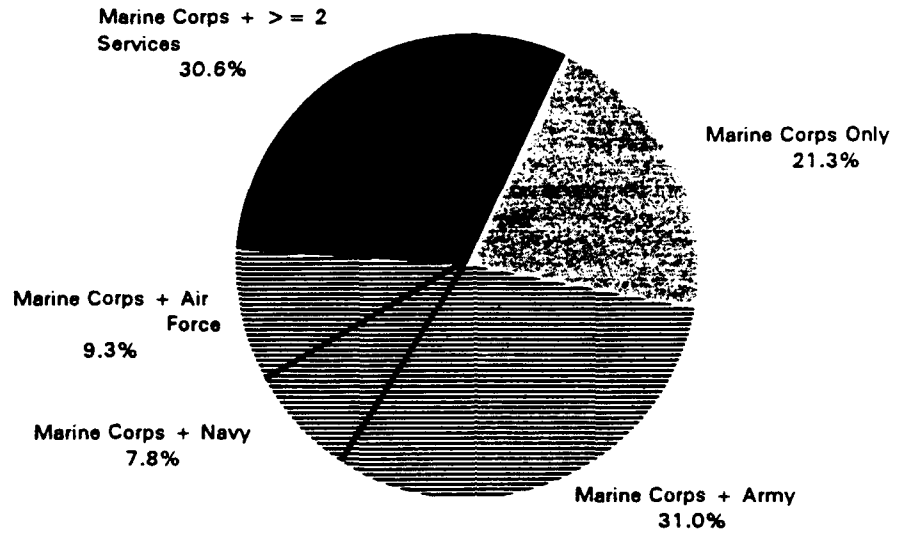


Figure 5-4. Overlap in Service-Specific Active Component Propensity Among Males for the Marine Corps




**Patterns in Dual Loyalties.** Dual loyalists comprised about 11 percent (Table 5-2) of the approximately 29 percent of active Service positive propensity males (see Table 3-1). Examination of Table 5-3 shows that the dual loyalty group was, by no means, homogeneous. The most striking pattern among the dual loyalists was the consistently strong association between interest in the Army and interest in the Marine Corps. For all males, the Army-Marine Corps combination consistently comprised the largest number of dual loyalists. Approximately 193,000 of the 16-18 year-old males and 221,000 of the 19-24 year-old males expressed interest in both the Army and the Marine Corps. Because of the differential distribution of the dual interest, this pattern may have a stronger impact on the Marines than on the Army. For the Marine Corps, the Army-Marine Corps dual loyalty group comprised a larger proportion of its positive propensity total (about a third in each age group), compared to the Army, for whom this group comprised about one-fifth of the total Army positive propensity.

Absence of overlapping interest is as intriguing as the existence of overlap. For example, beyond the overlap of interest with the Army, interest in the Marine Corps showed little overlap in interest with the Air Force and the Navy. These patterns were consistent for both the 16-18 and 19-24 year-old groups.

Other patterns were less consistent across the age groups. For only the 16-18

year-olds there was a strong association between interest in the Air Force and the Navy. This combination accounted for a slightly larger proportion of the Navy's positive propensity group (23.3 percent) than it did of the Air Force's positive propensity group (17.6 percent).

For the older males, however, the Army was a strong choice among those who indicated interest in each of the other three Services. It has already been noted that there was a strong association between interest in the Army and Marine Corps. In similar fashion, a substantial proportion of the individuals who expressed positive propensity for the Air Force and Navy (13.8 and 17.3 percent, respectively) also expressed interest in the Army.

**Patterns in the "All Military" Segment.** A substantial number of the YATS positive propensity males fell within the "all military" group. About one-quarter to one-third of all males who indicated positive propensity for any one Service indicated interest in three or more Services (see Figures 5-1 through 5-4). These proportions were slightly higher for the 19-24 year-old males than for the 16-18 year-old males. Among the younger males, between one-fifth and one-quarter of those who expressed interest in any Service indicated that they were also interested in three or more of the Services. Among the older males, these proportions ranged from about one-fifth to over one-third.

In examining the data for each Service, similar observations can be made. The "all military" group tended to be proportionately more dominant among the Marine Corps and Navy markets than among the Army and Air Force markets. Taking an inter-Service competitive market perspective, this could be an indication that the markets for the Marine Corps and Navy are somewhat "softer" and therefore more vulnerable to their "competitor" Services, the Army and the Air Force.

### Overlap Between Active and Reserve Components by Service

Another perspective on the market overlap issue is the potential overlap between the active and Reserve Components for each Service. The question here is, "Are individuals who expressed interest in the active component of any particular Service also interested in the Reserve Component(s) of that Service?"

Table 5-4 includes only individuals who expressed positive propensity for either the active or Reserve Component of any particular Service. It follows the same age groupings as in the previous set of analyses, i.e., younger males (ages 16-18), older males (ages 19-24), and total males. Data are presented separately for each Service, decomposing the positive propensity respondents for each Service into those who expressed interest in the active component only, both active and Guard components, both active and Reserve Components, and all three components of that Service (where applicable).

Table 5-4. Fall 1990 CEDS/YATS III - Overlap in Service-Specific Active Component and Reserve Component Propensity Among Males by Age Group

| | 16-18[a] | | 19-24[b] | | Total Males[c] | |
|---|---|---|---|---|---|---|
| | Percent | Count | Percent | Count | Percent | Count |
| Army | | | | | | |
| Active only | 51.8 | 234 | 51.9 | 265 | 51.9 | 500 |
| Active + Guard | 21.2 | 96 | 18.0 | 92 | 19.5 | 188 |
| Active + Reserve | 11.9 | 54 | 13.7 | 70 | 12.9 | 124 |
| All 3 components | 15.0 | 68 | 16.2 | 83 | 15.7 | 151 |
| Total Army | 100.0 | 452 | 100.0 | 511 | 100.0 | 963 |
| Navy | | | | | | |
| Active only | 83.4 | 277 | 79.4 | 250 | 81.7 | 528 |
| Active + Reserve | 16.3 | 54 | 20.6 | 65 | 18.4 | 119 |
| Total Navy | 100.0 | 331 | 100.0 | 315 | 100.0 | 646 |
| Air Force | | | | | | |
| Active only | 65.2 | 320 | 72.6 | 276 | 68.4 | 596 |
| Active + Guard | 12.8 | 63 | 8.2 | 31 | 10.8 | 94 |
| Active + Reserve | 9.4 | 46 | 13.7 | 52 | 11.2 | 98 |
| All 3 components | 12.4 | 61 | 5.5 | 21 | 9.4 | 82 |
| Total Air Force | 100.0 | 491 | 100.0 | 380 | 100.0 | 871 |
| Marine Corps | | | | | | |
| Active only | 70.6 | 260 | 76.4 | 252 | 73.5 | 513 |
| Active + Reserve | 29.3 | 108 | 23.3 | 77 | 26.5 | 185 |
| Total Marine Corps | 100.0 | 368 | 100.0 | 330 | 100.0 | 698 |

Notes:
- Tabled values are row percents and weighted population estimates.
- CEDS/YATS III Sample restricted to only include individuals within the YATS II sample frame.
- Population counts are in thousands. Counts may not sum to column or row totals due to rounding.

[a]Estimates are based on 5,107,000 16-18 year olds.
[b]Estimates are based on 7,652,000 19-24 year olds.
[c]Estimates are based on 12,759,000 total.

Within each Service, a relatively minor overlap was shown between interest in the active and Reserve Components of that Service. Interestingly, there were rather large differences among the Services with regard to interest in only the active component. About half of all males who expressed interest in the Army were only interested in the active component. The proportion of those interested only in the active component increased to 65 percent for the Air Force, 71 percent for the Marine Corps, and over 80 percent for the

Navy. Figures 5-5 to 5-8 illustrate the overlap between interest in the active and Reserve Components of each Service for the total group of males.

In general, the pattern of results were fairly consistent across the two age groupings with regard to percentages for the specific Service only, the Service and Reserve, etc. The only exception seemed to be among individuals who expressed positive propensity for the Air Force. For this group, the proportions of younger and older males who were interested in only the active component were relatively similar. However, age group differences were evident among those who expressed interest in both the active and Reserve Components of the Air Force. Relatively, a much higher interest was expressed by the older males than the younger males for the Air Reserve Component than for the Air Guard.

### Summary and Conclusions

The analysis of separating the composite propensity measure presented in this chapter was undertaken as a new approach to characterizing the recruiting markets for the Military Services. Whereas previous efforts at market analysis have concentrated on examining the demographic or external correlates of composite propensity levels, this chapter attempts to define market segments in terms of the structure of relationships among

**Figure 5-5. Overlap in Service-Specific Active Component and Reserve Component Propensity Among Males for the Army**

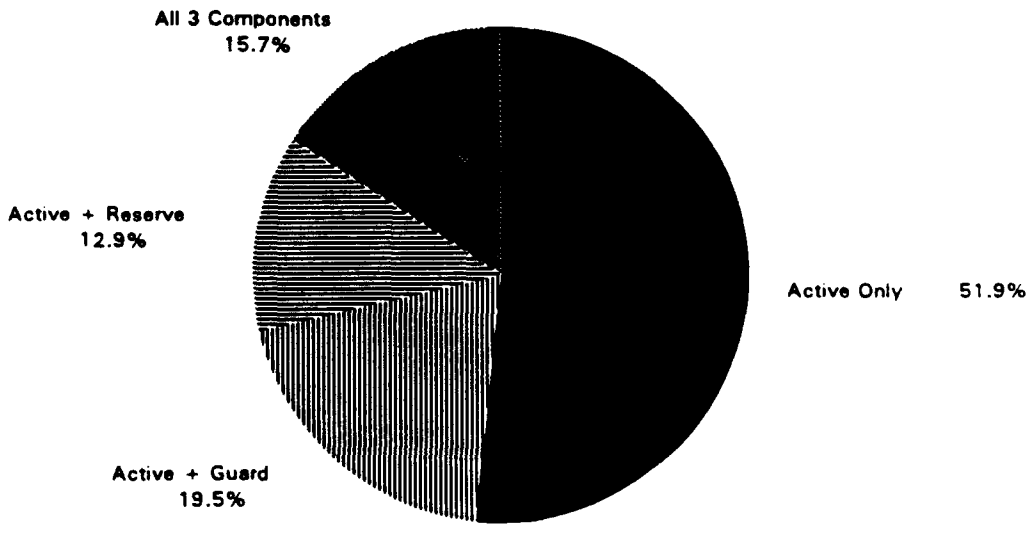


Figure 5-6. Overlap in Service-Specific Active Component and Reserve Component Propensity Among Males for the Navy

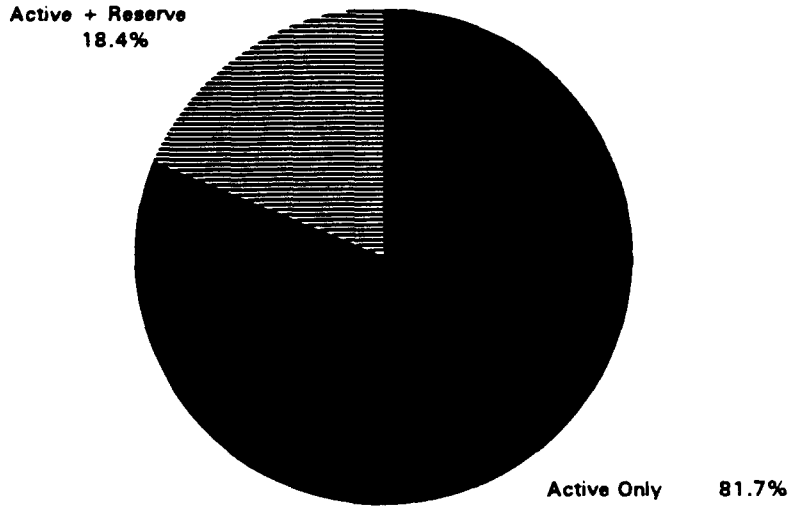



Figure 5-7. Overlap in Service-Specific Active Component and Reserve Component Propensity Among Males for the Air Force

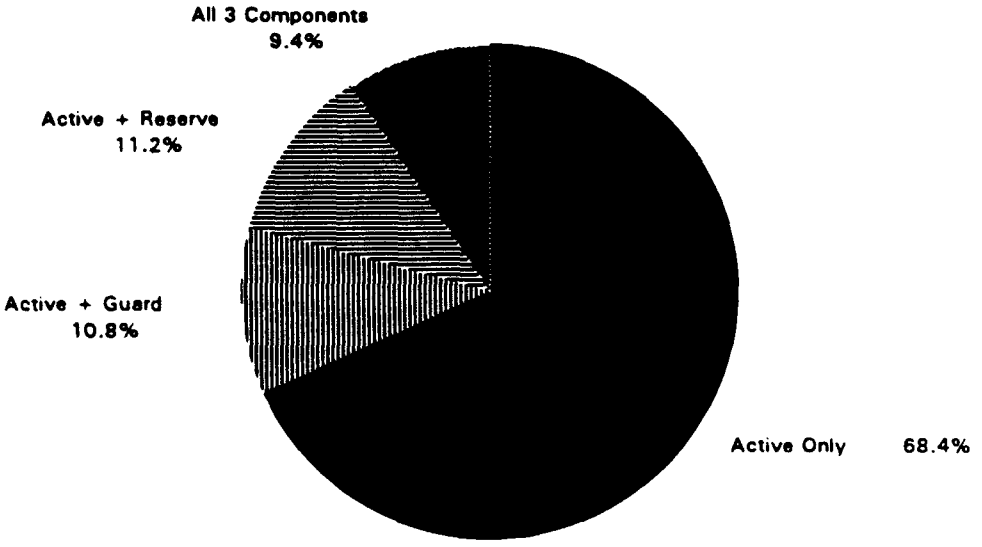
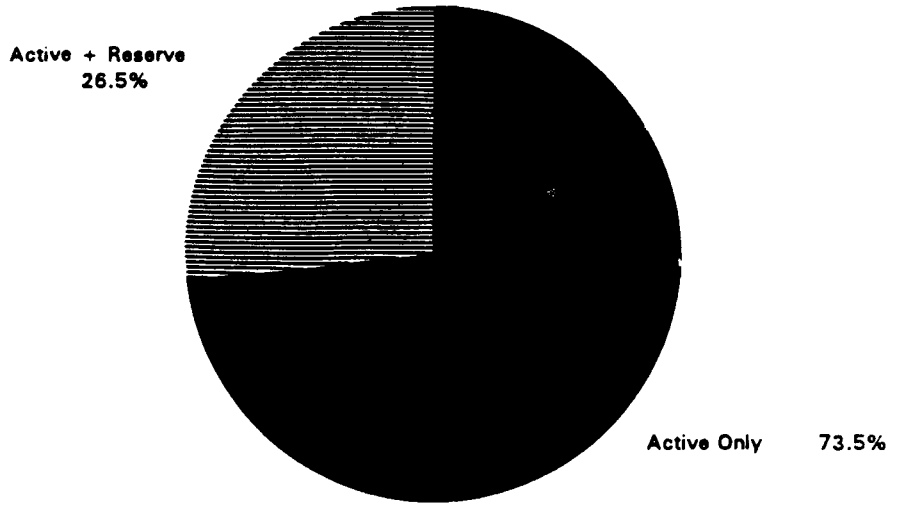


Figure 5-8. Overlap in Service-Specific Active Component and Reserve Component Propensity Among Males for the Marine Corps




the Service-specific propensity variables. In addition, these analyses explored the relationships between the active and Reserve propensities within each Military Service.

The exclusiveness and overlapping structures of the enlistment interests explored in this chapter could be interpreted in various ways. Brand loyalists, those expressing interest in only one Service to the exclusion of others, indicates a strong target market for recruiters of that Service. To some extent, the dual loyalists, those who expressed interest in two Services, represent markets wherein the Services are in potential competition. For these groups, the specific appeal of each of the competing Services might be explored further. Finally, the group who expressed interest in three or more Services appears to be a market with relatively undefined interests. For this group, the military *per se* seems to be the relevant choice, rather than any of the specific Services.

### Active Services

The analysis shows that there was a substantial group of individuals (about 15 percent of all males between the ages of 16-24) who expressed interest in only one active Military Service. These "brand loyalists" can be considered as prime markets for their particular Services. Among the active Services, brand loyalty appears to be strongest among the potential recruits for the Army and

the Air Force. Among those who expressed interest in the Army or the Air Force, about one-third could be considered brand loyalists.

Interestingly, there was a large group of individuals who seemed to be interested in serving in any of the active Services, without much regard for the particular Service. Since no one joins the military without signing up for a specific Service, an understanding of the composition and circumstances of this group is of great interest.

In between the "brand loyalists" group and the "all military" group, there was a large group of "dual loyalists" -- individuals who expressed interest in two Services. Unexpected combinations were identified. Interest in the Army and the Marine Corps, for example, appeared to be a dual interest for both older and younger males. Dual interest in the Air Force and Navy was also found, however, more among the younger than the older males. An unexpected absence of associations was also noticed between propensity for the Navy and the Marine Corps.

### Components Within Services

The analysis also explored the overlap in interest between the active and Reserve Components within each of the Military Services. Within each Service, interest in the active components was fairly well differentiated from interest in the Reserve Components. Approximately 50 to 80 percent of those who expressed positive propensity for any specific Service were interested in the active component only. The Service-specific differences were rather pronounced in this analysis. The preference for the active component only was most dominant for the Navy and least so for the Army.

# 6. DESERT STORM AND YOUTH ENLISTMENT PROPENSITY

## Introduction and Overview

The Fall 1990 CEDS/YATS III was administered over an eight-week period, starting December 12, 1990 and ending on February 7, 1991. During this period, the United States Armed Forces continued a major military build-up in the Persian Gulf. Initially, the U.S. maintained a defensive posture designed to prevent Iraq's Saddam Hussein from advancing his troops into other Gulf states **(Operation Desert Shield)**. The build-up however, escalated into a full-scale offensive war aimed at liberating Kuwait **(Operation Desert Storm)**. This chapter examines changes in enlistment propensity that accompanied these recent events in the Middle East.

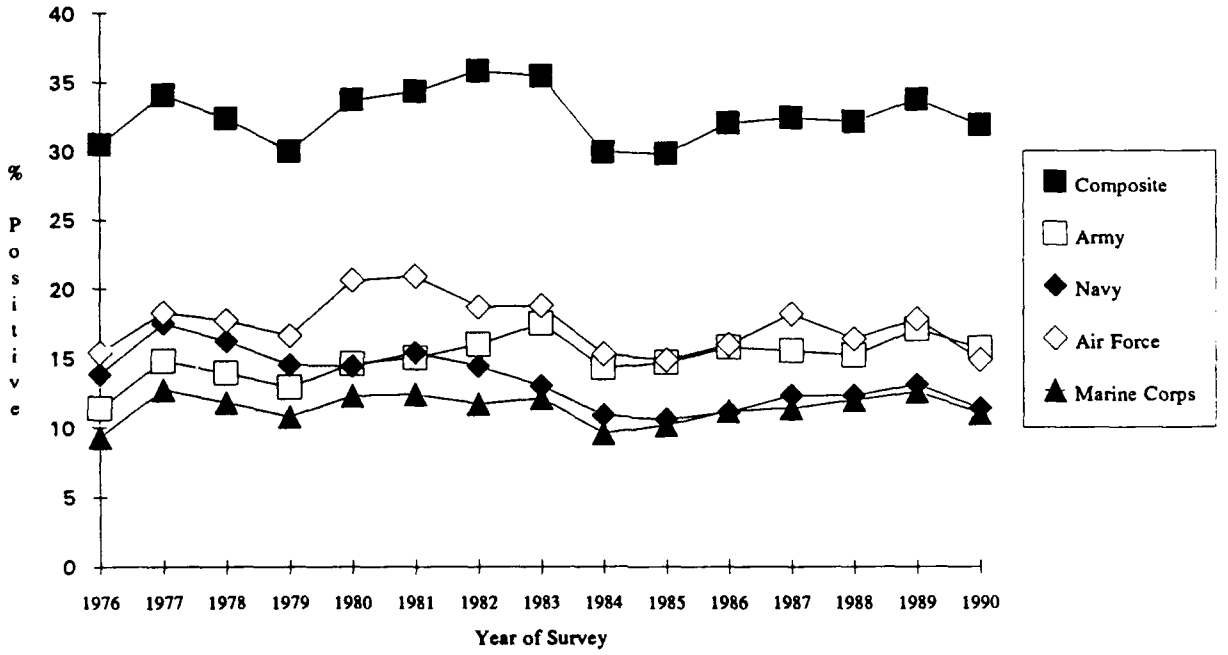
The analysis presented in this chapter compares positive enlistment propensity by age, gender, and demographic/market groups for each of the Military Services for three time periods: Pre-Desert Shield, Desert Shield, and Desert Storm. Pre-Desert Shield propensity measurements are taken from the 1989 YATS II which was administered between July 23 and November 10, 1989. Desert Shield and Desert Storm analyses are based on CEDS/YATS III data (December 12, 1990 through January 14, 1991, and January 16 through February 7, 1991 interviews, respectively). To permit a more complete examination of changes in enlistment propensity accompanying the Persian Gulf War, Post-Desert Storm data will be obtained from the 1991 Summer CEDS/YATS III.

## Background

The Defense Manpower Data Center, Department of Defense, has tracked enlistment propensity with annual surveys of young men and women (YATS) since 1976. In general, propensity levels have exhibited great stability, with only relatively minor fluctuations (Figure 6-1). This stability, however, may be partially attributed to the relative calm experienced by the United States military following its Vietnam involvement. The United States military has been mobilized for only a few, relatively small and limited engagements, such as those in Grenada, Lebanon, and Panama, during this peacetime era. It wasn't until the recent Persian Gulf Conflict that this military calm ended. Figure 6-2 presents a brief overview of the major milestones that occurred during the recent Middle East crisis.

Iraqi Military Forces, under the direction of Saddam Hussein, invaded Kuwait on August 2, 1990. Within a day, Iraqi forces had occupied this small country, and the Emir of Kuwait and his family had fled to Saudi Arabia. It soon became apparent that Iraqi

Figure 6-1 Trends in Positive Propensity for 16-21 Year-Old Males - 1976-1990




forces were not intending to stop with the occupation of Kuwait. Instead, troops were continuing to move through Kuwait and beginning to mass on the Saudi Arabian border.

World reaction to Iraq's invasion was swift and unprecedented. On August 2, 1990, the United Nation's (UN) Security Council passed Resolution 660 which condemned the invasion of Kuwait and demanded an immediate and unconditional withdrawal of Iraqi forces (see Figure 6-3). Four days later, with no withdrawal in sight, the UN imposed comprehensive economic sanctions against Iraq.

The direct action taken to confront the Iraqi threat to Saudi Arabia was even more impressive. In the three weeks following the invasion of Kuwait, the United States became actively involved. First, they organized the industrialized democracies, the majority of the Arab League states, and the United Nations into an allied coalition that strongly reinforced statements concerning collective security. They also deployed a credible American Military Force in Saudi Arabia.

Once the coalition was established, it mobilized a response on a scale and at a speed never before witnessed. Within the first month of operation, 72,000 military personnel and 100,000 tons of supplies had been airlifted to Saudi Arabia, and 326,000 tons of supplies had been transported by sea. By the end of Desert Storm, over 533,000 U.S. soldiers were in the Kuwaiti theater of operations.

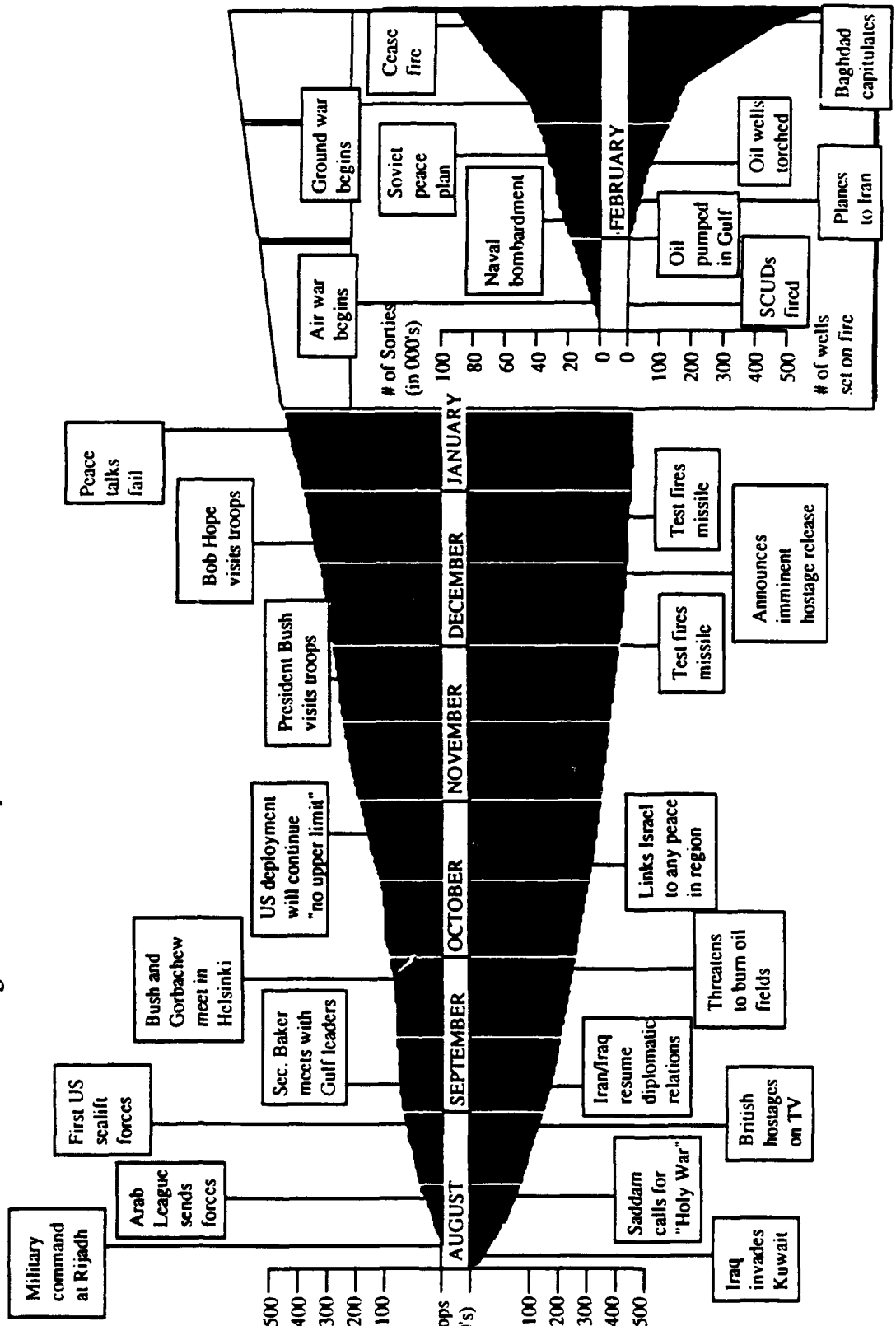



Figure 6-2. Summary of Gulf War Events

Figure 6-3. UN Security Council Resolutions on the Persian Gulf Crisis

**2 August**
**RESOLUTION 660:** Condemned Iraq's invasion of Kuwait and demanded an immediate and unconditional Iraqi withdrawal.

**6 August**
**RESOLUTION 661:** Imposed comprehensive economic sanctions against Iraq under Chapter VII of the UN Charter.

**9 August**
**RESOLUTION 662:** Declared Iraq's annexation of Kuwait as "null and void."

**18 August**
**RESOLUTION 664:** Demanded that Iraq permit and facilitate the immediate departure of third-country nationals from Kuwait. Demanded rescinding of Iraq's orders to close diplomatic and consular missions in Kuwait.

**25 August**
**RESOLUTION 665:** Endorsed a naval blockade of Iraq.

**13 September**
**RESOLUTION 666:** Requested information on condition of children, expectant mothers, maternity cases, and the sick and elderly. Asked that Iraq ensure the safety of third-state nationals.

**24 September**
**RESOLUTION 669:** Dealt with requests for assistance from countries affected by sanctions.

**25 September**
**RESOLUTION 670:** Confirmed that sanctions applied to all forms of transportation, including aircraft.

**29 October**
**RESOLUTION 674:** Demanded that Iraq cease taking hostages, stop mistreating nationals of Kuwait, and ensure their immediate access to food, water, and basic services. Reposed its trust in the Secretary-General to reach a peaceful solution to the crisis.

**28 November**
**RESOLUTION 677:** Condemned Iraq's attempts to alter the demographic composition and destroy the civil records of Kuwait.

**29 November**
**RESOLUTION 678:** Authorized the use of "all necessary means to uphold and implement" all relevant Council Resolutions and "to restore international peace and security in the area" if Iraq did not fully implement those resolutions on or before 15 January 1991.

Despite threatening pressures, the coalition held together throughout the seven months of Desert Shield and Desert Storm. When the final ground phase of operations began, troops from the US, Kuwait, Saudi Arabia, Britain, France, the UAE, Bahrain, Qatar, Oman, Syria, Italy, and Canada participated in the offense against the Iraqi Army. In the final analysis, the coalition achieved its major objectives and set a precedent for cooperation both regionally and internationally.[1]

### Research Questions

These military operations presented CEDS/YATS III with a unique opportunity. As interviewing occurred from December 1990 to February 1991, survey responses could be analyzed to determine the impact of these events on the propensity of American youth to enlist in the military. Additionally, since Desert Shield began in August and interviewing did not begin until five months later, survey responses could also reflect responses to the realities of military conflict and war.

Indeed, the events of Desert Shield and Desert Storm provided an opportunity to investigate the effects of several factors on enlistment propensity. First, what effects did the prolonged build-up of forces in the Gulf have on propensity? Would, as some suggested, enlistment propensity rise due to a surge in patriotism? Or, conversely, would enlistment propensity fall as military eligible youth saw the possibility of being placed in harm's way? These conflicting speculations, relating to the recruiting marketplace, were widely discussed by the media covering the impact of the war.

A second factor that may have affected propensity was the engagement of a highly effective air war against the Iraqi Military, beginning January 16, 1991. This operation literally grasped the attention of the nation, with images of anti-aircraft fire over Baghdad and smart bombs striking at will and with pin-point accuracy. Following the tension that resulted from the military build-up of the preceding six months, the success of this operation led to a surge in national pride. How did these events affect enlistment propensity?

A third highly publicized aspect of the Gulf conflict was the massive call-up of Reserve and National Guard personnel. Over 166,000 Guard and Reservists were placed on active duty. The size of the call-up highlighted the inconveniences that were possible for members of Guard and Reserve units, i.e., mothers leaving young children, both parents leaving children behind with relatives, students leaving school, and many people leaving jobs. News stories of these occurrences underscored the fact that being a member of the Guard or Reserve involved commitment and the fact that

[1] See Appendix D for more details on the chronology related to the Persian Gulf War.

one could be mobilized into active service at any time. How did this realization affect Reserve Component propensity?

### Propensity Measures

In the following analyses, propensity measures are compared using 1989 and 1990 data. Because of methodological differences in the sampling and weighting approaches used in 1989 and 1990, adjustments were made to assure the strict comparability of 1989 and 1990 data.[2] The focus of these analyses are the traditional composite and Service-specific positive enlistment propensity measures for both the active and Reserve Services.

### Analytic Approach

The major comparisons of interest were between the percentages of youth who showed positive enlistment propensity over three major periods: (1) the Pre-Desert Shield phase, represented by data collected from 11,575 youth in the 1989 YATS II administration; (2) the Desert Shield phase, represented by data collected from 5,814 youth during the early part of the Fall 1990 administration; and (3) the Desert Storm phase, represented by data collected from 2,160 youth during the latter part of the Fall 1990 administration.[3] Comparisons were made for composite and Service-specific enlistment propensity for the active Services and the Reserve Components. Separate analyses were conducted by gender and by age for males.

### Comparisons of Pre-Desert Shield, Desert Shield, and Desert Storm Propensity Levels

**Active Service Propensity.** Despite the events in the Gulf, Table 6-1 shows that there was remarkable stability in the pattern of responses obtained from the total sample over the three time-period evaluations. While it was of major concern as to whether propensity to join the military would decrease during the Persian Gulf conflict, this was <u>not</u> the case. Data showed that, overall, composite active service propensity for males and females remained relatively constant over the three periods examined.

This pattern of stability is remarkable, given the events that occurred over this time. In general, this stability supports the premise that enlistment propensity is a long-term underlying interest, rather than an attitude that is relatively responsive to external events.

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[2]YATS II and CEDS/YATS III sample weighting adjustments differ in that the YATS II methodology did not include poststratification adjustment to national census totals. To provide YATS II and CEDS/YATS III comparability, poststratification adjustments were applied to the YATS II 1989 data. Appendix C provides a more detailed discussion of these adjustments.

[3]Note that the three time periods represented have large disparities in number of respondents and that this affects the likelihood of finding significant differences.

However, there were a few exceptions to this pattern of stability that should be noted. Table 6-1 shows that there were statistically significant declines among males between Pre-Desert Shield and Desert Shield for the Air Force and the Navy. These lower Desert Shield levels were maintained into the Desert Storm phase for these two Services.

Active Component Propensity Changes by Age Group. Table 6-2 reveals that these shifts in propensity for the male population did not hold when the data were analyzed by age groups (16-18 year-olds, 19-21 year-olds, and 22-24 year-olds). The analyses of age groups revealed interesting differences in male propensity over time. Focusing on patterns, rather than statistical significance alone, is particularly appropriate in these analyses since many of the groups -- e.g., the older youth and the respondents during Desert Storm -- are too small to expect statistically significant results. Although few of these differences are statistically significant, their consistency across various measures suggests that the overall patterns may show meaningful findings that merit consideration. The changes in composite positive active propensity levels across the three time periods are depicted in Figure 6-4 and for each specific Service in Figures 6-5 through 6-8.

The main pattern of interest is the difference in response between the 16-18 year-old males and their older counterparts (Figure 6-4). Downward shifts were noted between propensity levels in 1989 (before the Gulf War started) and the levels reported in 1990 for these younger males. The drop in propensity level occurred largely between 1989 and the Desert Shield period, with generally smaller differences between the military build-up and the Gulf War. This observation also held for composite propensity and for the Service-specific propensities. It appears that war preparations made these young males aware of the risks and costs of war that may accompany joining the military. However, rather than dropping further during actual wartime, this group's propensity level remained relatively constant between Desert Shield and Desert Storm.

The responses of the older male groups (19-21 year-olds and 22-24 year-olds) differed from those of their younger counterparts (see Figure 6-4). Both groups showed increases in composite propensity between 1989 and 1990, largely accounted for by increases in the propensity to enlist in the Army (Figure 6-5). The oldest males also showed increased propensity for the Marine Corps (Figure 6-8). For the other Services, a slightly different pattern emerged -- a decline between 1989 and Desert Shield, and a rise between Desert Shield and Desert Storm, resulting in a "V" shaped pattern. This pattern of decline followed by an increase, characterized the responses of the 19-21 year-old males to the Navy (Figure 6-6) and the Air Force (Figure 6-7). Among the oldest male group, this "V" shaped pattern for propensity was seen for the Navy (Figure 6-6) and the Air Force (Figure 6-7).

Table 6-1. Fall 1990 CEDS/YATS III - Positive Active Service Propensity Levels by Gender

| | Total Sample | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1989 | 1990 | | 1989 | 1990 | | 1989 | 1990 | |
| | Peacetime[a] | Desert[b] Shield | Desert[c] Storm | Peacetime[d] | Desert[e] Shield | Desert[f] Storm | Peacetime[g] | Desert[h] Shield | Desert[i] Storm |
| Composite | 19.6 (0.4) | 20.1 (0.6) | 20.2 (1.0) | 28.3 (0.1) | 29.0 (0.8) | 29.5 (1.3) | 10.9 (0.5) | 11.6 (0.8) | 11.0 (1.3) |
| Army | 9.6 (0.3) | 9.8 (0.4) | 10.3 (0.8) | 14.4 (0.5) | 14.2 (0.6) | 15.7 (1.2) | 4.7 (0.4) | 5.7 (0.7) | 4.9 (1.1) |
| Navy | 7.7 (0.3) | 6.9 (0.4) | 7.6 (0.6) | 11.4 (0.5) | 10.0 (0.5)# | 11.2 (1.0) | 3.9 (0.3) | 4.0 (0.5) | 3.9 (0.9) |
| Air Force | 10.8 (0.3) | 9.8 (0.4)# | 9.4 (0.8) | 15.0 (0.5) | 13.4 (0.5)# | 13.0 (1.1) | 6.6 (0.4) | 6.3 (0.6) | 5.9 (1.0) |
| Marine Corps | 6.6 (0.3) | 6.1 (0.3) | 7.4 (0.6) | 10.5 (0.5) | 10.1 (0.5) | 11.4 (0.8) | 2.8 (0.3) | 2.3 (0.3) | 3.4 (0.9) |
| Coast Guard | 6.0 (0.3) | 5.0 (0.3)# | 5.6 (0.6) | 8.8 (0.4) | 7.8 (0.4) | 8.9 (0.7) | 3.1 (0.3) | 2.4 (0.5) | 2.3 (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- 1989 estimates are reweighted to be comparable to the 1990 estimates.

[a]Estimates are based upon 11,575 interviews.
[b]Estimates are based upon 5,814 interviews.
[c]Estimates are based upon 2,160 interviews.
[d]Estimates are based upon 6,979 interviews.
[e]Estimates are based upon 3,800 interviews.
[f]Estimates are based upon 1,429 interviews.
[g]Estimates are based upon 4,596 interviews.
[h]Estimates are based upon 2,014 interviews.
[i]Estimates are based upon 731 interviews.

#1989 Desert Shield differences were statistically significant at the p=.05 level.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Questions 509-513.

Table 6-2. Fall 1990 CEDS/YATS III - Positive Active Service Propensity Levels Among Males by Age Group

| | 16-18 Years Old | | | 19-21 Years Old | | | 22-24 Years Old | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1989 | 1990 | | 1989 | 1990 | | 1989 | 1990 | |
| | Peacetime[a] | Desert[b] Shield | Desert[c] Storm | Peacetime[d] | Desert[e] Shield | Desert[f] Storm | Peacetime[g] | Desert[h] Shield | Desert[i] Storm |
| Composite | 39.1 (1.0) | 37.8 (1.2) | 36.2 (2.2) | 21.8 (1.2) | 24.4 (1.6) | 26.7 (2.5) | 18.1 (1.4) | 20.1 (1.4) | 25.4 (3.1)+ |
| Army | 19.7 (0.8) | 16.8 (1.0)# | 18.1 (1.8) | 11.4 (0.9) | 13.6 (1.2) | 15.1 (2.1) | 9.3 (1.0) | 10.6 (1.3) | 13.8 (2.2) |
| Navy | 14.9 (0.7) | 13.8 (0.8) | 13.6 (1.7) | 9.3 (0.9) | 7.7 (0.8) | 10.4 (1.9) | 8.0 (1.1) | 6.6 (1.0) | 9.6 (2.1) |
| Air Force | 20.6 (0.8) | 18.5 (0.8) | 17.5 (1.9) | 11.5 (0.9) | 10.3 (1.2) | 12.0 (2.0) | 10.0 (1.1) | 8.6 (1.0) | 9.2 (1.7) |
| Marine Corps | 14.6 (0.7) | 12.7 (0.7) | 12.7 (1.2) | 8.1 (0.8) | 8.0 (1.0) | 10.8 (1.6) | 6.6 (0.9) | 8.3 (1.1) | 10.8 (1.8)+ |
| Coast Guard | 10.4 (0.6) | 10.3 (0.7) | 10.0 (1.2) | 8.0 (0.9) | 5.7 (0.8) | 5.6 (1.0) | 7.3 (1.0) | 6.0 (1.1) | 11.7 (1.9)*+ |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- 1989 estimates are reweighted to be comparable to the 1990 estimates.

[a]Estimates are based upon 3,906 interviews.
[b]Estimates are based upon 1,871 interviews.
[c]Estimates are based upon 595 interviews.
[d]Estimates are based upon 1,895 interviews.
[e]Estimates are based upon 1,209 interviews.
[f]Estimates are based upon 521 interviews.
[g]Estimates are based upon 1,178 interviews.
[h]Estimates are based upon 720 interviews.
[i]Estimates are based upon 313 interviews.

*Desert Shield-Desert Storm differences were statistically significant at the p=.05 level.

#1989 Desert Shield differences were statistically significant at the p=.05 level.

+1989 Desert Storm differences were statistically significant at the p=.05 level.

Source: Questions 509-513.

Figure 6-4. Composite Positive Active Propensity Among Males by Age Range

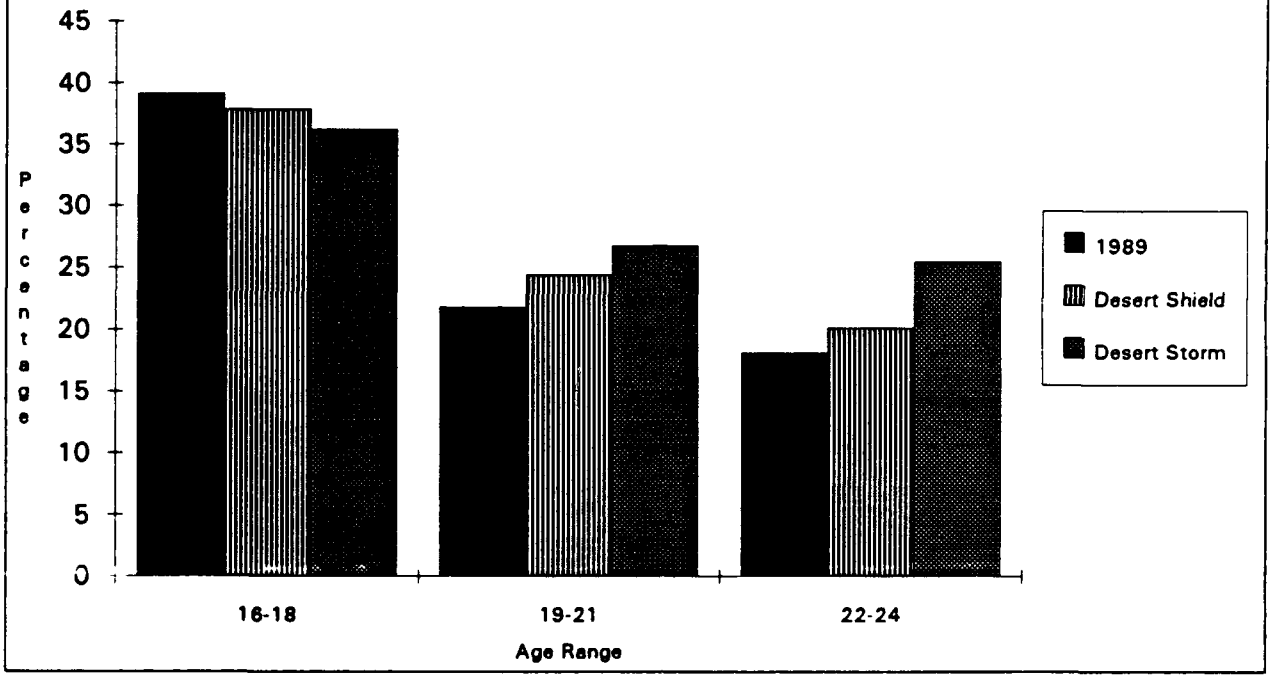



Figure 6-5. Positive Active Army Propensity Among Males by Age Range

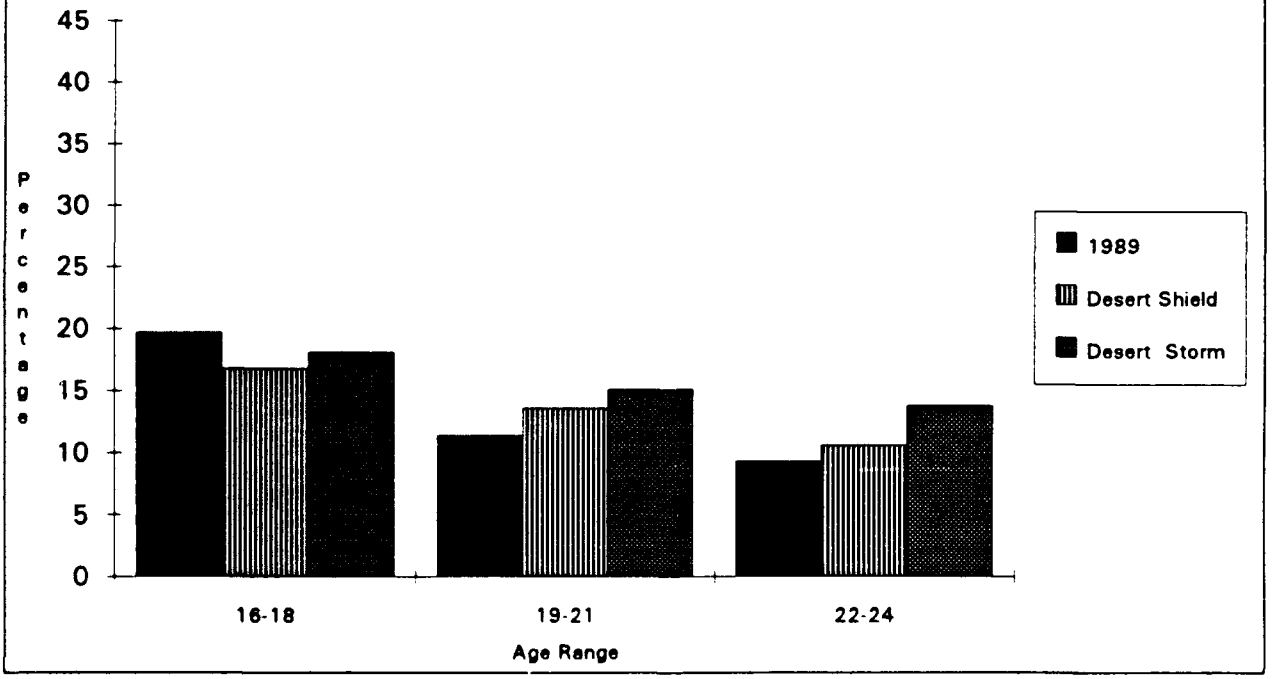


**Figure 6-6. Positive Active Navy Propensity Among Males by Age Range**

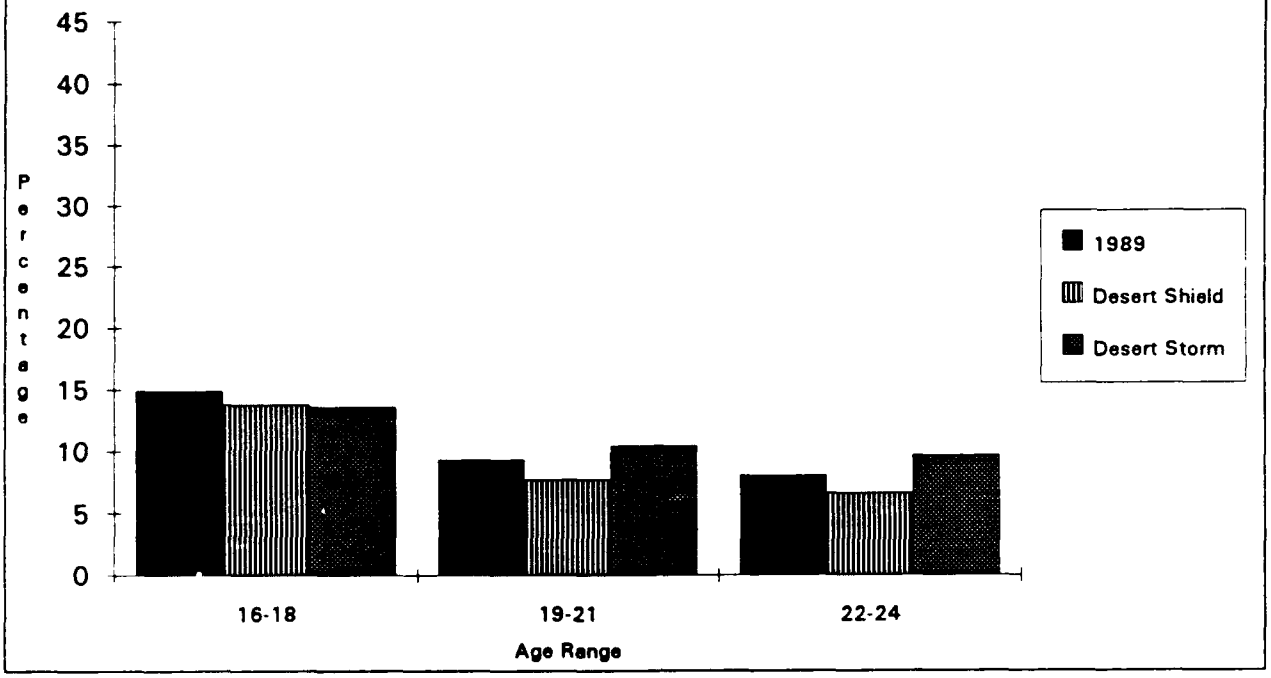



**Figure 6-7. Positive Active Air Force Propensity Among Males by Age Range**

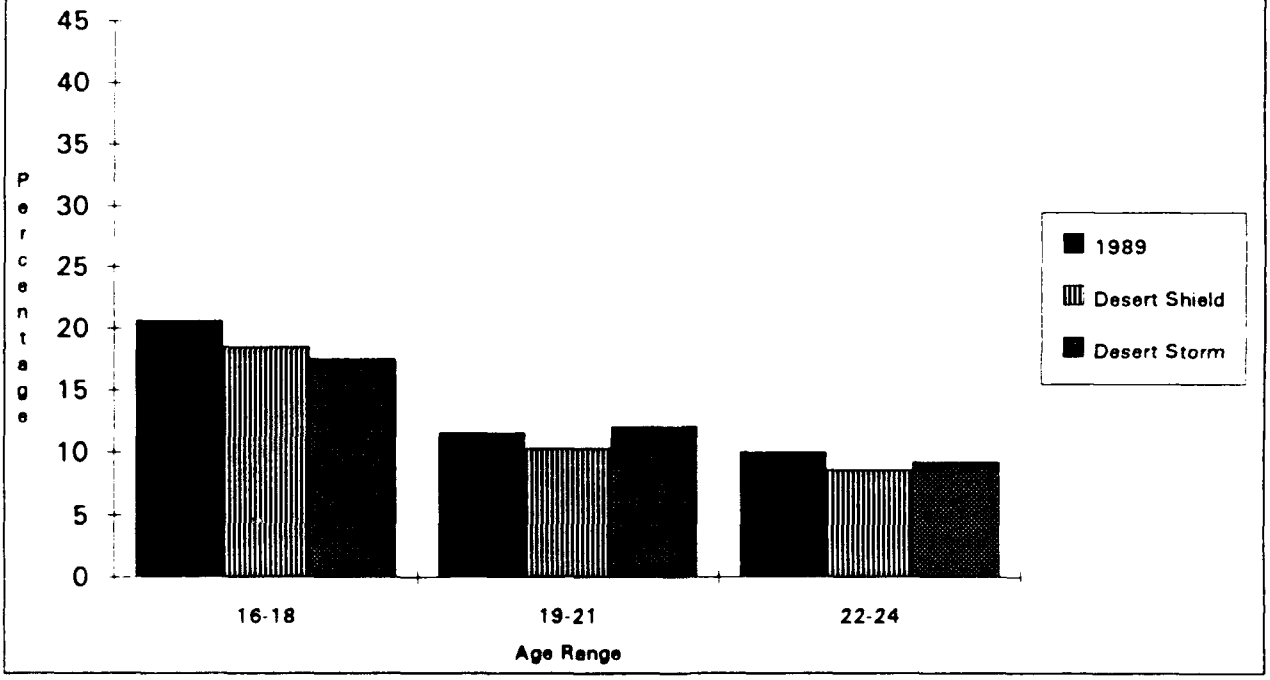
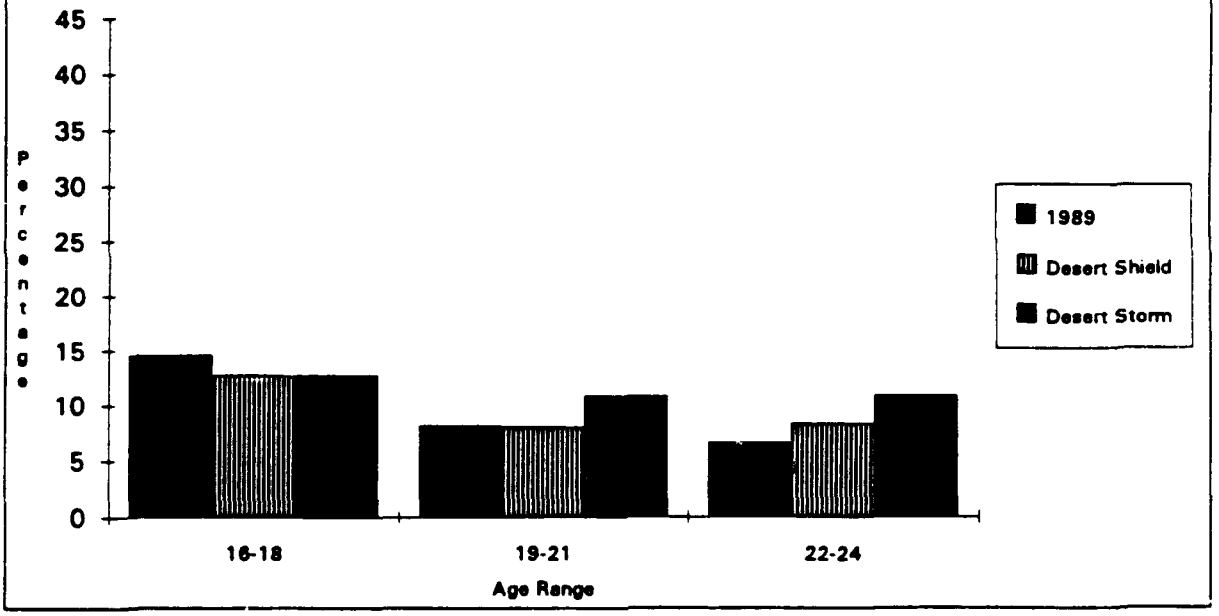


**Figure 6-8. Positive Active Marine Corps Propensity Among Males by Age Range**




Mixed patterns between 1989 and Desert Shield propensity measures may reflect an interim period in reactions of older males to the Gulf War. However, during wartime, the enlistment propensity among the older groups showed an increase. It appears that by the latter part of the war, this initial ambivalence was resolved in the direction of higher levels of interest in enlisting in the military. Among these older males, there was a notable pattern of increasing propensity levels for the majority of the Services between Desert Shield and Desert Storm.

These preliminary observations suggest that the effect of the U.S.'s involvement in the Gulf War did not produce uniform reactions from this nation's young men. The war may well have sensitized the younger males and older males to different aspects of the military.

Little can be said about the changes in female responses over this time frame because the sample sizes for subgroups were too small to make reliable statistical estimates. Females, ages 16-18, demonstrated slight declines in composite and Air Force propensity between 1989 and 1990, whereas the 22-24 year-old females showed an increase in composite propensity to enlist across all 3 survey periods.

**Reserve Component Propensity**. As noted previously, analyses of Reserve Component propensity changes were confined to the random half sample that received the YATS II version of the Reserv Component propensity questions. Thus, even more so than in the analyses of active service propensity changes, the smaller sample sizes made it important to discuss overall patterns of results, rather than relying solely on statistical significance.

Responses of males and females to the Reserve Component propensity questions are shown in Table 6-3. Overall, a slight downward shift was observed between 1989 and early 1990. Examination of propensity for the two Reserve Components indicate that this decline appears to be largely due to the decline in propensity to enlist in the Reserves rather than the National Guard. The difference between the response patterns for the two Reserve Components may be attributed to the different roles they played in the Persian Gulf War. While both Reserve and National Guard units were mobilized, Reserve units were far more active in the theater of operations.

Reserve Component Propensity Changes by Age Group. Table 6-4 shows the responses of the males in the three age groups over this time period. The overall decline in Reserve Component propensity appears to be driven by the responses of the 16-18 year-olds (Figure 6-9). Somewhat parallel to the results obtained for active service propensity, this group of males showed the most noticeable decline in propensity. The data showed an earlier occurring decline in propensity for the Reserves (between 1989 and 1990), while decline in interest in joining the National Guard was reflected in the latter period (between Desert Shield and Desert Storm).

For the older males, changes in Reserve propensity between 1989 and 1990 were mixed. Initially, the National Guard propensity declined for the two older age groups, as did Reserve propensity for the 22-24 year-olds. Between Desert Shield and Desert Storm, however, interest in enlistment in both the Reserves and National Guard increased. These "V" shaped patterns were similar to those obtained for active service propensity. The later increases may be attributed to the interest in the military generated by the successful military operations in the Persian Gulf.

As with active propensity, relatively little can be noted here about propensity patterns for females due to the small number of respondents. In general, females showed a decline in composite Reserve propensity over the three periods.

**Summary and Conclusions**

The analyses of propensity levels for Pre-Desert Shield (pre-War), Desert Shield (mobilization), and Desert Storm (War) are preliminary because data collection in the Fall 1990 CEDS/YATS III ended while the air-war was still going on and the land-war was impending, surrounded by much speculation and apprehension. Thus, what we have here can be considered "early returns," with more definitive information to come from the upcoming Summer 1991 YATS. The Summer 1991 data should be informative because the data collection will occur at a time when the Gulf War has ended and youth are aware of the allied victory.

Nevertheless, several interesting observations can be made. For example, the

Table 6-3. Fall 1990 CEDS/YATS III - Positive Reserve Component Propensity Levels by Gender

| | Total Sample | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1989 | 1990 | | 1989 | 1990 | | 1989 | 1990 | |
| | Peacetime[a] | Desert[b] Shield | Desert[c] Storm | Peacetime[d] | Desert[e] Shield | Desert[f] Storm | Peacetime[g] | Desert[h] Shield | Desert[i] Storm |
| Composite | 15.3 (0.4) | 14.3 (0.8) | 14.[illegible] (1.4) | 22.0 (0.6) | 21.2 (1.0) | 21.6 (1.7) | 8.6 (0.5) | 7.9 (1.2) | 6.7 (1.5) |
| National Guard | 9.3 (0.3) | 8.9 (0.6) | 8.2 (1.2) | 13.8 (0.5) | 13.0 (1.1) | 12.0 (1.7) | 4.8 (0.3) | 5.0 (0.9) | 4.0 (--) |
| Reserves | 12.0 (0.4) | 10.5 (0.8) | 12.1 (1.3) | 17.2 (0.6) | 16.0 (0.9) | 17.8 (1.5) | 6.8 (0.4) | 5.4 (1.0) | 5.8 (1.5) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Responses reported only for individuals administered the YATS II version of propensity.
- 1989 estimates are reweighted to be comparable to the 1990 estimates.

[a]Estimates are based upon 11,575 interviews.
[b]Estimates are based upon 2,886 interviews.
[c]Estimates are based upon 1,073 interviews.
[d]Estimates are based upon 6,979 interviews.
[e]Estimates are based upon 1,869 interviews.
[f]Estimates are based upon 729 interviews.
[g]Estimates are based upon 4,596 interviews.
[h]Estimates are based upon 1,017 interviews.
[i]Estimates are based upon 344 interviews.

(--) indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Questions 505 and 507.

Table 6-4. Fall 1990 CEDS/YATS III - Positive Reserve Component Propensity Levels Among Males by Age Group

| | 16-18 Years Old | | | 19-21 Years Old | | | 22-24 Years Old | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1989 | 1990 | | 1989 | 1990 | | 1989 | 1990 | |
| | Peacetime[a] | Desert[b] Shield | Desert[c] Storm | Peacetime[d] | Desert[e] Shield | Desert[f] Storm | Peacetime[g] | Desert[h] Shield | Desert[i] Storm |
| Composite | 28.0 (0.9) | 26.6 (1.9) | 25.3 (1.9) | 18.0 (1.1) | 17.7 (1.8) | 20.0 (3.0) | 16.7 (1.3) | 16.8 (2.1) | 18.9 (4.7) |
| National Guard | 16.6 (0.7) | 17.6 (1.6) | 12.0 (1.9)*+ | 11.7 (0.9) | 8.8 (1.4) | 11.4 (2.4) | 11.8 (1.2) | 10.6 (1.7) | 12.6 (--) |
| Reserves | 22.0 (0.8) | 19.3 (1.9) | 20.8 (2.0) | 13.5 (1.0) | 14.7 (1.7) | 15.8 (2.5) | 13.6 (1.3) | 12.4 (2.2) | 16.7 (5.1) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Responses reported only for individuals administered the YATS *II* version of propensity.
- 1989 estimates are reweighted to be comparable to the 1990 estimates.

[a]Estimates are based upon 3,906 interviews.
[b]Estimates are based upon 907 interviews.
[c]Estimates are based upon 317 interviews.
[d]Estimates are based upon 1,895 interviews.
[e]Estimates are based upon 605 interviews.
[f]Estimates are based upon 259 interviews.
[g]Estimates are based upon 1,178 interviews.
[h]Estimates are based upon 357 interviews.
[i]Estimates are based upon 153 interviews.

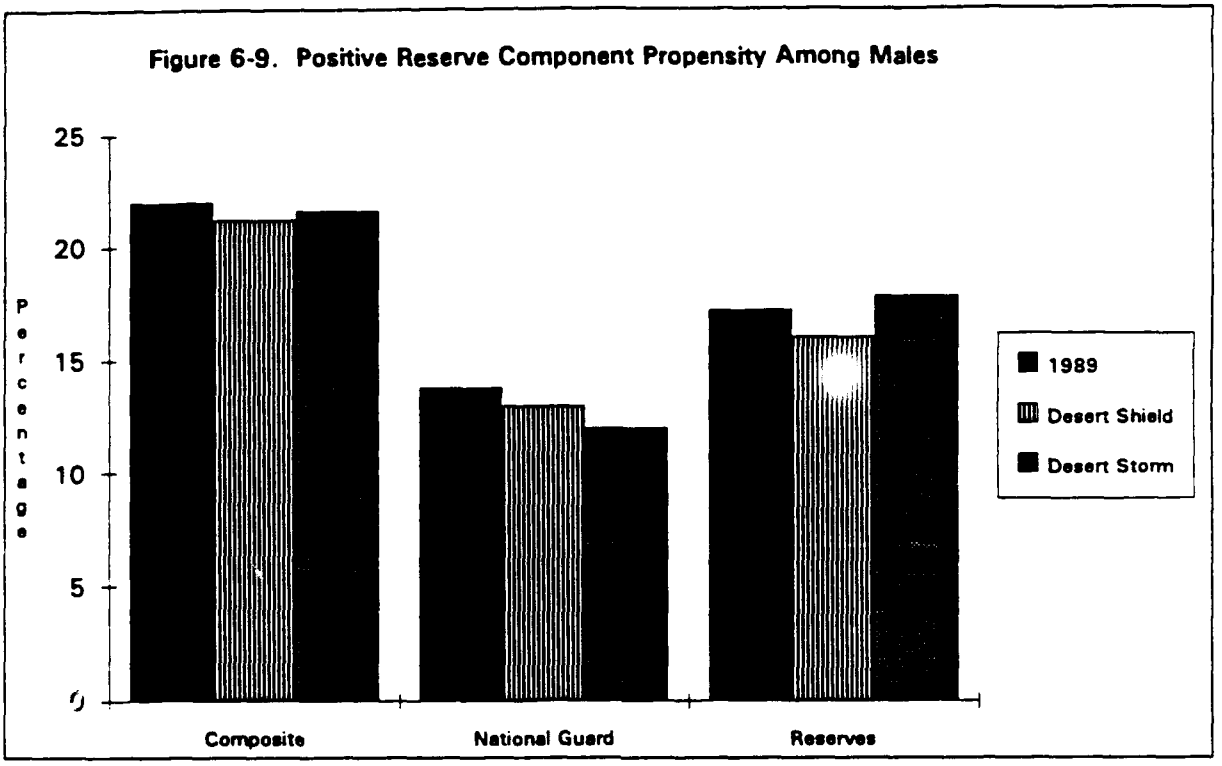
*Desert Shield-Desert Storm differences were statistically significant at the p=.05 level.

+1989 Desert Storm differences were statistically significant at the p=.05 level.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Questions 505 and 507.

Figure 6-9. Positive Reserve Component Propensity Among Males




most notable finding is the overall stability of propensity over time. Given the intensity of the mobilization and the campaign in the Persian Gulf, the shifts in propensity levels observed in these analyses were minor. Contrary to the implications of much of the media coverage during the period, the Gulf War did not appear to precipitate major swings in either direction in the intentions of the eligible youth population to enlist in the military.

Having stated this, there continued to be a number of interesting patterns of change among particular subgroups. The data suggest that responses to the war may have been quite different for the younger and older males. For the 16-18 year-old males, the realities of war appears to have brought home the dangers of serving in the military, resulting in decreased propensity levels. These declines were most evident for the Services that had the most prominent roles in the Gulf War -- the Air Force, the Army, and the Marine Corps. In contrast, the war may have generated more interest in joining the military for the older groups of males (19-21 year-olds and 22-24 year-olds). These groups showed increasing interest in military enlistment as the intensity of the war increased from the Desert Shield build-up through the Desert Storm attacks.

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# APPENDIX A

# CEDS/YATS III: SURVEY BACKGROUND AND METHODOLOGY

# CEDS/YATS III: SURVEY BACKGROUND AND METHODOLOGY

YATS began in the Fall of 1975 as a relatively modest telephone survey of young males. Since that time, YATS has evolved into a complex survey of males and females which has become the DoD's principal source of information regarding the propensity of the military-aged population to join the military. Over the years, YATS has maintained its focus on capturing the attitudes and experiences of a national probability sample of young males and females who have not previously served in the military. While these core aspects of YATS have remained stable, over time, gradual changes have been introduced in specific aspects of its methodology, sampling frame, and administrative procedures. For example, Waves 1 through 10 (Fall 1975 - Spring 1980) of YATS were conducted as semi-annual surveys of approximately 5,200 young males aged 16-21. Beginning with Wave 11 (Fall 1980), YATS became an annual survey, and females and older males were added to the sampling frame.

Since its inception, YATS has used random digit dialing (RDD) techniques to locate respondents. In 1982 (Wave 13), the RDD sampling method was improved through the adoption of the standard Waksberg RDD procedure. Further methodological changes, made to YATS in 1983 (Wave 14), were substantial enough to rename the survey YATS II. At this time, a new contractor was retained to conduct the Wave 14 survey, and significant modifications in recruit market sample coverage, methodological rigor, and survey administration methods were implemented. While previous surveys were administered using traditional hard-copy instruments, in Wave 14, the use of Computer Assisted Telephone Interview (CATI) methods began. New sample adjustment weighting specifications were introduced in this wave as well.

### Communications and Enlistment Decision Studies - CEDS/YATS III

As valuable as YATS II has proven itself as a source of demographic and propensity information on the population of military-aged youth, there are significant areas of DoD interest that were not comprehensively addressed by the YATS II instrument. Specifically, detailed information allowing the comprehensive description and assessment of the recruiting marketplace (including the impact and effectiveness of advertising) was not gathered by YATS II.

In response to the need for additional data supporting the DoD's marketing, advertising, and recruiting goals, the Defense Manpower Data Center (DMDC) initiated a research program in 1989 entitled the Communications and Enlistment Decision Studies (CEDS). The CEDS program was designed to provide DoD with current

information on the military-age population, including:

- Attitudes, interests, values, and media habits of youth;
- Perceptions of the military generally, as well as particular Services;
- Awareness of enlistment incentives;
- The role played by advertising in the enlistment decision; and
- The role influencers play in the enlistment decision process.

Beginning with the Fall 1990 survey, CEDS has subsumed YATS II. To signal this expansion in survey scope, the Fall 1990 survey is referred to as CEDS/YATS III. It is important to note, however, that CEDS/YATS III continues to provide comparability with previous YATS projects, even while expanding its mission and scope. For example, CEDS/YATS III continues the YATS data series on enlistment propensity and other related attitudes that have been regularly collected since 1975.

### Fall 1990 Survey Overview

As in recent YATS II surveys, CEDS/YATS III administered a 30-minute telephone interview to approximately 10,000 youth nationally. The following sections provide a brief overview of the CEDS/YATS III survey instrument, sample population and selection, and data collection.

**The CEDS/YATS III Questionnaire.** The 1990 CEDS/YATS III questionnaire differs substantially from the 1989 YATS II instrument. New questions were included asking respondents about their media habits, perceptions of opportunities offered by military enlistment, and views and reactions to world events such as Desert Shield/Storm. Additionally, a new version of the active and Reserve propensity section was administered to a random half of the sample. This inclusion of new questions required the dropping of a number of questions contained in the prior instrument. Analysts wishing a complete accounting of the changes made to CEDS/YATS III should refer to the cross-reference contained in the CEDS/YATS III tabulation volume.

**Survey Sample Population.** The CEDS/YATS III sample universe was defined as 16-24 year-old youth living in the United States in households or non-institutionalized group homes with telephones. Excluded from the population were youth in the military, youth with prior military service, or youth currently in a Delayed Entry Program (DEP). Also excluded from the sample universe were individuals enrolled in postsecondary Reserve Officer's Training Corps (ROTC) programs; however, individuals enrolled in high school ROTC programs were not excluded, provided they met all other eligibility criteria.

This design differs from the 1989 YATS II design in two important respects. First, residents of Alaska and Hawaii were, for the first time, included in the sample frame. Second, individuals with three or more years of

college educational attainment were also included in the sample. The major consequence of these changes in the YATS sample frame is the inclusion of over one thousand individuals with three or more years of college in the survey data file.

**Sample Selection.** Selection of the CEDS/YATS III sample was accomplished in two stages: (1) cluster identification, and (2) household screening. Based upon design requirements and estimates generated from Census information, it was determined that 7,458 residential telephone clusters would be required for the Fall 1990 sample. During cluster identification, telephone numbers were generated, using the RDD methodology, and called to determine whether the telephone number was residential. If residential, the number was added to identified residential clusters. Otherwise, the number was discarded. This process continued until a sufficient number of residential clusters had been identified.

Following cluster identification, 17 additional numbers were generated within each cluster yielding a total of 126,786 telephone numbers to screen. (The original or "seed" cluster number was not used for survey purposes.) Screening identified 73,699 or 58 percent of these numbers as residential, and screeners were completed with 65,707 or 90 percent of households. Altogether, sample selection identified 8,087 households with eligible males.[1]

**Data Collection.** Data collection was also conducted in two stages: (1) pre-screening of telephone numbers and households to locate eligible youth, and (2) administration of the main survey. Pre-screening was conducted between November 15, 1990 and December 12, 1990. In this period, a total of 6,478 households with eligible youth were identified.

Interviews were administered (and remaining screening completed) from December 13, 1990 through February 7, 1991. In this period, a total of 9,797 interviews were completed. Table A-1 provides basic information on sample sizes as well as interview completion rates overall and by age and gender groups. As experience in recent YATS has shown, completion rates declined for the older age groups, regardless of gender.

Completion rates for this population were high enough to positively reflect upon the data collection effort, which included numerous attempts to locate respondents, and a concerted effort to overcome initial respondent refusals.

[1]Two points must be made regarding sample selection. First, selection focused upon males, as the selection of females at one-half the rate of males made their identification less problematic. Second, "eligible" at this stage of selection did not exclude youth in Delayed Entry Programs (DEP) or youth identified as 25 years of age. It was decided not to rely upon screener respondents for precise age or DEP participation information. Instead, this information was obtained from the respondent.

Table A-1. Survey Sample Sizes and Interview Completion Rates by Age and Gender Subgroups

| | Males | | | Females | | | Total |
|---|---|---|---|---|---|---|---|
| | 16-18 | 19-21 | 22-24 | 16-18 | 19-21 | 22-24 | |
| **Sample Size** | 3,223 | 3,126 | 2,498 | 1,680 | 1,750 | 1,449 | 13,726 |
| **Completed Interviews** | 2,487 | 2,191 | 1,685 | 1,268 | 1,202 | 964 | 9,797 |
| **Completion Rate** | 77.2 | 70.1 | 67.5 | 75.5 | 68.7 | 66.5 | 71.4 |

# APPENDIX B

# COMPARISON OF CEDS/YATS III AND YATS II PROPENSITY MEASUREMENTS

# COMPARISON OF CEDS/YATS III AND YATS II PROPENSITY MEASUREMENTS

Since its first administration in 1975, the YATS questionnaire has undergone continual revision in response to changes in the Department of Defense's (DoD) information needs. In 1990, with the beginning of CEDS/YATS III, major revisions were made to the YATS instrument. For example, new questions were added asking American youth about their media habits, perceptions of opportunities offered by the military, and views and reactions to world events such as Desert Shield and Desert Storm. One of the more significant changes to the survey instrument occurred in the section measuring enlistment propensity.

Unlike previous YATS, the Fall 1990 CEDS/YATS III instrument contained alternative versions of the propensity section. One-half of the sample received the propensity section as it appeared in the 1989 administration of YATS II. The other half of the sample was administered a new propensity section developed expressly for the Fall 1990 administration. The new version was developed to be a shorter, more streamlined propensity section. Although each section contained the same general and Service-specific propensity questions, they differed in the placement of propensity questions within sections, as well as the context within which questions were placed. This appendix examines the estimates produced by the two versions. Specifically, this section evaluates whether the two sections yielded essentially the same estimates. Based upon findings, this appendix also provides analysts with recommendations regarding the analysis of propensity from the Fall 1990 CEDS/YATS III survey.

An extensive series of comparisons were made to determine the effects of the two propensity versions upon the measurement of active and Reserve component propensity. Following an overview of the differences between the two propensity versions, these comparisons are presented. Finally, in the last section of this appendix, we present our understanding of the reasons for the findings, as well as recommendations regarding use of the alternative versions of propensity for analysis purposes.

## Measuring Propensity - YATS II and YATS III Versions

The two versions of the propensity sections administered during the Fall 1990 CEDS/YATS III are summarized in Table B-1. We have labeled the versions YATS II (referring to the version administered during YATS II 1989) and YATS III (the new version introduced during CEDS/YATS III, Fall

Table B-1. YATS iI and YATS III Propensity Versions

| | YATS II Propensity | | YATS III Propensity |
|---|---|---|---|
| Q501. | First, how likely is it that you will be working as a (waitress in a restaurant/laborer in construction)? | Q503. | Now, I'd like to ask you how likely it is that you will be serving in the military in the next few years. |
| Q502. | How likely is it that you will be working at a desk in a business office? | Q509. | How likely is it that you will be serving on active duty in the Coast Guard? |
| Q503. | How likely is it that you will be serving in the military? | Q510. | How likely is it that you will be serving on active duty in the Army? |
| Q504. | How likely is it that you will be working as a (saleswoman/salesman)? | Q511. | How likely is it that you will be serving on active duty in the Air Force? |
| Q505. | How likely is it that you will be serving in the National Guard? | Q512. | How likely is it that you will be serving on active duty in the Marine Corps? |
| Q506. | Is that the Air National Guard, or the Army National Guard? | Q513. | How likely is it that you will be serving on active duty in the Navy? |
| Q507. | How likely is it that you will be serving in the Reserves? | | There are ways to serve in the military that allow you to stay in your hometown area and have a regular full-time job or go to school. If you enlisted in a military Reserve or National Guard unit, you could serve and be paid for one weekend per month and two weeks of additional training each year. Of course, if a national emergency or local disaster occurred, you could be called up for active duty. With this in mind . . . |
| Q508. | Is that the Air Force Reserve, the Army Reserve, the Coast Guard Reserve, the Marine Corps Reserve, or the Naval Reserve? | Q505. | How likely is it that you will be serving in the National Guard? |
| R582. | Is there a National Guard or Reserve unit located close enough to you for you to join? | Q506. | Is that the Air National Guard or the Army National Guard? |
| R566. | What service would that be? | Q507. | How likely is it that you will be serving in the Reserves? |
| Q509. | How likely is it that you will be serving on active duty in the Coast Guard? | Q508. | Is that the Air Force Reserve, or the Army Reserve, the Coast Guard Reserve, the Marine Corps Reserve, or the Naval Reserve? |
| Q510. | How likely is it that you will be serving on active duty in the Army? | Q507A. | How likely is it that you will be serving the (Randomly chosen response category from Q506 or Q508)? |

Table B-1. YATS II and YATS III Propensity Versions (continued)

| | YATS II Propensity | | YATS III Propensity |
|---|---|---|---|
| Q511. | How likely is it that you will be serving on active duty in the Air Force? | R582. | Is there a National Guard or Reserve unit located close enough to you for you to join? |
| Q512. | How likely is it that you will be serving on active duty in the Marine Corps? | R566. | What service would that be? |
| Q513. | How likely is it that you will be serving on active duty in the Navy? | Q520. | You mentioned that you might serve in more than one military service. Which service are you most likely to serve in? |
| Q514. | Now, how likely is it that you will be going to college? | Q521. | If you were to join the military service, how soon do you think you would join? |
| Q515. | How likely is it that you will be going to vocational or technical school? | Q525. | Before we talked today, had you ever considered the possibility of joining the military? |
| Q516. | How likely is it that you will a be full-time homemaker? | Q526. | What are the main reasons you would consider joining the military? |
| Q520. | You mentioned that you might serve in more than one military service. Which service are you most likely to serve in? | Q527. | If you were to enlist, do you think you would serve a single tour of duty, about 4 years? Or would you plan on making military service your career? |
| Q521. | If you were to join the military service, how soon do you think you would join? | Q528. | What is the main reason you would not consider enlisting in the military service? |
| Q525. | Before we talked today, had you ever considered the possibility of joining the military? | | |
| Q526. | What are the main reasons you would consider joining the military? | | |
| Q527. | If you were to enlist, do you think you would serve a single tour of duty, about 4 years? Or would you plan on making military service your career? | | |
| Q528. | What is the main reason you would not consider enlisting in the military service? | | |

1990).[1] This table presents the YATS II and YATS III sections in the order in which questions were presented to respondents. Where needed for establishing context, introductory material is included.

As Table B-1 demonstrates, the same Service-specific and general enlistment propensity questions were used in both versions of this section. The major differences between the versions are in overall section length and in the order and context of question presentation. The YATS III propensity section was the shorter of the two. This section contained 19 questions while the YATS II version contained 24 questions. There were, however, 18 questions common to both propensity versions. True to its purpose as a streamlined version of the propensity section, the YATS III section took less time to administer than the YATS II version. The average difference in time-to-complete, though, averaged less than one minute.

In the two versions of the propensity sections, the order of presentation for the active and Reserve component questions were reversed. The YATS II version begins military propensity questions by asking a generalized propensity question and then asks the Reserve/Guard questions (i.e., Q503 then Q505, Q506, Q507, Q508, R582, and R566). In contrast, following the generalized propensity question, the YATS III version asks the active component propensity questions (i.e., Q503 then Q509, Q510, Q511, Q512, and Q513) before asking Reserve component questions. The final group of military-specific questions (i.e., Q520, Q521, Q525, Q526, Q527, and Q528) are, in each version, asked in order as the final questions in the sections.

Besides a reversal in the ordering of active and Reserve component questions, the two versions also differ in the contexts within which the questions were asked. Most propensity questions in the YATS II version were nested in the sense of being surrounded or introduced by other questions asking about civilian opportunities or activities. These questions accounted for the greater length of the YATS II version. The shorter YATS III version, however, included a lengthy introduction to the Reserve component questions. The purpose of this introduction was to prompt a more informed response to Reserve component questions as it was felt that not all respondents were sufficiently aware of these Military Service options.

In the following sections, we consider the effects of these questionnaire changes on the measurement of active and Reserve component propensity and whether YATS II and YATS III responses can be combined for analysis purposes.

[1]The YATS II version was administered to a total of 4,852 respondents and the YATS III version to 4,945 respondents. In this appendix, however, tables are based upon the YATS II sample frame (i.e., respondents residing in Alaska or Hawaii or having three or more years of college education are excluded). Consequently, the tables are based upon 3,959 YATS II and 4,015 YATS III respondents.

### Comparing Propensity Measures - YATS II and YATS III Versions

Over 150 statistical comparisons were made between YATS II and YATS III propensity estimates. As random half-samples were assigned to each for administration, any differences in measurement were assumed due to the versions themselves, not other artifacts. The active and Reserve Component comparisons are presented in Tables B-2 through B-19. Each table reports positive composite and Service-specific propensity as stated by YATS II and YATS III respondents.[2] Total sample results are presented first; then respondents are further subdivided by gender, gender and age groups, gender and ethnicity, estimated AFQT group (for males only), and gender and region of the country.

It should be noted that a number of tables contain missing entries. Standard error estimates were not reported when the number of respondents upon which an estimate would be based was less than twenty. It was decided that estimates based upon less than twenty individuals was too unreliable to use for comparative purposes. We will discuss the active component tables first.

**Active Propensity.** Tables B-2 through B-10 present composite active and Service-specific YATS II and YATS III propensity estimates. The tables present estimates for the total YATS population as well for several population subgroups defined on the basis of gender, age, and other demographic characteristics. In all, over one hundred statistical comparisons are made in these tables. A total of four of the comparisons were judged statistically significant.

No pattern is discerned in these differences. A review of these findings has, therefore, led to the following general conclusions regarding YATS II and YATS III measurement of active propensity:

- No difference is found in the measurement of propensity, by version, for the total YATS population;
- No difference is found in the measurement of propensity, by version, for males or females;
- No difference is found in the measurement of propensity, by version, among age/gender/ethnicity groups; and
- No difference is found in the measurement of propensity, by version, for gender/region groups.

The number of statistically significant differences appearing in Tables B-2 through B-10 is consistent with the hypothesis of no difference at the $p=.05$ level (i.e., five

[2]Composite active propensity is reported as the most positive response to questions Q510, Q511, Q512, and Q513. Positive propensity is defined as at least one response to these four questions as "Definitely" or Probably" likely to be serving on active duty in the (Service). If none of the Service-specific questions elicits a positive response, composite active propensity is coded as negative. Composite Reserve propensity is measured similarly with the specific questions used being Q505 and Q507. Service-specif propensity is directly measured from the root question.

Table B-2. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity by Propensity Version

| | YATS II[a] Propensity | | YATS III[b] Propensity | | Difference | |
|---|---|---|---|---|---|---|
| Composite | 19.8 | (0.8) | 20.4 | (0.7) | 0.6 | (1.2) |
| Army | 9.9 | (0.5) | 10.0 | (0.6) | 0.1 | (0.8) |
| Navy | 7.0 | (0.4) | 7.2 | (0.5) | 0.2 | (0.6) |
| Air Force | 9.5 | (0.6) | 9.8 | (0.5) | 0.3 | (0.9) |
| Marine Corps | 6.8 | (0.3) | 6.1 | (0.4) | -0.7 | (0.6) |
| Coast Guard | 5.2 | (0.4) | 5.1 | (0.4) | -0.1 | (0.7) |

Notes:
- Tabled values are percentages with standard errors in parentheses
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based upon 3,959 interviews.
[b]Estimates are based upon 4,015 interviews.

Source: Q509-Q513, CPYATS82.

Table B-3. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity by Propensity Version and Respondent Gender

| | Total Sample | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 19.8 (0.8) | 20.4 (0.7) | 0.6 (1.2) | 29.4 (1.0) | 28.8 (0.8) | -0.6 (1.4) | 10.4 (1.0) | 12.5 (0.9) | 2.1 (1.4) |
| Army | 9.9 (0.5) | 10.0 (0.6) | 0.1 (0.8) | 15.0 (0.7) | 14.2 (0.7) | -0.8 (1.0) | 4.9 (0.7) | 6.0 (0.8) | 1.2 (1.0) |
| Navy | 7.0 (0.4) | 7.2 (0.5) | 0.2 (0.6) | 10.1 (0.7) | 10.6 (0.7) | 0.6 (1.1) | 4.0 (0.7) | 4.0 (0.6) | (--) (--) |
| Air Force | 9.5 (0.6) | 9.8 (0.5) | 0.3 (0.9) | 13.6 (0.8) | 13.0 (0.6) | -0.6 (1.1) | 5.5 (0.9) | 6.9 (0.7) | 1.3 (1.3) |
| Marine Corps | 6.8 (0.3) | 6.1 (0.4) | -0.7 (0.6) | 10.9 (0.6) | 10.0 (0.7) | -0.8 (1.0) | 2.8 (0.4) | 2.4 (0.5) | -0.4 (0.6) |
| Coast Guard | 5.2 (0.4) | 5.1 (0.4) | -0.1 (0.7) | 8.1 (0.8) | 8.0 (0.6) | -0.1 (1.0) | 2.4 (0.6) | 2.3 (0.4) | -0.1 (0.8) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based on 3,959 interviews.
[b]Estimates are based on 4,015 interviews.
[c]Estimates are based on 2,598 interviews.
[d]Estimates are based on 2,631 interviews.
[e]Estimates are based on 1,361 interviews.
[f]Estimates are based on 1,384 interviews.

(--) Indicates a cell size of less than 20 respondents; estimate is not reliable.

Source: Q402, Q509-1513, CPYATS82.

Table B-4. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity Among Males by Propensity Version and Respondent Age

| | 16-18 | | | 19-21 | | | 22-24 | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 38.3 (1.3) | 36.6 (1.6) | -1.7 (2.2) | 24.5 (1.9) | 25.7 (1.7) | 1.2 (2.5) | 22.1 (2.1) | 21.2 (1.8) | -0.9 (3.1) |
| Army | 17.5 (1.1) | 16.7 (1.2) | -0.8 (1.7) | 14.4 (1.4) | 13.8 (1.5) | -0.5 (2.1) | 12.0 (1.4) | 11.1 (1.3) | -0.9 (1.8) |
| Navy | 12.8 (1.1) | 14.8 (1.2) | 2.0 (1.7) | 7.8 (1.1) | 9.2 (1.2) | 1.4 (1.6) | 8.7 (1.3) | 6.3 (1.3) | -2.4 (2.0) |
| Air Force | 19.0 (1.3) | 17.5 (1.2) | -1.5 (1.8) | 10.0 (1.5) | 11.6 (1.4) | 1.6 (1.9) | 9.8 (1.7) | 7.9 (0.9) | -1.9 (2.0) |
| Marine Corps | 14.2 (1.1) | 11.1 (0.9) | -3.1*(1.6) | 8.0 (0.9) | 9.8 (1.5) | 1.8 (1.7) | 9.4 (1.3) | 8.7 (1.3) | -0.7 (1.9) |
| Coast Guard | 9.8 (1.0) | 10.7 (1.1) | 0.9 (1.6) | 6.0 (1.0) | 5.4 (0.9) | -0.5 (1.4) | 8.2 (1.6) | 7.3 (1.4) | -0.9 (2.2) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based on 1,224 interviews.
[b]Estimates are based on 1,242 interviews.
[c]Estimates are based on 864 interviews.
[d]Estimates are based on 866 interviews.
[e]Estimates are based on 510 interviews.
[f]Estimates are based on 523 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

Source: Q402, Q509-Q513, CPYATS82, CALCAGE.

Table B-5. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity Among Females by Propensity Version and Respondent Age

| | 16-18 | | | 19-21 | | | 22-24 | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 14.5 (1.5) | 16.7 (1.8) | 2.2 (2.1) | 7.7 (2.2) | 10.4 (1.4) | 2.7 (2.7) | 7.8 (1.8) | 9.8 (2.1) | 2.1 (2.9) |
| Army | 7.7 (1.1) | 7.2 (1.0) | -0.5 (1.6) | 3.1 (--) | 5.2 (1.2) | 2.0 (--) | 3.0 (--) | 5.7 (--) | 2.7 (--) |
| Navy | 5.3 (0.9) | 5.3 (1.0) | 0.0 (1.4) | 3.6 (--) | 3.5 (--) | 0.0 (--) | 2.7 (--) | 2.9 (--) | 0.3 (--) |
| Air Force | 7.2 (1.1) | 9.3 (1.2) | 2.1 (1.7) | 5.2 (1.6) | 5.0 (1.0) | -0.3 (1.9) | 3.7 (--) | 6.1 (--) | 2.5 (--) |
| Marine Corps | 5.0 (0.9) | 3.9 (1.0) | -1.1 (1.4) | 1.5 (--) | 1.7 (--) | 0.3 (--) | 1.4 (--) | 1.4 (--) | 0.0 (--) |
| Coast Guard | 3.7 (0.8) | 2.4 (--) | -1.2 (--) | 2.2 (--) | 1.8 (--) | -0.4 (--) | 1.0 (--) | 2.9 (--) | 1.9 (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based on 642 interviews.
[b]Estimates are based on 618 interviews.
[c]Estimates are based on 426 interviews.
[d]Estimates are based on 457 interviews.
[e]Estimates are based on 293 interviews.
[f]Estimates are based on 309 interviews.

(--) Indicates a cell size of less than 20 respondents; estimate is not reliable.

Source: Q402, Q509-Q513, CPYATS82, CALCAGE.

Table B-6. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity Among Males by Propensity Version and Racial Background

| | White | | | Black | | | Other | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 27.0 (1.0) | 26.8 (0.9) | -0.2 (1.4) | 39.3 (3.2) | 38.2 (3.4) | -1.1 (5.3) | 37.6 (3.5) | 37.4 (3.2) | -0.2 (4.4) |
| Army | 12.6 (0.7) | 12.0 (0.7) | -0.6 (0.9) | 26.4 (3.2) | 26.0 (3.1) | -0.4 (4.7) | 21.1 (3.2) | 16.9 (2.6) | -4.2 (3.6) |
| Navy | 8.6 (0.7) | 10.1 (0.7) | 1.5 (1.2) | 16.9 (2.7) | 14.4 (2.2) | -2.5 (3.7) | 12.8 (2.7) | 11.0 (2.0) | 1.8 (3.1) |
| Air Force | 13.2 (0.9) | 11.8 (0.6) | -1.3 (1.2) | 14.3 (2.4) | 17.3 (2.9) | 3.0 (3.7) | 17.9 (3.3) | 21.7 (3.0) | 3.8 (4.7) |
| Marine Corps | 9.4 (0.7) | 9.0 (0.6) | -0.4 (1.0) | 17.2 (1.7) | 15.3 (2.7) | -1.9 (3.0) | 15.4 (2.2) | 13.1 (2.5) | -2.3 (3.5) |
| Coast Guard | 6.8 (0.7) | 7.4 (0.7) | 0.6 (1.0) | 13.7 (2.5) | 10.2 (2.2) | -3.5 (3.4) | 12.4 (2.9) | 10.6 (2.6) | -1.8 (3.6) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.
- Some cases had missing data, therefore the number of interviews on which estimates are based will not sum to total number of interviews.

[a]Estimates are based on 2,116 interviews.
[b]Estimates are based on 2,124 interviews.
[c]Estimates are based on 220 interviews.
[d]Estimates are based on 215 interviews.
[e]Estimates are based on 235 interviews.
[f]Estimates are based on 265 interviews.

Source: Q402, Q509-Q513, Q714, CPYATS82.

Table B-7. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity Among Females by Propensity Version and Racial Background

| | White | | | Black | | | Other | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 8.2 (0.9) | 9.8 (0.9) | 1.5 (1.2) | 19.6 (2.9) | 25.4 (4.5) | 5.8 (5.6) | 12.2 (3.4) | 21.9 (5.0) | 9.7 (6.5) |
| Army | 3.1 (0.5) | 4.4 (0.8) | 1.3 (0.7) | 13.1 (3.1) | 14.2 (3.2) | 1.0 (3.9) | 3.7 (--) | 11.6 (--) | 7.9 (--) |
| Navy | 3.0 (0.5) | 3.8 (0.5) | 0.7 (0.7) | 7.6 (--) | 5.0 (--) | -2.6 (--) | 3.8 (--) | 3.2 (--) | -0.6 (--) |
| Air Force | 4.4 (0.8) | 4.9 (0.7) | 0.5 (1.0) | 10.4 (--) | 16.9 (3.8) | 6.5 (5.0) | 7.6 (--) | 11.0 (--) | 3.4 (--) |
| Marine Corps | 1.8 (0.4) | 1.7 (--) | -0.1 (--) | 7.8 (--) | 6.1 (--) | -1.7 (--) | 2.6 (--) | 3.3 (--) | 0.7 (--) |
| Coast Guard | 2.1 (0.6) | 1.7 (--) | -0.3 (--) | 4.0 (--) | 5.8 (--) | 1.7 (--) | 2.7 (--) | 2.3 (--) | -0.3 (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.
- Some cases had missing data, therefore the number of interviews on which estimates are based will not sum to total number of interviews.

[a]Estimates are based on 1,064 interviews.
[b]Estimates are based on 1,110 interviews.
[c]Estimates are based on 161 interviews.
[d]Estimates are based on 148 interviews.
[e]Estimates are based on 132 interviews.
[f]Estimates are based on 127 interviews.

(--) Indicates a cell size of less than 20 respondents; estimate is not reliable.

Source: Q402, Q509-Q513, Q714, CPYATS82.

Table B-8. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity for Males by Propensity Version and AFQT Score

| | YATS II PROPENSITY | | | | YATS III PROPENSITY | | | |
|---|---|---|---|---|---|---|---|---|
| | Low AFQT[a] | | High AFQT[b] | | Low AFQT[c] | | High AFQT[d] | |
| Composite | 39.6 | (1.7) | 21.2 | (1.2) | 35.1 | (1.7) | 23.7 | (1.3) |
| Army | 22.3 | (1.4) | 9.0 | (0.8) | 20.5 | (1.3) | 9.0 | (1.1) |
| Navy | 13.9 | (1.3) | 7.0 | (0.6) | 13.5 | (1.2) | 8.3 | (0.7) |
| Air Force | 16.6 | (1.2) | 11.1 | (0.9) | 15.1 | (1.1) | 11.2 | (0.9) |
| Marine Corps | 16.7 | (1.2) | 6.1 | (0.6) | 14.3 | (1.4) | 6.5 | (0.8) |
| Coast Guard | 11.9 | (1.5) | 5.0 | (0.6) | 9.6 | (1.0) | 6.7 | (0.8) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 1,002 interviews.
[b]Estimates are based on 1,596 interviews.
[c]Estimates are based on 1,013 interviews.
[d]Estimates are based on 1,618 interviews.

Source: Q402, Q509-Q513, CPYATS82, AFQTHIGP, AFQTLOGP.

Table B-9. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity for Males by Propensity Version and Region

| | YATS II PROPENSITY | | | | YATS III PROPENSITY | | | |
|---|---|---|---|---|---|---|---|---|
| | Northeast[a] | North Central[b] | South[c] | West[d] | Northeast[e] | North Central[f] | South[g] | West[h] |
| Composite | 26.5 (2.4) | 25.5 (1.9) | 36.0 (2.3) | 24.9 (2.3) | 22.7 (2.0) | 24.5 (2.2) | 33.6 (1.4) | 31.8 (2.4)* |
| Army | 11.2 (1.8) | 13.7 (1.7) | 19.6 (1.8) | 11.5 (1.8) | 11.7 (1.5) | 9.9 (1.4) | 18.7 (1.3) | 13.8 (1.7) |
| Navy | 9.1 (1.3) | 8.5 (1.2) | 12.9 (1.5) | 7.4 (1.6) | 9.0 (1.3) | 8.5 (1.2) | 12.3 (1.4) | 12.1 (1.6)* |
| Air Force | 11.9 (1.7) | 11.0 (1.3) | 15.9 (1.5) | 14.4 (1.8) | 9.4 (1.3) | 11.3 (1.4) | 14.4 (1.0) | 16.5 (2.2) |
| Marine Corps | 11.1 (1.4) | 9.6 (1.2) | 12.6 (1.4) | 8.9 (1.7) | 7.1 (1.3)* | 7.8 (1.4) | 13.1 (1.3) | 10.1 (1.7) |
| Coast Guard | 9.3 (1.7) | 5.6 (1.0) | 9.1 (1.5) | 8.6 (1.6) | 6.4 (1.1) | 7.3 (1.3) | 8.3 (0.9) | 10.2 (1.9) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 537 interviews.
[b]Estimates are based on 703 interviews.
[c]Estimates are based on 874 interviews.
[d]Estimates are based on 484 interviews.
[e]Estimates are based on 550 interviews.
[f]Estimates are based on 653 interviews.
[g]Estimates are based on 897 interviews.
[h]Estimates are based on 531 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

Source: Q402, Q509-Q513, CPYATS82, REGION.

Table B-10. Fall 1990 CEDS/YATS III - Positive Composite Active and Service-Specific Propensity for Females by Propensity Version and Region

| | YATS II PROPENSITY | | | | YATS III PROPENSITY | | | |
|---|---|---|---|---|---|---|---|---|
| | Northeast[a] | North Central[b] | South[c] | West[d] | Northeast[e] | North Central[f] | South[g] | West[h] |
| Composite | 7.7 (2.0) | 11.4 (1.9) | 10.0 (1.6) | 12.8 (2.5) | 8.3 (1.9) | 8.7 (1.4) | 16.5 (2.1)* | 15.1 (2.7) |
| Army | 2.5 (--) | 4.5 (--) | 5.1 (1.2) | 7.6 (--) | 4.2 (--) | 2.9 (--) | 8.8 (1.5) | 7.4 (--) |
| Navy | 1.2 (--) | 3.7 (--) | 4.5 (1.4) | 6.4 (--) | 2.4 (--) | 3.3 (--) | 4.0 (--) | 7.0 (--) |
| Air Force | 4.5 (--) | 6.6 (1.5) | 4.6 (1.0) | 7.3 (--) | 3.5 (--) | 4.0 (--) | 9.8 (1.7)* | 9.3 (2.1) |
| Marine Corps | 1.1 (--) | 3.4 (--) | 2.6 (--) | 4.3 (--) | 2.2 (--) | 1.8 (--) | 2.5 (--) | 3.4 (--) |
| Coast Guard | 1.9 (--) | 2.0 (--) | 1.4 (--) | 5.8 (--) | 2.3 (--) | 0.6 (--) | 2.5 (--) | 4.6 (--) |

Notes: ▪ Tabled values are percentages with standard errors in parentheses.
▪ CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 537 interviews.
[b]Estimates are based on 703 interviews.
[c]Estimates are based on 874 interviews.
[d]Estimates are based on 484 interviews.
[e]Estimates are based on 550 interviews.
[f]Estimates are based on 653 interviews.
[g]Estimates are based on 897 interviews.
[h]Estimates are based on 531 interviews.

*YATS II and YATS III propensity differences were statistically significant at the $p = .05$ level.

(--) Indicates a cell size of less than 20 respondents; estimate is not reliable.

Source: Q402, Q509-Q513, CPYATS82, REGION.

significant differences for every 100 comparisons). In conclusion, it is evident that both the YATS II and YATS III propensity versions yield the same measure, despite ordering and nesting.

**Reserve Propensity.** Tables B-11 through B-19 present the comparisons made for Reserve component propensity by version. As was the case for active component comparisons, Reserve component comparisons were made for the total sample and then selected demographic/market subgroups. Again, the pattern of findings is quite clear. The conclusion drawn, however, is quite different. Of the more than fifty significance tests performed, twenty-eight yielded statistically significant differences between the YATS II and YATS III estimates. The pattern and context of findings lead to the following general observations:

- YATS III estimates of composite Reserve propensity were significantly higher than corresponding YATS II estimates; and
- Differences in Reserve propensity are primarily a function of elevated YATS III propensity estimates for the National Guard.

In this series of tables, several interesting patterns of differences between YATS II and YATS III estimates appear. The most important differences, however, are the consistently higher composite and National Guard propensity estimates provided by the YATS III version of the propensity section. Among the significant differences, it appears as though certain gender/ethnicity subgroups exhibit more differences than others. These differences, however, are felt to be more a function of sample size than anything else. The real differences in component propensity are between propensity versions, not sample subgroups.

## Summary and Recommendations

This appendix has documented the differences in two versions of the propensity section used during the Fall 1990 CEDS/YATS III administration. The primary differences between the two versions were in the ordering of questions and the presence or absence of questions or introductory statements at the beginning of each group of active or Reserve component propensity questions.

It was found that, for the measurement of active propensity, differences in ordering and introductory questions between the two versions had no effect upon respondent propensity. Overall and by gender, age, and other demographic/market subgroups, propensity estimates were the same for the two versions.

As a consequence of determining that there is no difference in the two versions of the active propensity questions, **it is recommended that responses from both versions be combined when performing analyses.** No distortions to estimated propensity will be introduced by this combining of responses and statistical power will be significantly enhanced.

Table B-11. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity by Propensity Version

| | YATS II[a] Propensity | YATS III[b] Propensity | Difference |
|---|---|---|---|
| Composite | 14.4 (0.6) | 17.9 (0.7) | 3.5* (1.0) |
| National Guard | 8.7 (0.6) | 13.7 (0.6) | 5.0* (0.9) |
| Reserves | 10.9 (0.6) | 12.5 (0.6) | 1.6 (0.9) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based upon 3,959 interviews.
[b]Estimates are based upon 4,015 interviews.

*YATS II and YATS III differences were statistically significant at the p=.05 level.

Source: Q505, Q507, RSVNG84.

Table B-12. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity by Propensity Version and Respondent Gender

| | Total Sample | | | Males | | | Females | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 14.4 (0.6) | 17.9 (0.7) | 3.4*(1.0) | 21.3 (0.9) | 24.1 (1.0) | 2.8 (1.6) | 7.6 (0.8) | 11.9 (0.9) | 4.3*(1.2) |
| National Guard | 8.7 (0.6) | 13.7 (0.6) | 5.0*(0.9) | 12.7 (1.0) | 18.2 (0.7) | 5.5*(1.4) | 4.7 (0.6) | 9.5 (0.9) | 4.8*(1.2) |
| Reserves | 10.9 (0.6) | 12.5 (0.6) | 1.6 (0.9) | 16.5 (0.8) | 17.0 (1.0) | 0.5 (1.4) | 5.5 (0.8) | 8.2 (0.8) | 2.7*(1.1) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based on 3,959 interviews.
[b]Estimates are based on 4,015 interviews.
[c]Estimates are based on 2,598 interviews.
[d]Estimates are based on 2,631 interviews.
[e]Estimates are based on 1,361 interviews.
[f]Estimates are based on 1,384 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

Source: Q402, Q505, Q507, PSVNG84.

Table B-13. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity Among Males by Propensity Version and Respondent Age

| | 16-18 | | | 19-21 | | | 22-24 | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 26.2 (1.6) | 30.9 (1.3) | 4.7*(2.1) | 18.4 (1.4) | 22.5 (2.1) | 4.1 (2.3) | 17.4 (2.1) | 16.0 (1.8) | -1.4 (2.6) |
| National Guard | 16.2 (1.3) | 24.0 (1.1) | 7.7*(1.8) | 9.6 (1.3) | 15.9 (1.7) | 6.3*(2.3) | 11.2 (1.8) | 12.4 (1.5) | 1.2 (2.0) |
| Reserves | 19.6 (1.5) | 19.4 (1.3) | -0.3 (2.2) | 15.0 (1.4) | 17.4 (2.0) | 2.3 (2.2) | 13.7 (2.2) | 13.0 (1.6) | -0.6 (2.5) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based on 1,224 interviews.
[b]Estimates are based on 1,242 interviews.
[c]Estimates are based on 864 interviews
[d]Estimates are based on 866 interviews.
[e]Estimates are based on 510 interviews.
[f]Estimates are based on 523 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p = .05 level.

Source: Q402, Q505, Q507, RSVNG84, CALCAGE.

Table B-14. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity Among Females by Propensity Version and Respondent Age

| | 16-18 | | | 19-21 | | | 22-24 | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 10.4 (1.3) | 16.1 (2.0) | 5.8*(2.3) | 6.8 (1.6) | 8.9 (1.5) | 2.1 (2.1) | 4.8 (--) | 10.5 (1.9) | 5.7 (--) |
| National Guard | 6.2 (0.9) | 13.0 (2.0) | 6.8*(2.1) | 4.9 (--) | 7.5 (1.4) | 2.5 (2.0) | 2.6 (--) | 7.7 (1.5) | 5.1 (--) |
| Reserves | 8.2 (1.3) | 9.5 (1.5) | 1.2 (2.0) | 4.1 (--) | 5.9 (1.3) | 1.8 (1.7) | 3.3 (--) | 9.6 (1.8) | 6.3 (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.

[a]Estimates are based on 642 interviews.
[b]Estimates are based on 618 interviews.
[c]Estimates are based on 426 interviews.
[d]Estimates are based on 457 interviews.
[e]Estimates are based on 293 interviews.
[f]Estimates are based on 309 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

(--) Indicates cell size of less than 20 respondents; standard error estimate is not reliable.

Source: Q402, Q505, Q507, RSVNG84, CALCAGE.

Table B-15. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity Among Males by Propensity Version and Racial Background

| | White | | | Black | | | Other | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 18.2 (0.8) | 21.5 (0.8) | 3.4•(1.2) | 36.0 (3.3) | 36.2 (3.9) | 0.2 (5.9) | 28.8 (4.7) | 32.7 (3.4) | 3.9 (6.0) |
| National Guard | 10.4 (0.7) | 16.3 (0.6) | 5.9•(1.0) | 24.0 (3.6) | 26.5 (3.0) | 2.5 (5.4) | 18.1 (2.9) | 25.8 (3.2) | 7.7 (4.2) |
| Reserves | 13.9 (0.8) | 14.8 (0.8) | 0.9 (1.1) | 28.4 (3.0) | 27.2 (4.3) | -1.2 (5.9) | 23.8 (4.6) | 23.7 (2.9) | 0.0 (5.8) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.
- Some cases had missing data, therefore the number of interviews on which estimates are based will not sum to total number of interviews.

[a]Estimates are based on 2,116 interviews.
[b]Estimates are based on 2,124 interviews.
[c]Estimates are based on 220 interviews.
[d]Estimates are based on 215 interviews.
[e]Estimates are based on 235 interviews.
[f]Estimates are based on 265 interviews.

•YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

Source: Q402, Q505, Q507, Q714, RSVNG84.

Table B-16. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity Among Females by Propensity Version and Racial Background

| | White | | | Black | | | Other | | |
|---|---|---|---|---|---|---|---|---|---|
| | YATS II[a] | YATS III[b] | Diff | YATS II[c] | YATS III[d] | Diff | YATS II[e] | YATS III[f] | Diff |
| Composite | 6.0 (0.8) | 9.7 (0.8) | 3.7*(1.2) | 13.3 (2.9) | 21.4 (3.5) | 8.1 (4.4) | 11.9 (--) | 24.6 (6.0) | 12.7 (--) |
| National Guard | 3.6 (0.7) | 7.5 (0.8) | 3.9*(1.1) | 9.5 (--) | 17.8 (3.4) | 8.2 (--) | 7.3 (--) | 20.5 (5.6) | 13.1 (--) |
| Reserves | 4.0 (0.6) | 6.4 (0.9) | 2.4*(1.0) | 11.7 (--) | 17.3 (3.2) | 5.6 (--) | 6.6 (--) | 12.6 (--) | 6.0 (--) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.
- Differences might not equal YATS II-YATS III due to rounding.
- Some cases had missing data, therefore the number of interviews on which estimates are based will not sum to total number of interviews.

[a]Estimates are based on 1,064 interviews.
[b]Estimates are based on 1,110 interviews.
[c]Estimates are based on 161 interviews.
[d]Estimates are based on 148 interviews.
[e]Estimates are based on 132 interviews.
[f]Estimates are based on 127 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

(--) Indicates a cell size of less than 20 respondents; estimate is not reliable.

Source: Q402, Q505, Q507, Q714, RSVNG84.

Table B-17. Fall 1990 CEDS/YATS III - Positive Composite Reserve and Reserve Component Propensity for Males by Propensity Version and AFQT Score

| | YATS II PROPENSITY | | | | YATS III PROPENSITY | | | |
|---|---|---|---|---|---|---|---|---|
| | Low AFQT[a] | | High AFQT[b] | | Low AFQT[c] | | High AFQT[d] | |
| Composite | 29.9 | (1.9) | 14.2 | (1.0) | 30.5 | (1.9) | 18.8 | (1.2)* |
| National Guard | 18.8 | (1.9) | 7.7 | (0.8) | 24.0 | (1.5)* | 13.4 | (1.0)* |
| Reserves | 23.5 | (1.6) | 10.8 | (0.9) | 21.8 | (2.1) | 13.0 | (1.2) |

Notes: ▪ Tabled values are percentages with standard errors in parentheses.
▪ CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 1,002 interviews.
[b]Estimates are based on 1,596 interviews.
[c]Estimates are based on 1,013 interviews.
[d]Estimates are based on 1,618 interviews.

*YATS II and YATS III differences were statistically significant at the p = .05 level.

Source: Q402, Q505, Q507, RSVNG84, AFQTLOGP, AFQTHIGP.

Table B-18. Fall 1990 CEDS/YATS III - Positive Composite Reserve Service-Specific Propensity for Males by Propensity Version and Region

| | YATS II PROPENSITY | | | | YATS III PROPENSITY | | | |
|---|---|---|---|---|---|---|---|---|
| | Northeast[a] | North Central[b] | South[c] | West[d] | Northeast[e] | North Central[f] | South[g] | West[h] |
| Composite | 20.5 (2.1) | 16.2 (1.6) | 28.0 (2.0) | 15.7 (2.0) | 18.5 (1.5) | 23.2 (1.5)* | 26.2 (1.5) | 27.4 (2.6)* |
| National Guard | 10.8 (2.2) | 10.6 (1.3) | 16.7 (2.0) | 9.6 (2.0) | 12.2 (1.5) | 17.8 (1.4)* | 20.8 (1.3) | 20.1 (2.2)* |
| Reserves | 16.6 (2.2) | 12.9 (1.5) | 21.2 (1.8) | 12.0 (1.8) | 13.8 (1.5) | 14.3 (1.6) | 18.8 (1.6) | 20.5 (2.8)* |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 537 interviews.
[b]Estimates are based on 703 interviews.
[c]Estimates are based on 874 interviews.
[d]Estimates are based on 484 interviews.
[e]Estimates are based on 550 interviews.
[f]Estimates are based on 653 interviews.
[g]Estimates are based on 897 interviews.
[h]Estimates are based on 531 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p=.05 level.

Source: Q402, Q505, Q507, RSVNG84, REGION.

Table B-19. Fall 1990 CEDS/YATS III - Positive Composite Reserve Service-Specific Propensity for Females by Propensity Version and Region

| | YATS II PROPENSITY | | | | YATS III PROPENSITY | | | |
|---|---|---|---|---|---|---|---|---|
| | Northeast[a] | North Central[b] | South[c] | West[d] | Northeast[e] | North Central[f] | South[g] | West[h] |
| Composite | 4.0 (--) | 9.0 (1.9) | 7.9 (1.3) | 9.1 (2.1) | 11.1 (2.1) | 11.2 (2.0) | 11.9 (1.8) | 14.2 (2.5) |
| National Guard | 1.5 (--) | 4.2 (--) | 4.8 (1.1) | 8.3 (2.1) | 7.9 (1.9) | 8.7 (1.9) | 9.9 (1.6)* | 11.8 (2.3) |
| Reserves | 1.9 (--) | 7.7 (1.8) | 5.5 (1.2) | 6.0 (--) | 8.6 (1.9) | 6.7 (1.5) | 8.4 (1.5) | 9.8 (2.0) |

Notes:
- Tabled values are percentages with standard errors in parentheses.
- CEDS/YATS III sample restricted to only include individuals within the YATS II sample frame.

[a]Estimates are based on 537 interviews.
[b]Estimates are based on 703 interviews.
[c]Estimates are based on 874 interviews.
[d]Estimates are based on 484 interviews.
[e]Estimates are based on 550 interviews.
[f]Estimates are based on 653 interviews.
[g]Estimates are based on 897 interviews.
[h]Estimates are based on 531 interviews.

*YATS II and YATS III propensity differences were statistically significant at the p = .05 level.

(--) Indicates a cell size of less than 20 respondents; estimate is not reliable.

Source: Q402, Q505, Q507, RSVNG84, REGION.

No such combining of responses is possible when considering Reserve component propensity. Although order did not appear to have an effect on propensity measurement, the introduction used in the YATS III version obviously did have an effect. This introduction, added to heighten respondent awareness of Reserve component opportunities, had the effect of increasing the estimated level of composite Reserve and National Guard propensity. In hindsight, this pattern of increase is understandable.

The characteristics stressed in this introduction tend to focus upon service in the National Guard (e.g., stay in hometown area, minimal time obligation for training, and **active duty in time of emergency or local disaster**). The introduction appears to have had the intended result of increasing awareness and the unintended consequence of disproportionately raising awareness of (or making attractive) the National Guard. This, in turn, had the effect of raising composite Reserve propensity as well.

Whether an aided measure of Reserve or National Guard propensity is better than an unaided measure may still be an open question. What is not at question, however, is the comparability between the YATS II and YATS III versions of Reserve propensity. These versions provide significantly different measures of propensity. Approximately half of the comparisons made between the versions proved to be statistically different. As a result, **analysts are advised not to combine YATS II and YATS III Reserve component propensity responses for analysis purposes**. Instead, **we recommend using only responses from the YATS II propensity version for analysis**. This last recommendation is made in order to help preserve continuity of propensity measurement with past YATS administrations.

# APPENDIX C

# CALCULATIONS OF POST-STRATIFICATION ADJUSTMENT FACTORS FOR THE 1989 YATS II SURVEY DATA

# CALCULATIONS OF POST-STRATIFICATION ADJUSTMENT FACTORS FOR THE 1989 YATS II SURVEY DATA

As noted in this report's introduction, the Fall 1990 CEDS/YATS III sample weighting methodology differed from that used in previous YATS surveys. Consequently, in order to establish comparability, the 1989 YATS II statistics reported in this document were produced following the application of an adjustment factor to the 1989 survey sample weights. This appendix provides a brief explanation of how these adjustment factors were calculated and applied.

## Design Differences - 1989 and 1990

Fundamental changes in the YATS survey design were made for CEDS/YATS III. As has been noted throughout this report, one change was the expansion of the sample frame to include youth with three or more years of college education, and residents of Alaska and Hawaii. This appendix discusses the implications of another design change -- changing sample survey precision requirements.

The survey sample and weighting designs for the 1989 and earlier YATS responded to precision requirements established for small area estimates. That is, design precision requirements were set by the size of the Management Unit Designators (MUDS) within which the YATS population was subdivided. In responding to these requirements, 1989 and earlier YATS sampling and weighting designs were developed to optimize these small area estimates.

In contrast, the 1990 CEDS/YATS III design requirements were stated in terms of national estimates. The sampling and weighting methodologies adopted, therefore, optimized the production of national, not small area, estimates. To accomplish this, the last stage of the sample weighting methodology applied post-stratification adjustments to bring sample totals in line with known Census totals (Morganstein and Fahimi, 1991b). This last adjustment was not applied to 1989 and earlier YATS survey adjustment weights. In order to establish comparability of results for this report, post-stratification adjustments were computed for the 1989 YATS II data and used when estimating the 1989 statistics presented in this report.

## Post-Stratification Adjustment of 1989 YATS II

The post-stratification adjustments of 1989 YATS II data were accomplished in four steps. These were:

- Divide the YATS II sample into mutually exclusive strata and estimate population totals for each stratum;

- Develop Census estimates of population total for each stratum;
- Calculate the ratio of Census to survey estimate for each stratum; and
- Multiply YATS II sample weights by appropriate stratum ratios when estimating sample statistics.

The sample was divided into eighteen strata defined by single year of age and gender. Within each stratum (e.g., 16 year-old males, 16 year-old females, etc.), population totals were estimated.

Census estimates of the corresponding stratum populations were taken from the 1989 Current Population Survey (CPS). These Census estimates were adjusted downward by excluding individuals with prior military service or currently serving in the military.

Table C-1 presents the post-stratification adjustments calculated as the ratio of Census to survey population estimates.

The 1989 YATS II statistics reported in this document were produced by forming a new weighting variable defined as the product of the 1989 YATS II weight (WINT) and the appropriate adjustment factor. This new weighting variable allowed the estimation of statistics comparable with those produced for the Fall 1990 CEDS/YATS III.

Table C-1. 1989 YATS II Post-Stratification Adjustment Factors

| | GENDER | |
|---|---|---|
| | Male | Female |
| AGE GROUP | Adjustment Factor | Adjustment Factor |
| 16 | 1.19114 | 1.22288 |
| 17 | 1.24990 | 1.22826 |
| 18 | 1.47995 | 1.80113 |
| 19 | 1.91608 | 2.00304 |
| 20 | 2.07082 | 2.26122 |
| 21 | 2.00634 | 2.10461 |
| 22 | 1.67777 | 2.10286 |
| 23 | 2.27653 | 2.33717 |
| 24 | 2.34217 | 2.28562 |

# APPENDIX D

# SUMMARY OF MAJOR DESERT SHIELD AND DESERT STORM EVENTS

# DESERT SHIELD: OVERVIEW OF MAJOR EVENTS

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **August** | | |
| **1-4** | ▪ Iraq invades Kuwait 8/2, continues to push toward Saudi Arabian border.<br>▪ US Navy dispatches battle group to Gulf.<br>▪ Iraqi government closes all ports and airports, bans travel, and cuts off all communication in Kuwait. | ▪ Emir of Kuwait and family flee to Saudi Arabia.<br>▪ US President bans trade with Iraq and freezes Iraqi and Kuwaiti assets.<br>▪ US Senate and House support Iraq embargo.<br>▪ Secretary of State Baker and Soviet Foreign Minister Shevardnadze issue joint statement condemning invasion.<br>▪ European Community (EC) condemns Iraq's invasion.<br>▪ Canada, Japan, and EC impose embargo on Iraq.<br>▪ President Bush and Prime Minister Thatcher meet in Aspen, CO. Thatcher advocates rapid and firm military response. |
| **5-11** | ▪ King Fahd invites friendly forces to Saudi Arabia.<br>▪ Military command in Riyadh established.<br>▪ Operation Desert Shield announced.<br>▪ First US, Egyptian, and Moroccan troops arrive (US F-15 aircraft).<br>▪ United Kingdom sends air and naval support to Saudi Arabia. | ▪ Iraq announces annexation of Kuwait.<br>▪ US Secretary of Defense, General Schwarzkopf, and others meet with King Fahd to discuss Saudi Arabia's military situation.<br>▪ Iraqi troops begin seizing US and British nationals in Kuwait.<br>▪ Iraq calls for "holy war" against Americans and Israelis.<br>▪ Arab League votes to send force to Saudi Arabia. |

# DESERT SHIELD: OVERVIEW OF MAJOR EVENTS

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **August** | | |
| **12-18** | ▪ First Syrian troops arrive in Saudi Arabia.<br>▪ Naval intercept (multinational) operations begin.<br>▪ First naval boarding and intercept take place in Gulf.<br>▪ 160,000 Iraqi troops in Kuwait - 1,400 tanks.<br>▪ First US Desert Shield death - Air Force Staff Sergeant. | ▪ Jordan's King Hussein meets with Saddam Hussein in Baghdad then confers with President Bush in Washington.<br>▪ Saddam Hussein offers "full peace" with Iran by returning territory and prisoners.<br>▪ Speaker of Iraqi Parliament announces that citizens of aggressive nations will not be released until threat of war ends.<br>▪ Saddam Hussein announces peace plan based upon Israel withdrawing from occupied territories. |
| **19-25** | ▪ US troop build-up rapidly organized.<br>▪ US Reserve component call-up authorization set at 48,700 troops - initial call-up includes 46,700 troops.<br>▪ Federal Republic of Germany troops begin deployment to Gulf.<br>▪ Secretary of Air Force activates six airlift squadrons of USAF Guard and Reserves. | ▪ Saddam Hussein offers to release hostages if US forces withdraw and sanctions are lifted.<br>▪ Saddam Hussein talks with British hostages on TV.<br>▪ Iraq promises to release dependents of diplomats held hostage. |
| **26-31** | ▪ First Maritime Prepositioning Ship arrives at Al Jubayl.<br>▪ First US Sealift forces arrive in Saudi Arabia.<br>▪ US Airlift has shuttled 72,000 passengers and 100,000 tons of supplies to date.<br>▪ First boarding of Iraqi vessel.<br>▪ 265,000 Iraqi forces in area - 2,200 tanks.<br>▪ Secretary of Army activates 50 Army National Guard and Reserve units. | ▪ UN Secretary General meets with Iraq's Foreign Minister to discuss crisis.<br>▪ Iraq informs US that unidentified hostage has died. |

# DESERT SHIELD: OVERVIEW OF MAJOR EVENTS

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **September** | | |
| **1-8** | ▪ 100,000 US forces in theater of operations.<br>▪ 23 nations have contributed to multinational force.<br>▪ Federal Republic of Germany agrees to deploy chemical detection vehicles in Gulf.<br>▪ Additional 89 Air Force, Navy, and Army Reserve units activated. | ▪ Saddam Hussein calls for a "holy war" against US forces and the overthrow of the Saudi King.<br>▪ US Secretary of State states in Jiddah that a regional security structure must be created to forestall future aggression in region. |
| **9-15** | ▪ Naval intercepts 840 - boardings 40.<br>▪ US sealift has delivered 326,000 tons of supplies (this equals supply delivery in first three months of Korean War) to date.<br>▪ British "Desert Rats" sent to Saudi Arabia.<br>▪ Additional Army, Air Force, and Navy Reserve forces activated. | ▪ President Bush and Gorbachev meet in Helsinki - warn Saddam Hussein of "additional steps" if demands are not met.<br>▪ President Bush addresses joint session of Congress on crisis.<br>▪ Iran and Iraq agree to resume full diplomatic relations.<br>▪ Iran calls for "holy war" against US presence in Gulf.<br>▪ Baker meets with Syria's Assad in Damascus.<br>▪ Iraq warns US to expect terrorist attacks. |
| **16-22** | ▪ Naval intercepts 1,100; boardings 80.<br>▪ Iraqi troops 360,000; 2,800 tanks; 1,800 APCs; 1,450 artillery pieces.<br>▪ 21,700 US Reservists called-up to date.<br>▪ French forces begin Saudi Arabian deployment.<br>▪ 44 Navy units activated. | ▪ President Bush's taped address to Iraqi people airs in Baghdad.<br>▪ 12 EC countries expel Iraqi military attaches.<br>▪ UN expels Iraqi Embassy staffers.<br>▪ Iraq impounds assets of countries supporting embargo.<br>▪ "Mother of all battles" threat first made by Saddam Hussein.<br>▪ Iraq banned from Asian games in Beijing. |
| **23-30** | ▪ 430,000 Iraqi troops in theater; 3,500 tanks; 2,500 APCs; 1,700 artillery pieces.<br>▪ Additional Army Reserve and National Guard and Navy Reserve units activated. | ▪ Saddam Hussein threatens to destroy Kuwaiti oil fields and draw Israel into war.<br>▪ Congress is notified of Letter of Offer to Saudi Government for the purpose of arms purchase. |

# DESERT SHIELD: OVERVIEW OF MAJOR EVENTS

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **October** | | |
| **1-6** | ▪ US forces total 120,000 in theater.<br>▪ Carrier USS Independence in Gulf - first carrier in Gulf since 1974.<br>▪ 430,000 Iraqi troops in theater.<br>▪ 4 Air Force and 56 Navy Reserve units called-up. | |
| **7-13** | ▪ Secretary of Army orders 38 Army Reserve and National Guard units to active duty.<br>▪ Commandant of Marine Corps orders Reservists to form Combat Service Support Detachment 40. | ▪ Intense diplomatic activity continuing to hold coalition together.<br>▪ Firm US opposition to linking Gulf conflict with Palestinian question. |
| **14-20** | ▪ Additional Army and Navy Reserve units activated. | |
| **21-27** | ▪ General Powell meets with General Schwarzkopf in Saudi Arabia to evaluate military status.<br>▪ US troop strength 210,000.<br>▪ Naval intercepts 2,736; boardings 282; diversions 12. | ▪ US Secretary of Defense announces that deployment will continue and no upper limit set. |
| **28-31** | | ▪ Steam line rupture aboard USS Iwo Jima kills 10 sailors. |
| **November** | | |
| **1-3** | ▪ Secretary of the Navy announces activation of 26 Naval Reserve units. | ▪ US Secretary of State visits troops in Saudi Arabia. |
| **4-10** | ▪ Continued deployment of US troops announced to meet all strategic requirements.<br>▪ Additional Army, Navy, Air Force, and Marine Corps strategic requirements forces activated. | ▪ US Secretary of State says "a new phase" has begun in Gulf - global community willing to resort to force.<br>▪ President Ozal of Turkey rules out second front against Iraq. |

# DESERT SHIELD: OVERVIEW OF MAJOR EVENTS

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **November** | | |
| **11-17** | ▪ US Reserve call-up authority raised to 80,000.<br>▪ Exercise "Imminent Thunder" held - joint amphibious operation of coalition forces.<br>▪ Authorization to extend current call-up of National guard and Reserve members from 90 to 180 days is approved. | |
| **18-24** | ▪ Secretary of Army given authority to extend foreign service tours indefinitely and extend training through Christmas and New Year holidays.<br>▪ Additional units activated from all services. | ▪ President Bush visits troops in Saudi Arabia on Thanksgiving. |
| **25-30** | ▪ US forces in theater 240,000.<br>▪ Additional Army, Navy, and Marine Corp Reserve units activated. | ▪ US Ambassador to UN presents a report of human rights violations by Iraqi forces in Kuwait.<br>▪ President Bush invites Iraqi Foreign Minister to Washington and offers to send US Secretary of State to Iraq between December 15 and Jan 15. |
| **December** | | |
| **1-8** | ▪ Increased Reserve call-up authorized - total of 188,000 call-up authorized.<br>▪ Iraq test fires first missile in Iraq - flight path away from coalition troops.<br>▪ 4,600 Naval intercepts; 569 boardings;and 21 diversions. | ▪ Iraq announces "imminent release" of hostages.<br>▪ IRS extends tax filing date for military members participating in Desert Storm. |
| **9-15** | ▪ Selected Reserve and Army National Guard units ordered to Active duty by Secretary of the Army.<br>▪ Commandant of the Marine Corps orders selected Reserve units to Active duty.<br>▪ Secretary of the Navy orders additional Reserve units activated. | |

# DESERT SHIELD: OVERVIEW OF MAJOR EVENTS

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **December** | | |
| 16-22 | ▪ Additional Navy, Marine Corps, and Army units activated. | ▪ US Secretary of Defense and General Powell visit Saudi Arabia.<br>▪ Bob Hope arrives in Saudi Arabia for Christmas shows. |
| 23-31 | ▪ Iraq test fires second missile in Iraq - flight path away from coalition troops.<br>▪ Additional Navy and Army units activated. | ▪ IBN Khaldom "peace ship" intercepted, boarded, and diverted. |
| **January** | | |
| 1-5 | ▪ 530,000 Iraqi troops in theater.<br>▪ 245,000 coalition troops in theater (excluding US troops).<br>▪ 325,000 US troops in theater.<br>▪ Additional Army and Navy units activated. | |
| 6-12 | ▪ US Military Airlift Command (MAC) has flown more than 10,000 airlift missions.<br>- Carried 370,000 passengers<br>- Transported 346,000 tons of cargo. | ▪ US Secretary of State and Iraqi Foreign Minister's talks in Geneva fail. |
| 13-15 | ▪ Secretaries of Army and Navy order activation of additional Reserve units. | |

# DESERT STORM

## AIR WAR

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **Week 1**<br>**1/16-1/23** | ▪ Offensive air campaign begins.<br>- Aircraft from US, France, Kuwait Saudi Arabia, and United Kingdom participate in first sorties<br>▪ Executive Order raises limit on activation of Reserve forces. Old limit 189,000 - new limit 360,000.<br>▪ Naval intercepts 6,968; boardings 830.<br>▪ 474,000 US troops in theater.<br>▪ 545,000 Iraqi troops, 4,200 tanks, 2,800 APCs, and 3,100 artillery pieces.<br>▪ 165,797 Guard and Reservists on active duty (15% in Gulf theater).<br>▪ 12,000 sorties flown first week - 14 US aircraft downed.<br>▪ Iraq launches missile attacks directed at Israel and Saudi Arabia.<br>▪ Patriot missiles and crews sent to Israel. | ▪ Saddam Hussein in TV address states that he wanted Kind Fahd of Saudi Arabia to "rot in hell" and wished to destroy the "poisonous whole nest in Tel Aviv."<br>▪ President Bush announces beginning of offensive campaign to nation at 9:00 p.m. EST (1/16).<br>▪ US informs Iraq that it will treat prisoners in accordance with the provisions of the Third Geneva Convention.<br>▪ US Government protests coercion of captured pilots after Iraq broadcasts statements by pilots.<br>▪ Following SCUD attacks on Israel, Israel convinced not to attack Iraq. |
| **Week 2**<br>**1/24-1/30** | ▪ Ground forces exchange sporadic fire with Iraqi forces.<br>▪ Iraqi aircraft flown to Iran (89 by week's end). Iran announces aircraft will remain grounded until cessation of hostilities.<br>▪ Air campaign shifting from strategic interdiction towards battlefield preparation.<br>▪ 30,000 total sorties flown - 7,000 Naval intercepts made.<br>▪ 53 SCUD missile attacks since beginning of Desert Storm.<br>▪ 500,000 US troops in theater.<br>▪ In four separate incidents, mechanized Iraqi troops engage Allied forces - most serious incursion captures Khafji (Marine artillery spotters stationed in abandoned town remain on station). | ▪ Iraq begins pumping oil into Gulf from Kuwait's Sea Island Terminal - estimated 1.5 million barrels released - action condemned as environmental terrorism - oil manifolds bombed and discharge ends.<br>▪ President of US gives State of the Union Address.<br>▪ Soviet Foreign Minister and US Secretary of State meet to discuss possibilities for political solution - meeting inconclusive. |

# DESERT STORM

## AIR WAR

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **Week 3** | | |
| **1/31-2/6** | ▪ Iraqi armor repulsed from Khafji (primarily Saudi troops with US Marines in Khafji calling in artillery and air strikes).<br>▪ Naval engagements in Maradim and Bubiyan Islands - also engagements near Shatt El Arab and Um Oasar Naval facility and Mina Al Bakr oil terminal.<br>▪ Guns of USS Missouri used in support of ground forces - first use since Korea - range 25 miles - accuracy within the space of a tennis court.<br>▪ Ground force activity limited to light exchange of small arms.<br>▪ 44,000 sorties flown to date.<br>▪ Total of 120 Iraqi aircraft flown to Iran. | ▪ Iraqi radio announces no fuel oil or gasoline available to civilians.<br>▪ Iraq hides military vehicles and equipment in civilian residential areas.<br>▪ US military transport drivers missing - feared captured - one male, one female.<br>▪ Iraqi prisoners captured to date are in very poor shape - many have open sores and are starved. |
| **Week 4** | | |
| **2/7-2/13** | ▪ US Secretary of State and Chairman of the Joint Chiefs of Staff arrive in Gulf - meet with Saudi officials and briefed on current military circumstance.<br>▪ USS Wisconsin joins Naval bombardment in support of ground troops.<br>▪ Sporadic small arms fire across battle lines.<br>▪ Total sorties exceed 67,000.<br>▪ Total of 62 SCUD missile attacks to date. | ▪ Eroding Iraqi morale indicated by continuing desertions - poor physical condition of prisoners observed.<br>▪ Iraq calls-up 17-18 year olds.<br>▪ Iraq sets Kuwaiti well heads ablaze - 55 burning at end of week.<br>▪ Israel Minister Moshe Arens visits Pentagon to discuss security commitments.<br>▪ Bombing of military command center becomes media event. Iraqis claim building was civilian bomb shelter. |

# DESERT STORM

## AIR WAR

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **Week 5**<br>**2/14-2/10** | ▪ Navy continues coastal operations - two vessels damaged by mines.<br>▪ Total of 68 SCUD missile attacks to date.<br>▪ Total of 86,000 sorties flown. | ▪ Gorbachev's envoy meets with Saddam Hussein to discuss peaceful resolution to conflict.<br>▪ Baghdad radio announces acceptance of UN Resolution but stipulates linkage to Palestinian issues.<br>▪ President Bush calls announcement a "cruel hoax" and calls for strict compliance and no linkage.<br>▪ Iraq's Foreign Minister meets with Gorbachev in Moscow.<br>▪ Executions of Kuwaitis increasing. |
| **Week 6**<br>**2/21-2-22** | ▪ Iraqi front line fortifications bombed and napalm used to set oil ditches on fire.<br>▪ Total of 94,000 sorties flown.<br>▪ 533,000 US troops in theater. | ▪ Gorbachev offers new peace plan.<br>▪ Saddam Hussein threatens to turn Kuwait into an "inferno."<br>▪ 190 oil wells in Kuwait set ablaze.<br>▪ President Bush rejects peace plan - sets condition that full compliance required by noon EST Feb. 23, 1991. |

# DESERT STORM

# GROUND WAR

| | MILITARY | POLITICAL/OTHER |
|---|---|---|
| **February** | | |
| **23-28** | ▪ Major ground offensive initiated - troops from US, Saudi Arabia, UK, France, UAE, Bharain, Qatar, Oman, Syria, Kuwait, Italy, and Canada participate.<br>▪ Total of 103,000 sorties flown.<br>▪ Moving from West and North to Kuwait, offensive designed to trap retreating Iraqi forces in pincer movement.<br>▪ Resistance generally light or nonexistent - many prisoners taken.<br>▪ No chemical weapons encountered.<br>▪ Stiff resistance met at Kuwait International Airport.<br>▪ Major tank battle with Republican Guard units.<br>▪ Coalition forces suspend combat operations. | ▪ President Bush announces beginning of ground war Feb. 23, 1991 at 10:00 p.m. EST.<br>▪ Over 590 wells torched by Iraqis.<br>▪ Saddam Hussein calls for withdrawal of forces to August 1 positions - announces withdrawal as "victorious" stand against US led forces.<br>▪ US calls tactic of retreating to fight another day unacceptable - prosecution of ground war continues.<br>▪ At 100 hours into ground war, major objectives achieved (midnight EST Feb. 27, 1991):<br>- Kuwait liberated<br>- Iraq's military forces defeated<br>- American flag flies at US Embassy.<br>▪ Coalition forces suspend combat operations - suspension contingent upon Iraq ceasing military operations and not firing any SCUD missiles.<br>▪ Baghdad radio announces cessation of hostility (4:00 a.m. EST February 28, 1991). |